



Selectus Custom Fertilizer -
Ingredient Safety Data Sheets



Table of contents

0-0-21 Manganese chelate 12 EDTA	1
0-0-9 Iron Chelate 11 DTPA	2
Ammonium Nitrate.....	3
Ammonium Sulphate	4
Blue Tracer Dye	5
Borax	6
Boric Acid	7
Calcium Chloride	8
Calcium Nitrate Liquid	9
Calcium Nitrate, Ammonium Free Liquid	10
Calcium Nitrate, Ammonium Free.....	11
Calcium Nitrate, Fertilizer grade	12
Copper Chelate	13
Copper Sulphate Pentahydrate	14
Iron Chelate 6 EDDHA	15
Iron Chelate 11 DTPA	16
Iron Chelate 13 EDTA.....	17
Iron Sulphate	18
Magnesium Chelate 13 EDTA	19
Magnesium Nitrate	20
Magnesium Sulphate, Epsom Salt.....	21
Manganese Chelate	22
Manganese Sulphate	23
Mono Ammonium Phosphate	24
Monopotassium Phosphate, MKP	25
PeKacid.....	26
Potassium Bicarbonate	27
Potassium Chloride	28
Potassium Nitrate Greenhouse Grade	29
Potassium Nitrate	30
Potassium Sulphate	31
Sodium Molybdate Anhydrous	32
Solupotasse	33
Urea	34
Urea Phosphate.....	35
Zinc Chelate 15 EDTA	36
Zinc Sulphate Monohydrate	37





Section 1: IDENTIFICATION

Product Name: 0-0-21 Manganese Chelate 12 EDTA
Synonyms: Not available.
Product Use: Fertilizer.
Restrictions on Use: Not available.
Manufacturer/Supplier: Plant Products Inc.
50 Hazelton Street
Leamington, Ontario N8H 1B8
Phone Number: 519-326-9037
Toll free number 1-800-387-2449 (English)
Toll free number 1-800-361-9184 (French)
Emergency Phone: 1-800-424-9300 (CHEMTREC, 24 hours)
Date of Preparation of SDS: December 12, 2018

Section 2: HAZARD(S) IDENTIFICATION

GHS INFORMATION

Classification: Not hazardous according to OSHA criteria (29 CFR 1910.1200).
Not hazardous according to WHMIS 2015 criteria.

LABEL ELEMENTS

Hazard None.

Pictogram(s):

Signal Word: None.

Hazard Not applicable.

Statements:

Precautionary Statements

Prevention: Not applicable.

Response: Not applicable.

Storage: Not applicable.

Disposal: Not applicable.

Hazards Not Otherwise Classified: Not applicable.

Ingredients with Unknown Toxicity: None.

This material is not considered hazardous by the OSHA Hazard Communication Standard, (29 CFR 1910.1200).

This material is not considered hazardous by the Hazardous Products Regulations.



Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient(s)	Common name / Synonyms	CAS No.	% wt./wt.
Manganate(2-), [[N,N'-1,2-ethanediy]bis[N-[(carboxy-.kappa.O)methyl]glycinato-.kappa.N,.kappa.O]](4-)]-, potassium (1:2), (OC-6-21)-	Dipotassium ((N,N'-ethylenebis(N-(carboxymethyl)glycinato))(4-)-N,N',O,O',ON,ON')manganate(2-)	68015-77-0	100

Impurities / Stabilizing additives: None known.

Section 4: FIRST-AID MEASURES

- Inhalation:** If inhaled: Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.
- Eye Contact:** If in eyes: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.
- Skin Contact:** If on skin: Wash with plenty of water. Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.
- Ingestion:** If swallowed: Call a poison center or doctor if you feel unwell. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.
Acute and delayed symptoms and effects: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.
- General Advice:** In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).
- Note to Physicians:** Symptoms may not appear immediately.

Section 5: FIRE-FIGHTING MEASURES

FLAMMABILITY AND EXPLOSION INFORMATION

Not flammable or combustible by OSHA/WHMIS criteria.

Sensitivity to Mechanical Impact: This material is not sensitive to mechanical impact.

Sensitivity to Static Discharge: This material is not sensitive to static discharge.

MEANS OF EXTINCTION

Suitable Extinguishing Media: Use appropriate extinguishing media for surrounding fire. Move containers from fire area if you can do it without risk.



Unsuitable Extinguishing Media: Not available.

Products of Combustion: Oxides of carbon. Oxides of nitrogen.

Protection of Firefighters: Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may cause pollution. Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

Section 6: ACCIDENTAL RELEASE MEASURES

Emergency Procedures: Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering.

Personal Precautions: Do not touch or walk through spilled material. Use personal protection recommended in Section 8.

Environmental Precautions: Keep out of drains, sewers, ditches, and waterways.

Methods for Containment: Do not flush to sewer or allow to enter waterways.

Methods for Clean-Up: Avoid generating dust. Sweep up and shovel into suitable containers for disposal.

Other Information: See Section 13 for disposal considerations.

Section 7: HANDLING AND STORAGE

Handling:
Do not swallow. See Section 8 for information on Personal Protective Equipment.

Storage:
Recommended storage temperature: -5 C to + 30 °C. Store away from incompatible materials. See Section 10 for information on Incompatible Materials. Keep out of the reach of children.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

Component

Dipotassium ((N,N'-ethylenebis(N-(carboxymethyl)glycinato))(4-)-N,N',O,O',ON,ON')manganate(2-) [CAS No. 68015-77-0]

ACGIH: 10 mg/m³ (TWA) (Inhalable.); 3 mg/m³ (TWA) (Respirable.); For Particles (Insoluble or Poorly Soluble) Not Otherwise Specified

OSHA: 15 mg/m³ (Total dust) (TWA), 5 mg/m³ (Respirable fraction) (TWA); For Particulates Not Otherwise Regulated (PNOR).

TWA: Time-Weighted Average

Engineering Controls: Not normally required.

PERSONAL PROTECTIVE EQUIPMENT (PPE)



Eye/Face Protection: Wear safety glasses. Indirect vented, dust-tight goggles are required if dust is generated when handling this product. Use

equipment for eye protection that meets the standards referenced by CSA Standard CAN/CSA-Z94.3-92 and OSHA regulations in 29 CFR 1910.133 for Personal Protective Equipment.

Hand Protection: Wear protective gloves. Nitrile gloves, layer thickness 0.11 mm and breakthrough time > 480 minutes, are recommended. Consult manufacturer specifications for further information.

Skin and Body Protection: Wear protective clothing.

Respiratory Protection: If engineering controls and ventilation are not sufficient to control exposure to below the allowable limits then an appropriate NIOSH/MSHA approved air-purifying respirator that meets the requirements of CSA Standard CAN/CSA-Z94.4-11, with particulate filter, or self-contained breathing apparatus must be used.

General Hygiene Considerations: Handle according to established industrial hygiene and safety practices. Consult a competent industrial hygienist to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES
--

Appearance: Solid, microgranules.

Colour: White to yellowish.

Odour: Odourless.

Odour Threshold: Not available.

Physical State: Solid.

pH (1% solution in water): 6.0

Melting Point / Freezing Point: Not available.

Initial Boiling Point: Not available.

Boiling Range: Not available.

Flash Point: Not available.

Evaporation Rate: Not available.

Flammability (solid, gas): See Section 5.

Lower Flammability Limit: Not available.

Upper Flammability Limit: Not available.

Vapor Pressure: Not available.

Vapor Density: Not available.

Relative Density: Not available.



Solubilities: Water solubility: 800 g/l at 20 °C (68 °F).

Partition Coefficient: n-Octanol/Water: Not available.

Auto-ignition Temperature: Not available.

Decomposition Temperature: Not available.

Viscosity: Not available.

Percent Volatile, wt. %: Not available.

VOC content, wt. %: Not available.

Density: Not available.

Coefficient of Water/Oil Distribution: Not available.

Section 10: STABILITY AND REACTIVITY

Reactivity: Contact with incompatible materials. Exposure to heat.

Chemical Stability: Stable under normal storage conditions.

Possibility of Hazardous Reactions: None known.

Conditions to Avoid: Contact with incompatible materials. Exposure to heat.

Incompatible Materials: None known.

Hazardous Decomposition Products: Not available.

Section 11: TOXICOLOGICAL INFORMATION

EFFECTS OF ACUTE EXPOSURE

Product Toxicity

Oral: Not available.

Dermal: Not available.

Inhalation: Not available.

Component Toxicity

Component	CAS No.	LD ₅₀ oral	LD ₅₀ dermal	LC ₅₀
Dipotassium ((N,N'-ethylenebis(N-(carboxymethyl)glycinato))(4-)-N,N',O,O',ON,ON')manganate(2-)	68015-77-0	> 2000 mg/kg (rat)	> 2000 mg/kg (rat)	> 5.16 mg/L (rat); 4H

Likely Routes of Exposure: Eye contact. Skin contact. Inhalation. Ingestion.

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system.

Symptoms (including delayed and immediate effects)

Inhalation: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.



- Eye:** May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.
- Skin:** May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.
- Ingestion:** May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.
- Skin Sensitization:** Not available.
- Respiratory Sensitization:** Not available.
- Medical Conditions Aggravated By Exposure:** Not available.

EFFECTS OF CHRONIC EXPOSURE (from short and long-term exposure)

- Target Organs:** Skin. Eyes. Gastrointestinal tract. Respiratory system.
- Chronic Effects:** Prolonged or repeated contact may dry skin and cause irritation.
- Carcinogenicity:** This product does not contain any carcinogens or potential carcinogens above reportable thresholds as listed by ACGIH, IARC, OSHA, or NTP.
- Mutagenicity:** Not available.
- Reproductive Effects:** Not available.
- Developmental Effects**
 - Teratogenicity:** Not available.
 - Embryotoxicity:** Not available.
- Toxicologically Synergistic Materials:** Not available.

Section 12: ECOLOGICAL INFORMATION

- Ecotoxicity:** NOEC (fish, 96h, OECD 203) > 1000 mg/L;
EC50 (daphnia, 21 days, OECD 211) = 365 mg/L;
EC50 (algae, 72h, OECD 201) = 649.3 mg/L.
- Persistence / Degradability:** Not available.
- Bioaccumulation / Accumulation:** Not available.
- Mobility in Environment:** Not available.
- Other Adverse Effects:** Not available.

Section 13: DISPOSAL CONSIDERATIONS

- Disposal Instructions:** Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

Section 14: TRANSPORT INFORMATION

U.S. Department of Transportation (DOT)

Proper Shipping Name: Not regulated.

Class: Not applicable.

UN Number: Not applicable.

Packing Group: Not applicable.

Label Code: Not applicable.

Canada Transportation of Dangerous Goods (TDG)

Proper Shipping Name: Not regulated.

Class: Not applicable.

UN Number: Not applicable.

Packing Group: Not applicable.

Label Code: Not applicable.

Section 15: REGULATORY INFORMATION

Chemical Inventories

US (TSCA)

The components of this product are in compliance with the chemical notification requirements of TSCA.

Canada (DSL)

The components of this product are in compliance with the chemical notification requirements of the NSN Regulations under CEPA, 1999.

Federal Regulations

United States

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SARA Title III

No components are listed.

State Regulations

Massachusetts

US Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

No components are listed.

New Jersey

US New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

No components are listed.



PLANTPRODUCTS®

SAFETY DATA SHEET

0-0-21 Manganese chelate 12 EDTA

Date of Preparation: December 12, 2018

Pennsylvania

US Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

No components are listed.

California

California Prop 65: This product does not contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Section 16: OTHER INFORMATION

Disclaimer:

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for their own particular use.

Date of Preparation of SDS: December 12, 2018

Version: 1.0

GHS SDS Prepared by: Aegis Regulatory Inc.

Phone: (519) 488-0351

www.aegisreg.com

**Section 1: IDENTIFICATION**

Product Name: 0-0-9 Iron Chelate 11 DTPA

Synonyms: Not available.

Product Use: Fertilizer.

Restrictions on Use: Not available.

Manufacturer/Supplier: Plant Products Inc.
50 Hazelton Street
Leamington, Ontario N8H 1B8

Phone Number: 519-326-9037
Toll free number 1-800-387-2449 (English)
Toll free number 1-800-361-9184 (French)

Emergency Phone: 1-800-424-9300 (CHEMTREC, 24 hours)

Date of Preparation of SDS: December 12, 2018

Section 2: HAZARD(S) IDENTIFICATION**GHS INFORMATION**

Classification: Not hazardous according to OSHA criteria (29 CFR 1910.1200).
Not hazardous according to WHMIS 2015 criteria.

LABEL ELEMENTS

Hazard None.

Pictogram(s):

Signal Word: None.

Hazard Not applicable.

Statements:

Precautionary Statements

Prevention: Not applicable.

Response: Not applicable.

Storage: Not applicable.

Disposal: Not applicable.

Hazards Not Otherwise Classified: Not applicable.

Ingredients with Unknown Toxicity: 11% of this product mixture consists of ingredient(s) of unknown acute toxicity.

This material is not considered hazardous by the OSHA Hazard Communication Standard, (29 CFR 1910.1200).

This material is not considered hazardous by the Hazardous Products Regulations.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient(s)	Common name / Synonyms	CAS No.	% wt./wt.
Diethylenetriaminepentaacetic acid, ferric potassium complex	Fe DTPA K	Not available.	11

Section 4: FIRST-AID MEASURES

Inhalation:	If inhaled: Call a poison center or doctor if you feel unwell. Acute and delayed symptoms and effects: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.
Eye Contact:	If in eyes: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center or doctor if you feel unwell. Acute and delayed symptoms and effects: May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.
Skin Contact:	If on skin: Wash with plenty of water. Call a poison center or doctor if you feel unwell. Acute and delayed symptoms and effects: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.
Ingestion:	If swallowed: Call a poison center or doctor if you feel unwell. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Acute and delayed symptoms and effects: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.
General Advice:	In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).
Note to Physicians:	Symptoms may not appear immediately.

Section 5: FIRE-FIGHTING MEASURES

FLAMMABILITY AND EXPLOSION INFORMATION

Not flammable or combustible by OSHA/WHMIS criteria.

Sensitivity to Mechanical Impact: This material is not sensitive to mechanical impact.

Sensitivity to Static Discharge: This material is not sensitive to static discharge.

MEANS OF EXTINCTION

Suitable Extinguishing Media: Use appropriate extinguishing media for surrounding fire. Move containers from fire area if you can do it without risk.

Unsuitable Extinguishing Media: Not available.



Products of Combustion: Oxides of nitrogen.

Protection of Firefighters: Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may cause pollution. Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

Section 6: ACCIDENTAL RELEASE MEASURES

Emergency Procedures: Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering.

Personal Precautions: Do not touch or walk through spilled material. Use personal protection recommended in Section 8.

Environmental Precautions: Keep out of drains, sewers, ditches, and waterways.

Methods for Containment: Do not flush to sewer or allow to enter waterways.

Methods for Clean-Up: Avoid generating dust. Sweep up and shovel into suitable containers for disposal.

Other Information: See Section 13 for disposal considerations.

Section 7: HANDLING AND STORAGE

Handling: Do not swallow. See Section 8 for information on Personal Protective Equipment.

Storage: Recommended storage temperature: -5 C to + 30 °C. Store away from incompatible materials. See Section 10 for information on Incompatible Materials. Keep out of the reach of children.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines Component

Fe DTPA K [CAS No. Not applicable]
ACGIH: 10 mg/m³ (TWA) (Inhalable.); 3 mg/m³ (TWA) (Respirable.); For Particles (Insoluble or Poorly Soluble) Not Otherwise Specified
OSHA: 15 mg/m³ (Total dust) (TWA), 5 mg/m³ (Respirable fraction) (TWA); For Particulates Not Otherwise Regulated (PNOR).

TWA: Time-Weighted Average

Engineering Controls: Not normally required.

PERSONAL PROTECTIVE EQUIPMENT (PPE)



Eye/Face Protection: Wear safety glasses. Indirect vented, dust-tight goggles are required if dust is generated when handling this product. Use

equipment for eye protection that meets the standards referenced by CSA Standard CAN/CSA-Z94.3-92 and OSHA regulations in 29 CFR 1910.133 for Personal Protective Equipment.

Hand Protection: Wear protective gloves. Nitrile gloves, layer thickness 0.11 mm and breakthrough time > 480 minutes, are recommended. Consult manufacturer specifications for further information.

Skin and Body Protection: Wear protective clothing.

Respiratory Protection: If engineering controls and ventilation are not sufficient to control exposure to below the allowable limits then an appropriate NIOSH/MSHA approved air-purifying respirator that meets the requirements of CSA Standard CAN/CSA-Z94.4-11, with particulate filter, or self-contained breathing apparatus must be used.

General Hygiene Considerations: Handle according to established industrial hygiene and safety practices. Consult a competent industrial hygienist to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES
--

Appearance:	Solid, microgranules.
Colour:	Brownish.
Odour:	Odourless.
Odour Threshold:	Not available.
Physical State:	Solid.
pH (1% solution in water):	5.0 ± 1.0
Melting Point / Freezing Point:	Not available.
Initial Boiling Point:	Not available.
Boiling Range:	Not available.
Flash Point:	Not available.
Evaporation Rate:	Not available.
Flammability (solid, gas):	See Section 5.
Lower Flammability Limit:	Not available.
Upper Flammability Limit:	Not available.
Vapor Pressure:	Not available.
Vapor Density:	Not available.
Relative Density:	Not available.



Solubilities: Water solubility: 700 g/L.

Partition Coefficient: n-Octanol/Water: Not available.

Auto-ignition Temperature: Not available.

Decomposition Temperature: Not available.

Viscosity: Not available.

Percent Volatile, wt. %: Not available.

VOC content, wt. %: Not available.

Density: 0.7 ± 0.10 g/cm³

Coefficient of Water/Oil Distribution: Not available.

Section 10: STABILITY AND REACTIVITY

Reactivity: Contact with incompatible materials. Exposure to heat. Aqueous solutions may be corrosive to metals.

Chemical Stability: Stable under normal storage conditions.

Possibility of Hazardous Reactions: None known.

Conditions to Avoid: Contact with incompatible materials. Exposure to heat.

Incompatible Materials: None known.

Hazardous Decomposition Products: Not available.

Section 11: TOXICOLOGICAL INFORMATION

EFFECTS OF ACUTE EXPOSURE

Product Toxicity

Oral: Not available.

Dermal: Not available.

Inhalation: Not available.

Component Toxicity

Component	CAS No.	LD ₅₀ oral	LD ₅₀ dermal	LC ₅₀
Fe DTPA K	Not available.	Not available.	Not available.	Not available.

Likely Routes of Exposure: Eye contact. Skin contact. Inhalation. Ingestion.

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system.

Symptoms (including delayed and immediate effects)

Inhalation: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.



- Eye:** May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.
- Skin:** May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.
- Ingestion:** May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.
- Skin Sensitization:** Not available.
- Respiratory Sensitization:** Not available.
- Medical Conditions Aggravated By Exposure:** Not available.

EFFECTS OF CHRONIC EXPOSURE (from short and long-term exposure)

- Target Organs:** Skin. Eyes. Gastrointestinal tract. Respiratory system.
- Chronic Effects:** Prolonged or repeated contact may dry skin and cause irritation.
- Carcinogenicity:** This product does not contain any carcinogens or potential carcinogens above reportable thresholds as listed by ACGIH, IARC, OSHA, or NTP.
- Mutagenicity:** Not available.
- Reproductive Effects:** Not available.
- Developmental Effects**
 - Teratogenicity:** Not available.
 - Embryotoxicity:** Not available.
- Toxicologically Synergistic Materials:** Not available.

Section 12: ECOLOGICAL INFORMATION

- Ecotoxicity:** Not available.
- Persistence / Degradability:** Not available.
- Bioaccumulation / Accumulation:** Not available.
- Mobility in Environment:** Not available.
- Other Adverse Effects:** Not available.

Section 13: DISPOSAL CONSIDERATIONS

- Disposal Instructions:** Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

Section 14: TRANSPORT INFORMATION

U.S. Department of Transportation (DOT)

Proper Shipping Name: Not regulated.
Class: Not applicable.
UN Number: Not applicable.
Packing Group: Not applicable.
Label Code: Not applicable.

Canada Transportation of Dangerous Goods (TDG)

Proper Shipping Name: Not regulated.
Class: Not applicable.
UN Number: Not applicable.
Packing Group: Not applicable.
Label Code: Not applicable.

Section 15: REGULATORY INFORMATION

Federal Regulations

United States

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SARA Title III

No components are listed.

State Regulations

Massachusetts

US Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

No components are listed.

New Jersey

US New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

No components are listed.

Pennsylvania

US Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

No components are listed.

California

California Prop 65: This product does not contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Section 16: OTHER INFORMATION

Disclaimer:

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for their own particular use.

Date of Preparation of SDS: December 12, 2018

Version: 1.0

GHS SDS Prepared by: Aegis Regulatory Inc.

Phone: (519) 488-0351

www.aegisreg.com

Section 1: IDENTIFICATION

Product Name: Ammonium Nitrate
Synonyms: Not available.
Product Use: Fertilizer.
Restrictions on Use: Not available.
Manufacturer/Supplier: Plant Products Inc.
50 Hazelton Street
Leamington, Ontario N8H 1B8
Phone Number: 519-326-9037
Toll free number 1-800-387-2449 (English)
Toll free number 1-800-361-9184 (French)
Emergency Phone: 1-800-424-9300 (CHEMTREC, 24 hours)
Date of Preparation of SDS: December 12, 2018

Section 2: HAZARD(S) IDENTIFICATION

GHS INFORMATION

Classification: Oxidizing Solids, Category 3
Eye Irritation, Category 2A

LABEL ELEMENTS

Hazard

Pictogram(s):



Signal Word: Warning

Hazard Statements: May intensify fire; oxidizer.
Causes serious eye irritation.

Precautionary Statements

Prevention: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Keep away from clothing and other combustible materials.
Wash thoroughly after handling.
Wear protective gloves, protective clothing and eye protection.

Response: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.
In case of fire use: Use water.

Storage: Not applicable.

Disposal: Dispose of contents/container in accordance with applicable regional, national and local laws and regulations.



Hazards Not Otherwise Classified: Not applicable.

Ingredients with Unknown Toxicity: None.

This material is considered hazardous by the OSHA Hazard Communication Standard, (29 CFR 1910.1200).

This material is considered hazardous by the Hazardous Products Regulations.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Ingredient(s)	Common name / Synonyms	CAS No.	% wt./wt.
Nitric acid ammonium salt (1:1)	Ammonium nitrate	6484-52-2	98 - 100
Nitric acid, magnesium salt (2:1)	Magnesium nitrate	10377-60-3	0.1 - 0.7

Section 4: FIRST-AID MEASURES

- Inhalation:** If inhaled: Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause respiratory irritation. Signs/symptoms may include burning pain in the nose and throat, coughing, wheezing, shortness of breath and pulmonary edema.
- Eye Contact:** If in eyes: Rinse cautiously with water for at least 20 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Acute and delayed symptoms and effects: Causes serious eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.
- Skin Contact:** If on skin: Wash with plenty of water. Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.
- Ingestion:** If swallowed: Call a poison center or doctor if you feel unwell. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.
Acute and delayed symptoms and effects: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.
- General Advice:** In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).
- Note to Physicians:** Symptoms may not appear immediately.

Section 5: FIRE-FIGHTING MEASURES

FLAMMABILITY AND EXPLOSION INFORMATION

May intensify fire; oxidizer. These substances will accelerate burning when involved in a fire. May ignite combustibles (wood, paper, oil, clothing, etc.). Containers may explode when heated. Runoff may create fire or explosion hazard.

If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

Fire involving Tanks or Car/Trailer Loads: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out. ALWAYS stay away from tanks engulfed in fire. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

Sensitivity to Mechanical Impact: This material is not sensitive to mechanical impact.

Sensitivity to Static Discharge: This material is not sensitive to static discharge.

MEANS OF EXTINCTION

Suitable Extinguishing Media: Small Fire: Use water.

Large Fire: Flood fire area with water from a distance. Do not move cargo or vehicle if cargo has been exposed to heat. Move containers from fire area if you can do it without risk.

Unsuitable Extinguishing Media: Do not use dry chemicals or foams. CO₂ or Halon® may provide limited control.

Products of Combustion: Oxides of nitrogen. Ammonia.

Protection of Firefighters: Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may cause pollution. Wear positive pressure self-contained breathing apparatus (SCBA). Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection. Structural firefighters' protective clothing will only provide limited protection.

Section 6: ACCIDENTAL RELEASE MEASURES

Emergency Procedures: As an immediate precautionary measure, isolate spill or leak area in all directions for at least 25 meters (75 feet). Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering. Keep combustibles (wood, paper, oil, etc.) away from spilled material.

Personal Precautions: Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Use personal protection recommended in Section 8.

Environmental Precautions: Not normally required.

Methods for Containment: Stop leak if you can do it without risk. Do not get water inside containers.

Methods for Clean-Up: Sweep up and shovel into suitable containers for disposal.

Other Information: See Section 13 for disposal considerations.

Section 7: HANDLING AND STORAGE

Handling:

Do not swallow. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep away from clothing and other combustible materials. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. See Section 8 for information on Personal Protective Equipment.

Storage:

Store away from incompatible materials. See Section 10 for information on Incompatible Materials. Keep out of the reach of children.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

**Exposure Guidelines
Component**

Ammonium nitrate [CAS No. 6484-52-2]

ACGIH: 10 mg/m³ (TWA) (Inhalable.); 3 mg/m³ (TWA) (Respirable.); For Particles (Insoluble or Poorly Soluble) Not Otherwise Specified

OSHA: 15 mg/m³ (Total dust) (TWA), 5 mg/m³ (Respirable fraction) (TWA); For Particulates Not Otherwise Regulated (PNOR).

Magnesium nitrate [CAS No. 10377-60-3]

ACGIH: 10 mg/m³ (TWA) (Inhalable.); 3 mg/m³ (TWA) (Respirable.); For Particles (Insoluble or Poorly Soluble) Not Otherwise Specified

OSHA: 15 mg/m³ (Total dust) (TWA), 5 mg/m³ (Respirable fraction) (TWA); For Particulates Not Otherwise Regulated (PNOR).

TWA: Time-Weighted Average

Engineering Controls: Use explosion-proof electrical, ventilating, and lighting equipment.

PERSONAL PROTECTIVE EQUIPMENT (PPE)



Eye/Face Protection: Wear chemical safety goggles. Indirect vented, dust-tight goggles are required if dust is generated when handling this product. Ensure that eyewash stations are close to the workstation location. Use equipment for eye protection that meets the standards referenced by CSA Standard CAN/CSA-Z94.3-92 and OSHA regulations in 29 CFR 1910.133 for Personal Protective Equipment.

Hand Protection: Wear protective gloves. Consult manufacturer specifications for further information.

Skin and Body Protection: Wear protective clothing. Flame resistant clothing that meets the NFPA 2112 and CAN/CGSB 155.20 standards is

recommended in areas where material is stored or handled.

Respiratory Protection:

If engineering controls and ventilation are not sufficient to control exposure to below the allowable limits then an appropriate NIOSH/MSHA approved air-purifying respirator that meets the requirements of CSA Standard CAN/CSA-Z94.4-11, with particulate filter, or self-contained breathing apparatus must be used.

General Hygiene Considerations:

Handle according to established industrial hygiene and safety practices. Consult a competent industrial hygienist to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Colourless to off-white prills.
Colour:	Colourless to off-white.
Odour:	Trace odour of ammonia.
Odour Threshold:	Not available.
Physical State:	Solid.
pH:	6.5 to 8.5
Melting Point / Freezing Point:	155 to 169.4 °C (311 to 336.9 °F)
Initial Boiling Point:	Not available.
Boiling Range:	Not available.
Flash Point:	Not available.
Evaporation Rate:	Not available.
Flammability (solid, gas):	See Section 5.
Lower Flammability Limit:	Not available.
Upper Flammability Limit:	Not available.
Vapor Pressure:	Not available.
Vapor Density:	Not available.
Relative Density:	1.72 (Water = 1) at 21.1 °C (70 °F)
Solubilities:	Soluble in water.
Partition Coefficient: n-Octanol/Water:	Not available.
Auto-ignition Temperature:	Not available.
Decomposition Temperature:	210 °C (410 °F)



Viscosity: Not available.
Percent Volatile, wt. %: Not available.
VOC content, wt. %: 0
Density: Not available.
Coefficient of Water/Oil Distribution: Not available.

Section 10: STABILITY AND REACTIVITY

Reactivity: Contact with incompatible materials. Sources of ignition. Exposure to heat.
Chemical Stability: Stable under normal storage conditions.
Possibility of Hazardous Reactions: None known.
Conditions to Avoid: Contact with incompatible materials. Sources of ignition. Exposure to heat.
Incompatible Materials: Strong acids. Strong bases. Strong reducers. Halogens. Combustible materials.
Hazardous Decomposition Products: Not available.

Section 11: TOXICOLOGICAL INFORMATION

EFFECTS OF ACUTE EXPOSURE

Product Toxicity

Oral: Not available.
Dermal: Not available.
Inhalation: Not available.

Component Toxicity

Component	CAS No.	LD ₅₀ oral	LD ₅₀ dermal	LC ₅₀
Ammonium nitrate	6484-52-2	2217 mg/kg (rat)	Not available.	Not available.
Magnesium nitrate	10377-60-3	5440 mg/kg (rat)	Not available.	Not available.

Likely Routes of Exposure: Eye contact. Skin contact. Inhalation. Ingestion.
Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system. Blood.

Symptoms (including delayed and immediate effects)

Inhalation: May cause respiratory irritation. Signs/symptoms may include burning pain in the nose and throat, coughing, wheezing, shortness of breath and pulmonary edema.
Eye: Causes serious eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.
Skin: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.



Ingestion: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Skin Sensitization: Not available.

Respiratory Sensitization: Not available.

Medical Conditions Not available.

Aggravated By Exposure:

EFFECTS OF CHRONIC EXPOSURE (from short and long-term exposure)

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system. Blood.

Chronic Effects: Prolonged or repeated contact may dry skin and cause irritation.

Carcinogenicity: This product does not contain any carcinogens or potential carcinogens above reportable thresholds as listed by ACGIH, IARC, OSHA, or NTP.

Mutagenicity: Not available.

Reproductive Effects: Not available.

Developmental Effects

Teratogenicity: Not available.

Embryotoxicity: Not available.

Toxicologically Synergistic Materials: Not available.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity: Not available.

Persistence / Degradability: Not available.

Bioaccumulation / Accumulation: Ammonium nitrate (CAS No. 6484-52-2):
log Pow: -3.1 at 25 °C (77 °F)

Mobility in Environment: Not available.

Other Adverse Effects: Not available.

Section 13: DISPOSAL CONSIDERATIONS

Disposal Instructions: Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

Section 14: TRANSPORT INFORMATION

U.S. Department of Transportation (DOT)

Proper Shipping Name: UN1942, AMMONIUM NITRATE, 5.1, PG III

Class: 5.1

UN Number: UN1942

Packing Group: III

Label Code:



Canada Transportation of Dangerous Goods (TDG)

Proper Shipping Name: UN1942, AMMONIUM NITRATE, 5.1, PG III

Class: 5.1

UN Number: UN1942

Packing Group: III

Label Code:



Section 15: REGULATORY INFORMATION

Chemical Inventories

US (TSCA)

The components of this product are in compliance with the chemical notification requirements of TSCA.

Canada (DSL)

The components of this product are in compliance with the chemical notification requirements of the NSN Regulations under CEPA, 1999.

Federal Regulations

United States

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SARA Title III

No components are listed.



**State Regulations
Massachusetts**

US Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

Component	CAS No.	RTK List
Ammonium nitrate	6484-52-2	Listed.
Magnesium nitrate	10377-60-3	Listed.

New Jersey

US New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

Component	CAS No.	RTK List
Ammonium nitrate	6484-52-2	SHHS
Magnesium nitrate	10377-60-3	Listed.

Note: SHHS = Special Health Hazard Substance

Pennsylvania

US Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

Component	CAS No.	RTK List
Ammonium nitrate	6484-52-2	E
Magnesium nitrate	10377-60-3	Listed.

Note: E = Environmental Hazard

California

California Prop 65: This product does not contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Section 16: OTHER INFORMATION

Disclaimer:

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for their own particular use.

Date of Preparation of SDS: December 12, 2018

Version: 1.0

GHS SDS Prepared by: Aegis Regulatory Inc.

Phone: (519) 488-0351

www.aegisreg.com



Section 1: IDENTIFICATION

Product Name: Ammonium Sulphate
Synonyms: Not available.
Product Use: Fertilizer.
Restrictions on Use: Not available.
Manufacturer/Supplier: Plant Products Inc.
50 Hazelton Street
Leamington, Ontario N8H 1B8
Phone Number: 519-326-9037
Toll free number 1-800-387-2449 (English)
Toll free number 1-800-361-9184 (French)
Emergency Phone: 1-800-424-9300 (CHEMTREC, 24 hours)
Date of Preparation of SDS: December 12, 2018

Section 2: HAZARD(S) IDENTIFICATION

GHS INFORMATION

Classification: Not hazardous according to OSHA criteria (29 CFR 1910.1200).
Not hazardous according to WHMIS 2015 criteria.

LABEL ELEMENTS

Hazard None.

Pictogram(s):

Signal Word: None.

Hazard Not applicable.

Statements:

Precautionary Statements

Prevention: Not applicable.

Response: Not applicable.

Storage: Not applicable.

Disposal: Not applicable.

Hazards Not Otherwise Classified: Not applicable.

Ingredients with Unknown Toxicity: None.

This material is not considered hazardous by the OSHA Hazard Communication Standard, (29 CFR 1910.1200).

This material is not considered hazardous by the Hazardous Products Regulations.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient(s)	Common name / Synonyms	CAS No.	% wt./wt.
Sulfuric acid ammonium salt (1:2)	Ammonium sulphate	7783-20-2	95 - 99.5

Impurities / Stabilizing additives: None known.

Section 4: FIRST-AID MEASURES

- Inhalation:** If inhaled: Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.
- Eye Contact:** If in eyes: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.
- Skin Contact:** If on skin: Wash with plenty of water. Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.
- Ingestion:** If swallowed: Call a poison center or doctor if you feel unwell. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.
Acute and delayed symptoms and effects: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.
- General Advice:** In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).
- Note to Physicians:** Symptoms may not appear immediately.

Section 5: FIRE-FIGHTING MEASURES

FLAMMABILITY AND EXPLOSION INFORMATION

Not flammable or combustible by OSHA/WHMIS criteria.

Sensitivity to Mechanical Impact: This material is not sensitive to mechanical impact.

Sensitivity to Static Discharge: This material is not sensitive to static discharge.

MEANS OF EXTINCTION

Suitable Extinguishing Media: Use appropriate extinguishing media for surrounding fire. Move containers from fire area if you can do it without risk.

Unsuitable Extinguishing Media: Not available.

Products of Combustion: Oxides of sulphur. Oxides of nitrogen. Ammonia.

Protection of Firefighters: Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may cause pollution. Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

Section 6: ACCIDENTAL RELEASE MEASURES

Emergency Procedures: Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering.

Personal Precautions: Do not touch or walk through spilled material. Use personal protection recommended in Section 8.

Environmental Precautions: Keep out of drains, sewers, ditches, and waterways.

Methods for Containment: Do not flush to sewer or allow to enter waterways.

Methods for Clean-Up: Avoid generating dust. Sweep up and shovel into suitable containers for disposal.

Other Information: See Section 13 for disposal considerations.

Section 7: HANDLING AND STORAGE

Handling:
Do not swallow. See Section 8 for information on Personal Protective Equipment.

Storage:
Store away from incompatible materials. See Section 10 for information on Incompatible Materials. Keep out of the reach of children.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines Component

Ammonium sulphate [CAS No. 7783-20-2]

ACGIH: 10 mg/m³ (TWA) (Inhalable.); 3 mg/m³ (TWA) (Respirable.); For Particles (Insoluble or Poorly Soluble) Not Otherwise Specified

OSHA: 15 mg/m³ (Total dust) (TWA), 5 mg/m³ (Respirable fraction) (TWA); For Particulates Not Otherwise Regulated (PNOR).

TWA: Time-Weighted Average

Engineering Controls: Not normally required.

PERSONAL PROTECTIVE EQUIPMENT (PPE)



Eye/Face Protection: Wear safety glasses. Indirect vented, dust-tight goggles are required if dust is generated when handling this product. Use equipment for eye protection that meets the standards referenced by CSA Standard CAN/CSA-Z94.3-92 and OSHA regulations in 29 CFR 1910.133 for Personal Protective Equipment.



Hand Protection:	Wear protective gloves. Nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), polyvinylchloride (0.7 mm) gloves are recommended. Consult manufacturer specifications for further information.
Skin and Body Protection:	Wear protective clothing.
Respiratory Protection:	If engineering controls and ventilation are not sufficient to control exposure to below the allowable limits then an appropriate NIOSH/MSHA approved air-purifying respirator that meets the requirements of CSA Standard CAN/CSA-Z94.4-11, with particulate filter, or self-contained breathing apparatus must be used.
General Hygiene Considerations:	Handle according to established industrial hygiene and safety practices. Consult a competent industrial hygienist to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	White to yellowish crystals.
Colour:	White to yellowish.
Odour:	Odourless.
Odour Threshold:	Not available.
Physical State:	Solid.
pH (100 g/L):	~ 5 at 20 °C (68 °F)
Melting Point / Freezing Point:	> 300 °C (572 °F)
Initial Boiling Point:	Not available.
Boiling Range:	Not available.
Flash Point:	Not available.
Evaporation Rate:	Not available.
Flammability (solid, gas):	See Section 5.
Lower Flammability Limit:	Not available.
Upper Flammability Limit:	Not available.
Vapor Pressure:	Not available.
Vapor Density:	Not available.
Relative Density:	Not available.
Solubilities:	Water solubility: 754 to 764 g/L at 20 °C (68 °F).
Partition Coefficient: n-Octanol/Water:	log Pow -5.1 (literature)



Auto-ignition Temperature: Not available.

Decomposition Temperature: > 235 °C (455 °F)

Viscosity: Not available.

Percent Volatile, wt. %: Not available.

VOC content, wt. %: Not available.

Bulk Density: 1000 to 1100 kg/m³

Coefficient of Water/Oil Distribution: Not available.

Section 10: STABILITY AND REACTIVITY

Reactivity: Contact with incompatible materials. Exposure to heat. The substance/product may cake under the influence of moisture.

Chemical Stability: Stable under normal storage conditions.

Possibility of Hazardous Reactions: None known.

Conditions to Avoid: Contact with incompatible materials. Exposure to heat.

Incompatible Materials: Nitrites.

Hazardous Decomposition Products: Not available.

Section 11: TOXICOLOGICAL INFORMATION

EFFECTS OF ACUTE EXPOSURE

Product Toxicity

Oral: Not available.

Dermal: Not available.

Inhalation: Not available.

Component Toxicity

Component	CAS No.	LD ₅₀ oral	LD ₅₀ dermal	LC ₅₀
Ammonium sulphate	7783-20-2	4250 mg/kg (rat)	> 2000 mg/kg (rat)	> 1mg/L (rat)

Likely Routes of Exposure: Eye contact. Skin contact. Inhalation. Ingestion.

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system.

Symptoms (including delayed and immediate effects)

Inhalation: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Eye: May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Skin: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.



Ingestion: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Skin Sensitization: Not available.

Respiratory Sensitization: Not available.

Medical Conditions Aggravated By Exposure: Not available.

EFFECTS OF CHRONIC EXPOSURE (from short and long-term exposure)

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system.

Chronic Effects: Prolonged or repeated contact may dry skin and cause irritation.

Carcinogenicity: This product does not contain any carcinogens or potential carcinogens above reportable thresholds as listed by ACGIH, IARC, OSHA, or NTP.

Mutagenicity: Not available.

Reproductive Effects: Not available.

Developmental Effects

Teratogenicity: Not available.

Embryotoxicity: Not available.

Toxicologically Synergistic Materials: Not available.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity: LC50 (96 h) 53 mg/l, *Oncorhynchus mykiss* (Fish test acute); EC50 (48 h) 121.7 mg/l, *Ceriodaphnia* sp. (Daphnia test acute, static); EC50 (18 d) 2,700 mg/l (growth rate), *Chlorella vulgaris* (other); EC10 (70 d) 3.12 mg/l (semistatic); LC50 (14 d) 201 mg/kg, *Eisenia foetida* (artificial soil).

Persistence / Degradability: Not available.

Bioaccumulation / Accumulation: Not available.

Mobility in Environment: Not available.

Other Adverse Effects: Not available.

Section 13: DISPOSAL CONSIDERATIONS

Disposal Instructions: Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

Section 14: TRANSPORT INFORMATION

U.S. Department of Transportation (DOT)

Proper Shipping Name: Not regulated.
Class: Not applicable.
UN Number: Not applicable.
Packing Group: Not applicable.
Label Code: Not applicable.

Canada Transportation of Dangerous Goods (TDG)

Proper Shipping Name: Not regulated.
Class: Not applicable.
UN Number: Not applicable.
Packing Group: Not applicable.
Label Code: Not applicable.

Section 15: REGULATORY INFORMATION

Chemical Inventories

US (TSCA)

The components of this product are in compliance with the chemical notification requirements of TSCA.

Canada (DSL)

The components of this product are in compliance with the chemical notification requirements of the NSN Regulations under CEPA, 1999.

Federal Regulations

United States

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SARA Title III

No components are listed.

State Regulations

Massachusetts

US Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

Component
Ammonium sulphate

CAS No.
7783-20-2

RTK List
Listed.

New Jersey

US New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

No components are listed.



PLANTPRODUCTS®

SAFETY DATA SHEET

Ammonium Sulphate

Date of Preparation: December 12, 2018

Pennsylvania

US Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

Component

Ammonium sulphate

CAS No.

7783-20-2

RTK List

E

Note: E = Environmental Hazard

California

California Prop 65: This product does not contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Section 16: OTHER INFORMATION

Disclaimer:

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for their own particular use.

Date of Preparation of SDS: December 12, 2018

Version: 1.0

GHS SDS Prepared by: **Aegis Regulatory Inc.**

Phone: (519) 488-0351

www.aegisreg.com

**Section 1: IDENTIFICATION**

Product Name: Blue Tracer Dye

Synonyms: Not available.

Product Use: Specialty Colourant.

Restrictions on Use: Not available.

Manufacturer/Supplier: Plant Products Inc.
50 Hazelton Street
Leamington, Ontario N8H 1B8

Phone Number: 519-326-9037
Toll free number 1-800-387-2449 (English)
Toll free number 1-800-361-9184 (French)

Emergency Phone: 1-800-424-9300 (CHEMTREC, 24 hours)

Date of Preparation of SDS: December 12, 2018

Section 2: HAZARD(S) IDENTIFICATION**GHS INFORMATION**

Classification: Not hazardous according to OSHA criteria (29 CFR 1910.1200).
Not hazardous according to WHMIS 2015 criteria.

LABEL ELEMENTS

Hazard None.

Pictogram(s):

Signal Word: None.

Hazard Not applicable.

Statements:

Precautionary Statements

Prevention: Not applicable.

Response: Not applicable.

Storage: Not applicable.

Disposal: Not applicable.

Hazards Not Otherwise Classified: Not applicable.

Ingredients with Unknown Toxicity: None.

This material is not considered hazardous by the OSHA Hazard Communication Standard, (29 CFR 1910.1200).

This material is not considered hazardous by the Hazardous Products Regulations.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient(s)	Common name / Synonyms	CAS No.	% wt./wt.
---------------	---------------------------	---------	-----------

No hazardous ingredients are present at or above reportable levels.

Section 4: FIRST-AID MEASURES

Inhalation: If inhaled: Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Eye Contact: If in eyes: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Skin Contact: If on skin: Wash with plenty of water. Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

Ingestion: If swallowed: Call a poison center or doctor if you feel unwell. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.
Acute and delayed symptoms and effects: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

General Advice: In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

Note to Physicians: Symptoms may not appear immediately.

Section 5: FIRE-FIGHTING MEASURES

FLAMMABILITY AND EXPLOSION INFORMATION

Not flammable or combustible by OSHA/WHMIS criteria.

Sensitivity to Mechanical Impact: This material is not sensitive to mechanical impact.

Sensitivity to Static Discharge: This material is not sensitive to static discharge.

MEANS OF EXTINCTION

Suitable Extinguishing Media: Use appropriate extinguishing media for surrounding fire. Move containers from fire area if you can do it without risk.

Unsuitable Extinguishing Media: Not available.

Products of Combustion: Oxides of carbon. Oxides of nitrogen.



Protection of Firefighters: Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may cause pollution. Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

Section 6: ACCIDENTAL RELEASE MEASURES

Emergency Procedures: Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering.

Personal Precautions: Do not touch or walk through spilled material. Use personal protection recommended in Section 8.

Environmental Precautions: Keep out of drains, sewers, ditches, and waterways.

Methods for Containment: Do not flush to sewer or allow to enter waterways.

Methods for Clean-Up: Avoid generating dust. Sweep up and shovel into suitable containers for disposal.

Other Information: See Section 13 for disposal considerations.

Section 7: HANDLING AND STORAGE

Handling:
Do not swallow. See Section 8 for information on Personal Protective Equipment.

Storage:
Store away from incompatible materials. See Section 10 for information on Incompatible Materials. Keep out of the reach of children.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines Component

Dust [CAS No. Not applicable]
ACGIH: 10 mg/m³ (TWA) (Inhalable.); 3 mg/m³ (TWA) (Respirable.); For Particles (Insoluble or Poorly Soluble) Not Otherwise Specified
OSHA: 15 mg/m³ (Total dust) (TWA), 5 mg/m³ (Respirable fraction) (TWA); For Particulates Not Otherwise Regulated (PNOR).

TWA: Time-Weighted Average

Engineering Controls: Not normally required.

PERSONAL PROTECTIVE EQUIPMENT (PPE)



Eye/Face Protection: Wear safety glasses. Indirect vented, dust-tight goggles are required if dust is generated when handling this product. Use equipment for eye protection that meets the standards referenced by CSA Standard CAN/CSA-Z94.3-92 and OSHA

regulations in 29 CFR 1910.133 for Personal Protective Equipment.

- Hand Protection:** Wear protective gloves. Consult manufacturer specifications for further information.
- Skin and Body Protection:** Wear protective clothing.
- Respiratory Protection:** If engineering controls and ventilation are not sufficient to control exposure to below the allowable limits then an appropriate NIOSH/MSHA approved air-purifying respirator that meets the requirements of CSA Standard CAN/CSA-Z94.4-11, with particulate filter, or self-contained breathing apparatus must be used.
- General Hygiene Considerations:** Handle according to established industrial hygiene and safety practices. Consult a competent industrial hygienist to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Dark blue powder.
Colour:	Dark blue.
Odour:	Odourless.
Odour Threshold:	Not available.
Physical State:	Solid.
pH:	6.5 to 8.5
Melting Point / Freezing Point:	Not available.
Initial Boiling Point:	Not available.
Boiling Range:	Not available.
Flash Point:	Not available.
Evaporation Rate:	Not available.
Flammability (solid, gas):	See Section 5.
Lower Flammability Limit:	Not available.
Upper Flammability Limit:	Not available.
Vapor Pressure:	Not available.
Vapor Density:	Not available.
Relative Density:	Not available.
Solubilities:	Not available.
Partition Coefficient: n-Octanol/Water:	Not available.



Auto-ignition Temperature: Not available.

Decomposition Temperature: Not available.

Viscosity: Not available.

Percent Volatile, wt. %: Not available.

VOC content, wt. %: Not available.

Density: Not available.

Coefficient of Water/Oil Distribution: Not available.

Section 10: STABILITY AND REACTIVITY

Reactivity: Contact with incompatible materials. Exposure to heat.

Chemical Stability: Stable under normal storage conditions.

Possibility of Hazardous Reactions: None known.

Conditions to Avoid: Contact with incompatible materials. Exposure to heat.

Incompatible Materials: None known.

Hazardous Decomposition Products: Not available.

Section 11: TOXICOLOGICAL INFORMATION

EFFECTS OF ACUTE EXPOSURE

Product Toxicity

Oral: Not available.

Dermal: Not available.

Inhalation: Not available.

Component Toxicity

No LC50 or LD50 listed for the components of this product.

Likely Routes of Exposure: Eye contact. Skin contact. Inhalation. Ingestion.

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system.

Symptoms (including delayed and immediate effects)

Inhalation: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Eye: May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Skin: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

Ingestion: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.



Skin Sensitization: Not available.

Respiratory Sensitization: Not available.

Medical Conditions Aggravated By Exposure: Not available.

EFFECTS OF CHRONIC EXPOSURE (from short and long-term exposure)

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system.

Chronic Effects: Prolonged or repeated contact may dry skin and cause irritation.

Carcinogenicity: This product does not contain any carcinogens or potential carcinogens above reportable thresholds as listed by ACGIH, IARC, OSHA, or NTP.

Mutagenicity: Not available.

Reproductive Effects: Not available.

Developmental Effects

Teratogenicity: Not available.

Embryotoxicity: Not available.

Toxicologically Synergistic Materials: Not available.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity: Not available.

Persistence / Degradability: Not available.

Bioaccumulation / Accumulation: Not available.

Mobility in Environment: Not available.

Other Adverse Effects: Not available.

Section 13: DISPOSAL CONSIDERATIONS

Disposal Instructions: Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

Section 14: TRANSPORT INFORMATION

U.S. Department of Transportation (DOT)

Proper Shipping Name: Not regulated.

Class: Not applicable.

UN Number: Not applicable.

Packing Group: Not applicable.

Label Code: Not applicable.



PLANTPRODUCTS®

SAFETY DATA SHEET

Blue Tracer Dye

Date of Preparation: December 12, 2018

Canada Transportation of Dangerous Goods (TDG)

Proper Shipping Name: Not regulated.

Class: Not applicable.

UN Number: Not applicable.

Packing Group: Not applicable.

Label Code: Not applicable.

Section 15: REGULATORY INFORMATION

Federal Regulations

United States

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SARA Title III

No components are listed.

State Regulations

Massachusetts

US Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

No components are listed.

New Jersey

US New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

No components are listed.

Pennsylvania

US Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

No components are listed.

California

California Prop 65: This product does not contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Section 16: OTHER INFORMATION

Disclaimer:

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for their own particular use.

Date of Preparation of SDS: December 12, 2018

Version: 1.0

GHS SDS Prepared by: **Aegis Regulatory Inc.**

Phone: (519) 488-0351

www.aegisreg.com



Section 1: IDENTIFICATION

Product Name: Borax

Synonyms: Not available.

Product Use: Fertilizer.

Restrictions on Use: Not available.

Manufacturer/Supplier: Plant Products Inc.
50 Hazelton Street
Leamington, Ontario N8H 1B8

Phone Number: 519-326-9037
Toll free number 1-800-387-2449 (English)
Toll free number 1-800-361-9184 (French)

Emergency Phone: 1-800-424-9300 (CHEMTREC, 24 hours)

Date of Preparation of SDS: December 12, 2018

Section 2: HAZARD(S) IDENTIFICATION

GHS INFORMATION

Classification: Reproductive Toxicity, Category 1B

LABEL ELEMENTS

Hazard

Pictogram(s):



Signal Word: Danger

Hazard Statements: May damage fertility or the unborn child.

Precautionary Statements

Prevention: Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves, protective clothing and eye protection.

Response: IF exposed or concerned: Get medical advice/attention.

Storage: Store locked up.

Disposal: Dispose of contents/container in accordance with applicable regional, national and local laws and regulations.

Hazards Not Otherwise Classified: Not applicable.

Ingredients with Unknown Toxicity: 100% of this product mixture consists of ingredient(s) of unknown acute toxicity.



This material is considered hazardous by the OSHA Hazard Communication Standard, (29 CFR 1910.1200).

This material is considered hazardous by the Hazardous Products Regulations.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Ingredient(s)	Common name / Synonyms	CAS No.	% wt./wt.
Boric acid, sodium salt, pentahydrate	Sodium borate, pentahydrate	11130-12-4	99 - 100

Impurities / Stabilizing additives: None known.

Section 4: FIRST-AID MEASURES

- Inhalation:** If inhaled: Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.
- Eye Contact:** If in eyes: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.
- Skin Contact:** If on skin: Wash with plenty of water. Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.
- Ingestion:** If swallowed: Call a poison center or doctor if you feel unwell. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.
Acute and delayed symptoms and effects: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.
- General Advice:** In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).
- Note to Physicians:** Symptoms may not appear immediately.

Section 5: FIRE-FIGHTING MEASURES

FLAMMABILITY AND EXPLOSION INFORMATION
Not flammable or combustible by OSHA/WHMIS criteria.

- Sensitivity to Mechanical Impact:** This material is not sensitive to mechanical impact.
- Sensitivity to Static Discharge:** This material is not sensitive to static discharge.



MEANS OF EXTINCTION

Suitable Extinguishing Media: Use appropriate extinguishing media for surrounding fire. Move containers from fire area if you can do it without risk.

Unsuitable Extinguishing Media: Not available.

Products of Combustion: Boron compounds.

Protection of Firefighters: Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may cause pollution. Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

Section 6: ACCIDENTAL RELEASE MEASURES

Emergency Procedures: Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering.

Personal Precautions: Do not touch or walk through spilled material. Use personal protection recommended in Section 8.

Environmental Precautions: Keep out of drains, sewers, ditches, and waterways.

Methods for Containment: Do not flush to sewer or allow to enter waterways.

Methods for Clean-Up: Sweep up and shovel into suitable containers for disposal.

Other Information: See Section 13 for disposal considerations.

Section 7: HANDLING AND STORAGE

Handling:
Do not swallow. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wash thoroughly after handling. See Section 8 for information on Personal Protective Equipment.

Storage:
Store locked up. Store away from incompatible materials. See Section 10 for information on Incompatible Materials. Keep out of the reach of children.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

**Exposure Guidelines
Component**

Sodium borate, pentahydrate [CAS No. 11130-12-4]
ACGIH: 2 mg/m³ (TWA); 6 mg/m³ (STEL); A4; Inhalable fraction (2004); For Borate compounds, Inorganic
OSHA: 15 mg/m³ (Total dust) (TWA), 5 mg/m³ (Respirable fraction) (TWA); For Particulates Not Otherwise Regulated (PNOR).

TWA: Time-Weighted Average
STEL: Short-Term Exposure Limit

Engineering Controls: Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapour, gas, etc.) below recommended exposure limits.

PERSONAL PROTECTIVE EQUIPMENT (PPE)



- Eye/Face Protection:** Wear safety glasses. Indirect vented, dust-tight goggles are required if dust is generated when handling this product. Use equipment for eye protection that meets the standards referenced by CSA Standard CAN/CSA-Z94.3-92 and OSHA regulations in 29 CFR 1910.133 for Personal Protective Equipment.
- Hand Protection:** Wear protective gloves. Consult manufacturer specifications for further information.
- Skin and Body Protection:** Wear protective clothing.
- Respiratory Protection:** If engineering controls and ventilation are not sufficient to control exposure to below the allowable limits then an appropriate NIOSH/MSHA approved air-purifying respirator that meets the requirements of CSA Standard CAN/CSA-Z94.4-11, with particulate filter, or self-contained breathing apparatus must be used. Supplied air breathing apparatus must be used when oxygen concentrations are low or if airborne concentrations exceed the limits of the air-purifying respirators.
- General Hygiene Considerations:** Handle according to established industrial hygiene and safety practices. Consult a competent industrial hygienist to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	White solid.
Colour:	White.
Odour:	Odourless.
Odour Threshold:	Not available.
Physical State:	Solid.
pH:	Not available.
Melting Point / Freezing Point:	Not available.
Initial Boiling Point:	Not available.
Boiling Range:	Not available.
Flash Point:	Not available.
Evaporation Rate:	Not available.
Flammability (solid, gas):	See Section 5.



Lower Flammability Limit: Not available.
Upper Flammability Limit: Not available.
Vapor Pressure: Not available.
Vapor Density: Not available.
Relative Density: Not available.
Solubilities: Soluble in water.
Partition Coefficient: n-Octanol/Water: Not available.
Auto-ignition Temperature: Not available.
Decomposition Temperature: Not available.
Viscosity: Not available.
Percent Volatile, wt. %: Not available.
VOC content, wt. %: 0
Density: Not available.
Coefficient of Water/Oil Distribution: Not available.

Section 10: STABILITY AND REACTIVITY

Reactivity: Contact with incompatible materials. Exposure to heat.
Chemical Stability: Stable under normal storage conditions.
Possibility of Hazardous Reactions: None known.
Conditions to Avoid: Contact with incompatible materials. Exposure to heat.
Incompatible Materials: Strong reducers. Alkali metals.
Hazardous Decomposition Products: Not available.

Section 11: TOXICOLOGICAL INFORMATION

EFFECTS OF ACUTE EXPOSURE

Product Toxicity

Oral: Not available.
Dermal: Not available.
Inhalation: Not available.

Component Toxicity

Component	CAS No.	LD ₅₀ oral	LD ₅₀ dermal	LC ₅₀
Sodium borate, pentahydrate	11130-12-4	Not available.	Not available.	Not available.



Likely Routes of Exposure: Eye contact. Skin contact. Inhalation. Ingestion.

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system.

Symptoms (including delayed and immediate effects)

Inhalation: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Eye: May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Skin: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

Ingestion: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Skin Sensitization: Not available.

Respiratory Sensitization: Not available.

Medical Conditions Not available.

Aggravated By Exposure:

EFFECTS OF CHRONIC EXPOSURE (from short and long-term exposure)

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system. Lungs.

Chronic Effects: Prolonged or repeated contact may dry skin and cause irritation. Symptoms of chronic poisoning by boron compounds, borism, vary from dry skin and mucous membranes to appearance of a red tongue, patchy alopecia (hair loss), cracked lips, and conjunctivitis. Infants and young children are more susceptible to boric acid poisoning than adults.

Carcinogenicity: Product is not classified as a carcinogen. See Component Carcinogenicity table below for information on individual components.

Component Carcinogenicity

Component	ACGIH	IARC	NTP	OSHA	Prop 65
Sodium borate, pentahydrate	A4	Not listed.	Not listed.	Not listed.	Not listed.

Mutagenicity: Not available.

Reproductive Effects: May damage fertility or the unborn child. Overexposure of male rats to borates causes damage to the testes and reduced sperm production.

Developmental Effects

Teratogenicity: Not available.

Embryotoxicity: Not available.

Toxicologically Synergistic Materials: Not available.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity: Not available.

Persistence / Degradability: Not available.



Bioaccumulation / Accumulation: Not available.

Mobility in Environment: Not available.

Other Adverse Effects: Not available.

Section 13: DISPOSAL CONSIDERATIONS

Disposal Instructions: Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

Section 14: TRANSPORT INFORMATION

U.S. Department of Transportation (DOT)

Proper Shipping Name: Not regulated.

Class: Not applicable.

UN Number: Not applicable.

Packing Group: Not applicable.

Label Code: Not applicable.

Canada Transportation of Dangerous Goods (TDG)

Proper Shipping Name: Not regulated.

Class: Not applicable.

UN Number: Not applicable.

Packing Group: Not applicable.

Label Code: Not applicable.

Section 15: REGULATORY INFORMATION

Chemical Inventories

US (TSCA)

The components of this product are in compliance with the chemical notification requirements of TSCA.

Canada (DSL)

The components of this product are in compliance with the chemical notification requirements of the NSN Regulations under CEPA, 1999.

Federal Regulations

United States

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SARA Title III

No components are listed.



**State Regulations
Massachusetts**

US Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

Component	CAS No.	RTK List
Sodium borate, pentahydrate	11130-12-4	Listed.

New Jersey

US New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

No components are listed.

Pennsylvania

US Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

Component	CAS No.	RTK List
Sodium borate, pentahydrate	11130-12-4	Listed.

California

California Prop 65: This product does not contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Section 16: OTHER INFORMATION

Disclaimer:

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for their own particular use.

Date of Preparation of SDS: December 12, 2018

Version: 1.0

GHS SDS Prepared by: Aegis Regulatory Inc.

Phone: (519) 488-0351

www.aegisreg.com



Section 1: IDENTIFICATION

Product Name: Boric Acid

Synonyms: Not available.

Product Use: Fertilizer.

Restrictions on Use: Not available.

Manufacturer/Supplier: Plant Products Inc.
50 Hazelton Street
Leamington, Ontario N8H 1B8

Phone Number: 519-326-9037
Toll free number 1-800-387-2449 (English)
Toll free number 1-800-361-9184 (French)

Emergency Phone: 1-800-424-9300 (CHEMTREC, 24 hours)

Date of Preparation of SDS: December 12, 2018

Section 2: HAZARD(S) IDENTIFICATION

GHS INFORMATION

Classification: Reproductive Toxicity, Category 1B

LABEL ELEMENTS

Hazard

Pictogram(s):



Signal Word: Danger

Hazard Statements: May damage fertility or the unborn child.

Precautionary Statements

Prevention: Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wear protective gloves, protective clothing and eye protection.

Response: IF exposed or concerned: Get medical advice/attention.

Storage: Store locked up.

Disposal: Dispose of contents/container in accordance with applicable regional, national and local laws and regulations.

Hazards Not Otherwise Classified: Not applicable.

Ingredients with Unknown Toxicity: None.

This material is considered hazardous by the OSHA Hazard Communication Standard, (29 CFR 1910.1200).



This material is considered hazardous by the Hazardous Products Regulations.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Ingredient(s)	Common name / Synonyms	CAS No.	% wt./wt.
Boric acid (H3BO3)	Not available.	10043-35-3	99.75

Impurities / Stabilizing additives: None known.

Section 4: FIRST-AID MEASURES

Inhalation: If inhaled: Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Eye Contact: If in eyes: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Skin Contact: If on skin: Wash with plenty of water. Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching. Boric acid may be absorbed through damaged or abraded skin in harmful amounts.

Ingestion: If swallowed: Call a poison center or doctor if you feel unwell. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.
Acute and delayed symptoms and effects: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea. Boric acid may cause cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood). Boric acid poisoning begins with nausea, vomiting and diarrhea, followed by a skin rash and extensive exfoliation of the skin and mucous membranes.

General Advice: In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

Note to Physicians: Symptoms may not appear immediately.

Section 5: FIRE-FIGHTING MEASURES

FLAMMABILITY AND EXPLOSION INFORMATION

Not flammable or combustible by OSHA/WHMIS criteria.

Sensitivity to Mechanical Impact: This material is not sensitive to mechanical impact.



Sensitivity to Static Discharge: This material is not sensitive to static discharge.

MEANS OF EXTINCTION

Suitable Extinguishing Media: Use appropriate extinguishing media for surrounding fire. Move containers from fire area if you can do it without risk.

Unsuitable Extinguishing Media: Not available.

Products of Combustion: Boron compounds.

Protection of Firefighters: Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may cause pollution. Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

Section 6: ACCIDENTAL RELEASE MEASURES

Emergency Procedures: Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering.

Personal Precautions: Do not touch or walk through spilled material. Use personal protection recommended in Section 8.

Environmental Precautions: Keep out of drains, sewers, ditches, and waterways.

Methods for Containment: Do not flush to sewer or allow to enter waterways.

Methods for Clean-Up: Sweep up and shovel into suitable containers for disposal.

Other Information: See Section 13 for disposal considerations.

Section 7: HANDLING AND STORAGE

Handling:

Do not swallow. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wash thoroughly after handling. See Section 8 for information on Personal Protective Equipment.

Storage:

Store locked up. Store away from incompatible materials. See Section 10 for information on Incompatible Materials. Keep out of the reach of children.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

Component

Boric acid [CAS No. 10043-35-3]

ACGIH: 2 mg/m³ (TWA); 6 mg/m³ (STEL); A4; Inhalable fraction (2004); For Borate compounds, Inorganic

OSHA: 15 mg/m³ (Total dust) (TWA), 5 mg/m³ (Respirable fraction) (TWA); For Particulates Not Otherwise Regulated (PNOR).

TWA: Time-Weighted Average

STEL: Short-Term Exposure Limit

Engineering Controls: Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapour, gas, etc.) below recommended exposure limits.

PERSONAL PROTECTIVE EQUIPMENT (PPE)



- Eye/Face Protection:** Wear safety glasses. Indirect vented, dust-tight goggles are required if dust is generated when handling this product. Use equipment for eye protection that meets the standards referenced by CSA Standard CAN/CSA-Z94.3-92 and OSHA regulations in 29 CFR 1910.133 for Personal Protective Equipment.
- Hand Protection:** Wear protective gloves. Consult manufacturer specifications for further information.
- Skin and Body Protection:** Wear protective clothing.
- Respiratory Protection:** If engineering controls and ventilation are not sufficient to control exposure to below the allowable limits then an appropriate NIOSH/MSHA approved air-purifying respirator that meets the requirements of CSA Standard CAN/CSA-Z94.4-11, with particulate filter, or self-contained breathing apparatus must be used. Supplied air breathing apparatus must be used when oxygen concentrations are low or if airborne concentrations exceed the limits of the air-purifying respirators.
- General Hygiene Considerations:** Handle according to established industrial hygiene and safety practices. Consult a competent industrial hygienist to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

- Appearance:** White, crystalline solid.
- Colour:** White.
- Odour:** Odourless.
- Odour Threshold:** Not available.
- Physical State:** Solid.
- pH (4% solution):** 3.9 at 20 °C (68 °F)
- Melting Point / Freezing Point:** 169 °C (336.2 °F)
- Initial Boiling Point:** Not available.
- Boiling Range:** Not available.
- Flash Point:** Not available.
- Evaporation Rate:** Not available.
- Flammability (solid, gas):** See Section 5.



Lower Flammability Limit: Not available.
Upper Flammability Limit: Not available.
Vapor Pressure: Not available.
Vapor Density: Not available.
Relative Density: 1.44 (Water = 1)
Solubilities: Solubility in water: 4.7% at 20 °C (68 ° F).
Partition Coefficient: n-Octanol/Water: Not available.
Auto-ignition Temperature: Not available.
Decomposition Temperature: Not available.
Viscosity: Not available.
Percent Volatile, wt. %: Not available.
VOC content, wt. %: Not available.
Density: Not available.
Coefficient of Water/Oil Distribution: Not available.

Section 10: STABILITY AND REACTIVITY

Reactivity: Contact with incompatible materials. Exposure to heat.
Chemical Stability: Stable under normal storage conditions.
Possibility of Hazardous Reactions: None known.
Conditions to Avoid: Contact with incompatible materials. Exposure to heat.
Incompatible Materials: Strong reducers. Alkali metals.
Hazardous Decomposition Products: Not available.

Section 11: TOXICOLOGICAL INFORMATION

EFFECTS OF ACUTE EXPOSURE

Product Toxicity

Oral: Not available.
Dermal: Not available.
Inhalation: Not available.

Component Toxicity

Component	CAS No.	LD ₅₀ oral	LD ₅₀ dermal	LC ₅₀
Boric acid	10043-35-3	2660 mg/kg (rat)	Not available.	Not available.

Likely Routes of Exposure: Eye contact. Skin contact. Inhalation. Ingestion.



Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system.

Symptoms (including delayed and immediate effects)

Inhalation: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Eye: May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Skin: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching. Boric acid may be absorbed through damaged or abraded skin in harmful amounts.

Ingestion: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea. Boric acid may cause cyanosis (bluish discoloration of skin due to deficient oxygenation of the blood). Boric acid poisoning begins with nausea, vomiting and diarrhea, followed by a skin rash and extensive exfoliation of the skin and mucous membranes.

Skin Sensitization: Not available.

Respiratory Sensitization: Not available.

Medical Conditions Aggravated By Exposure: Not available.

EFFECTS OF CHRONIC EXPOSURE (from short and long-term exposure)

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system. Lungs.

Chronic Effects: Prolonged or repeated contact may dry skin and cause irritation. Symptoms of chronic poisoning by boron compounds, borism, vary from dry skin and mucous membranes to appearance of a red tongue, patchy alopecia (hair loss), cracked lips, and conjunctivitis.

Carcinogenicity: Product is not classified as a carcinogen. See Component Carcinogenicity table below for information on individual components.

Component Carcinogenicity

Component	ACGIH	IARC	NTP	OSHA	Prop 65
Boric acid	A4	Not listed.	Not listed.	Not listed.	Not listed.

Mutagenicity: Not available.

Reproductive Effects: May damage fertility or the unborn child. Boric acid was found to induce testicular atrophy and effects on spermatogenesis in rats and mice in various studies. Effects occurred at dose-levels (27 mg/kg) without general toxicity. Boric acid has selectively damaged the testes, sperm production and fertility in rats and dogs.

Developmental Effects

Teratogenicity: Developmental effects were observed in mice, rats and rabbits after oral administration of boric acid. However, these effects were considered secondary to maternal toxicity (increased liver and kidney weight).



Embryotoxicity: Not available.

Toxicologically Synergistic Materials: Not available.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity: Not available.

Persistence / Degradability: Not available.

Bioaccumulation / Accumulation: Not available.

Mobility in Environment: Not available.

Other Adverse Effects: Not available.

Section 13: DISPOSAL CONSIDERATIONS

Disposal Instructions: Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

Section 14: TRANSPORT INFORMATION

U.S. Department of Transportation (DOT)

Proper Shipping Name: Not regulated.

Class: Not applicable.

UN Number: Not applicable.

Packing Group: Not applicable.

Label Code: Not applicable.

Canada Transportation of Dangerous Goods (TDG)

Proper Shipping Name: Not regulated.

Class: Not applicable.

UN Number: Not applicable.

Packing Group: Not applicable.

Label Code: Not applicable.

Section 15: REGULATORY INFORMATION

Chemical Inventories

US (TSCA)

The components of this product are in compliance with the chemical notification requirements of TSCA.

Canada (DSL)

The components of this product are in compliance with the chemical notification requirements of the NSN Regulations under CEPA, 1999.



Federal Regulations

United States

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SARA Title III

No components are listed.

State Regulations

Massachusetts

US Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

Component

Boric acid

CAS No.

10043-35-3

RTK List

Listed.

New Jersey

US New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

No components are listed.

Pennsylvania

US Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

Component

Boric acid

CAS No.

10043-35-3

RTK List

Listed.

California

California Prop 65: This product does not contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Section 16: OTHER INFORMATION

Disclaimer:

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for their own particular use.

Date of Preparation of SDS: December 12, 2018

Version: 1.0

GHS SDS Prepared by: Aegis Regulatory Inc.

Phone: (519) 488-0351

www.aegisreg.com

Section 1: IDENTIFICATION

Product Name: Calcium Chloride
Synonyms: Not available.
Product Use: Fertilizer.
Restrictions on Use: Not available.
Manufacturer/Supplier: Plant Products Inc.
50 Hazelton Street
Leamington, Ontario N8H 1B8
Phone Number: 519-326-9037
Toll free number 1-800-387-2449 (English)
Toll free number 1-800-361-9184 (French)
Emergency Phone: 1-800-424-9300 (CHEMTREC, 24 hours)
Date of Preparation of SDS: December 12, 2018

Section 2: HAZARD(S) IDENTIFICATION

GHS INFORMATION

Classification: Acute Toxicity - Oral, Category 4
Eye Irritation, Category 2A

LABEL ELEMENTS

Hazard

Pictogram(s):



Signal Word: Warning

Hazard Statements: Harmful if swallowed.
Causes serious eye irritation.

Precautionary Statements

Prevention: Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wear protective gloves, protective clothing and eye protection.

Response: IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Rinse mouth.
If eye irritation persists: Get medical advice/attention.

Storage: Not applicable.

Disposal: Dispose of contents/container in accordance with applicable regional, national and local laws and regulations.

Hazards Not Otherwise Classified: Not applicable.



Ingredients with Unknown Toxicity: None.

This material is considered hazardous by the OSHA Hazard Communication Standard, (29 CFR 1910.1200).

This material is considered hazardous by the Hazardous Products Regulations.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Ingredient(s)	Common name / Synonyms	CAS No.	% wt./wt.
Calcium chloride (CaCl ₂)	Not available.	10043-52-4	83 - 87
Potassium chloride (KCl)	Not available.	7447-40-7	2 - 3
Sodium chloride (NaCl)	Not available.	7647-14-5	1 - 2

Section 4: FIRST-AID MEASURES

Inhalation: If inhaled: Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Eye Contact: If in eyes: Rinse cautiously with water for at least 20 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Acute and delayed symptoms and effects: Causes serious eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Skin Contact: If on skin: Wash with plenty of water. Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

Ingestion: If swallowed: Rinse mouth. Call a poison center or doctor if you feel unwell. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.
Acute and delayed symptoms and effects: Harmful if swallowed. May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

General Advice: In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

Note to Physicians: Symptoms may not appear immediately. Oral ingestion of Calcium chloride may cause serum acidosis.

Section 5: FIRE-FIGHTING MEASURES



FLAMMABILITY AND EXPLOSION INFORMATION

Not flammable or combustible by OSHA/WHMIS criteria.

Sensitivity to Mechanical Impact: This material is not sensitive to mechanical impact.

Sensitivity to Static Discharge: This material is not sensitive to static discharge.

MEANS OF EXTINCTION

Suitable Extinguishing Media: Small Fire: Dry chemical, CO2, water spray or regular foam.

Large Fire: Water spray, fog or regular foam. Move containers from fire area if you can do it without risk.

Unsuitable Extinguishing Media: Not available.

Products of Combustion: Sodium oxide. Hydrogen chloride. Chlorine. Potassium oxide.

Protection of Firefighters: Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may cause pollution. Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

Section 6: ACCIDENTAL RELEASE MEASURES

Emergency Procedures: Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering.

Personal Precautions: Do not touch or walk through spilled material. Use personal protection recommended in Section 8.

Environmental Precautions: Keep out of drains, sewers, ditches, and waterways.

Methods for Containment: Do not flush to sewer or allow to enter waterways.

Methods for Clean-Up: Sweep up and shovel into suitable containers for disposal.

Other Information: See Section 13 for disposal considerations.

Section 7: HANDLING AND STORAGE

Handling: Do not swallow. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. See Section 8 for information on Personal Protective Equipment.

Storage: Store away from incompatible materials. See Section 10 for information on Incompatible Materials. Keep out of the reach of children.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION



Exposure Guidelines
Component

Calcium chloride [CAS No. 10043-52-4]

ACGIH: 10 mg/m³ (TWA) (Inhalable.); 3 mg/m³ (TWA) (Respirable.); For Particles (Insoluble or Poorly Soluble) Not Otherwise Specified

OSHA: 15 mg/m³ (Total dust) (TWA), 5 mg/m³ (Respirable fraction) (TWA); For Particulates Not Otherwise Regulated (PNOR).

Potassium chloride [CAS No. 7447-40-7]

ACGIH: 10 mg/m³ (TWA) (Inhalable.); 3 mg/m³ (TWA) (Respirable.); For Particles (Insoluble or Poorly Soluble) Not Otherwise Specified

OSHA: 15 mg/m³ (Total dust) (TWA), 5 mg/m³ (Respirable fraction) (TWA); For Particulates Not Otherwise Regulated (PNOR).

Sodium chloride [CAS No. 7647-14-5]

ACGIH: 10 mg/m³ (TWA) (Inhalable.); 3 mg/m³ (TWA) (Respirable.); For Particles (Insoluble or Poorly Soluble) Not Otherwise Specified

OSHA: 15 mg/m³ (Total dust) (TWA), 5 mg/m³ (Respirable fraction) (TWA); For Particulates Not Otherwise Regulated (PNOR).

TWA: Time-Weighted Average

Engineering Controls: Not normally required.

PERSONAL PROTECTIVE EQUIPMENT (PPE)



Eye/Face Protection: Wear chemical safety goggles. Indirect vented, dust-tight goggles are required if dust is generated when handling this product. Ensure that eyewash stations are close to the workstation location. Use equipment for eye protection that meets the standards referenced by CSA Standard CAN/CSA-Z94.3-92 and OSHA regulations in 29 CFR 1910.133 for Personal Protective Equipment.

Hand Protection: Wear protective gloves. Consult manufacturer specifications for further information.

Skin and Body Protection: Wear protective clothing.

Respiratory Protection: If engineering controls and ventilation are not sufficient to control exposure to below the allowable limits then an appropriate NIOSH/MSHA approved air-purifying respirator that meets the requirements of CSA Standard CAN/CSA-Z94.4-11, with particulate filter, or self-contained breathing apparatus must be used.

General Hygiene Considerations: Handle according to established industrial hygiene and safety practices. Consult a competent industrial hygienist to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	White flakes.
Colour:	White.
Odour:	Odourless.
Odour Threshold:	Not available.
Physical State:	Solid.
pH:	Not available.
Melting Point / Freezing Point:	772 °C (1421.6 °F)
Initial Boiling Point:	Not available.
Boiling Range:	Not available.
Flash Point:	Not available.
Evaporation Rate:	Not available.
Flammability (solid, gas):	See Section 5.
Lower Flammability Limit:	Not available.
Upper Flammability Limit:	Not available.
Vapor Pressure:	Not available.
Vapor Density:	Not available.
Relative Density:	Not available.
Solubilities:	Readily soluble in water.
Partition Coefficient: n-Octanol/Water:	Not available.
Auto-ignition Temperature:	Not available.
Decomposition Temperature:	Not available.
Viscosity:	Not available.
Percent Volatile, wt. %:	Not available.
VOC content, wt. %:	Not available.
Density:	51 to 61 lb/ft ³
Coefficient of Water/Oil Distribution:	Not available.

Section 10: STABILITY AND REACTIVITY



Reactivity: Contact with incompatible materials. Exposure to heat.

Chemical Stability: Stable under normal storage conditions.

Possibility of Hazardous Reactions: Calcium chloride may form hydrogen chloride in presence of sulphuric or phosphoric acids.

Conditions to Avoid: Contact with incompatible materials. Exposure to heat.

Incompatible Materials: Strong acids. Strong oxidizers. Metals. Aluminum. Zinc. Borane/boron oxides. Bromine trifluoride. Methyl vinyl ether.

Hazardous Decomposition Products: Hydrogen chloride.

Section 11: TOXICOLOGICAL INFORMATION

EFFECTS OF ACUTE EXPOSURE

Product Toxicity

Oral: Not available.

Dermal: Not available.

Inhalation: Not available.

Component Toxicity

Component	CAS No.	LD ₅₀ oral	LD ₅₀ dermal	LC ₅₀
Calcium chloride	10043-52-4	1000 mg/kg (rat)	Not available.	Not available.
Potassium chloride	7447-40-7	2600 mg/kg (rat)	Not available.	Not available.
Sodium chloride	7647-14-5	3000 mg/kg (rat)	> 10000 mg/kg (rabbit)	> 42000 mg/m ³ (rat); 1H

Likely Routes of Exposure: Eye contact. Skin contact. Inhalation. Ingestion. Skin absorption.

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system.

Symptoms (including delayed and immediate effects)

Inhalation: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Eye: Causes serious eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Skin: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

Ingestion: Harmful if swallowed. May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Skin Sensitization: Not available.

Respiratory Sensitization: Not available.

Medical Conditions Aggravated By Exposure: Not available.

EFFECTS OF CHRONIC EXPOSURE (from short and long-term exposure)



Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system.

Chronic Effects: Prolonged or repeated contact may dry skin and cause irritation.

Carcinogenicity: This product does not contain any carcinogens or potential carcinogens above reportable thresholds as listed by ACGIH, IARC, OSHA, or NTP.

Mutagenicity: Not available.

Reproductive Effects: Not available.

Developmental Effects

Teratogenicity: Not available.

Embryotoxicity: Not available.

Toxicologically Synergistic Materials: Not available.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity: Not available.

Persistence / Degradability: Not available.

Bioaccumulation / Accumulation: Not available.

Mobility in Environment: Not available.

Other Adverse Effects: Not available.

Section 13: DISPOSAL CONSIDERATIONS

Disposal Instructions: Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

Section 14: TRANSPORT INFORMATION

U.S. Department of Transportation (DOT)

Proper Shipping Name: Not regulated.

Class: Not applicable.

UN Number: Not applicable.

Packing Group: Not applicable.

Label Code: Not applicable.

Canada Transportation of Dangerous Goods (TDG)

Proper Shipping Name: Not regulated.

Class: Not applicable.

UN Number: Not applicable.

Packing Group: Not applicable.

Label Code: Not applicable.

Section 15: REGULATORY INFORMATION



PLANTPRODUCTS®

SAFETY DATA SHEET

Calcium Chloride

Date of Preparation: December 12, 2018

Chemical Inventories

US (TSCA)

The components of this product are in compliance with the chemical notification requirements of TSCA.

Canada (DSL)

The components of this product are in compliance with the chemical notification requirements of the NSN Regulations under CEPA, 1999.

Federal Regulations

United States

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SARA Title III

No components are listed.

State Regulations

Massachusetts

US Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

No components are listed.

New Jersey

US New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

No components are listed.

Pennsylvania

US Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

No components are listed.

California

California Prop 65: This product does not contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Section 16: OTHER INFORMATION



PLANTPRODUCTS®

SAFETY DATA SHEET

Calcium Chloride

Date of Preparation: December 12, 2018

Disclaimer:

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for their own particular use.

Date of Preparation of SDS: December 12, 2018

Version: 1.0

GHS SDS Prepared by: **Aegis Regulatory Inc.**

Phone: (519) 488-0351

www.aegisreg.com

Section 1: IDENTIFICATION

Product Name: Calcium Nitrate Liquid
Synonyms: Not available.
Product Use: Fertilizer.
Restrictions on Use: Not available.
Manufacturer/Supplier: Plant Products Inc.
50 Hazelton Street
Leamington, Ontario N8H 1B8
Phone Number: 519-326-9037
Toll free number 1-800-387-2449 (English)
Toll free number 1-800-361-9184 (French)
Emergency Phone: 1-800-424-9300 (CHEMTREC, 24 hours)
Date of Preparation of SDS: December 12, 2018

Section 2: HAZARD(S) IDENTIFICATION

GHS INFORMATION

Classification: Acute Toxicity - Oral, Category 4
Eye Irritation, Category 2A

LABEL ELEMENTS

Hazard

Pictogram(s):



Signal Word: Warning

Hazard Statements: Harmful if swallowed.
Causes serious eye irritation.

Precautionary Statements

Prevention: Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wear protective gloves, protective clothing and eye protection.

Response: IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Rinse mouth.
If eye irritation persists: Get medical advice/attention.

Storage: Not applicable.

Disposal: Dispose of contents/container in accordance with applicable regional, national and local laws and regulations.



Hazards Not Otherwise Classified: Not applicable.

Ingredients with Unknown Toxicity: None.

This material is considered hazardous by the OSHA Hazard Communication Standard, (29 CFR 1910.1200).

This material is considered hazardous by the Hazardous Products Regulations.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient(s)	Common name / Synonyms	CAS No.	% wt./wt.
Nitric acid, calcium salt (2:1)	Calcium nitrate	10124-37-5	66 - 72
Water	Not available.	7732-18-5	28 - 34

Section 4: FIRST-AID MEASURES

- Inhalation:** If inhaled: Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.
- Eye Contact:** If in eyes: Rinse cautiously with water for at least 20 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Acute and delayed symptoms and effects: Causes serious eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.
- Skin Contact:** If on skin: Wash with plenty of water. Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.
- Ingestion:** If swallowed: Rinse mouth. Call a poison center or doctor if you feel unwell. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.
Acute and delayed symptoms and effects: Harmful if swallowed. May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea. Ingestion of high amounts of Calcium nitrate can cause methaemoglobinaemia, blue-gray skin colour, weakness, dizziness, breathing difficulties, red skin, itching.
- General Advice:** In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).
- Note to Physicians:** Symptoms may not appear immediately.

Section 5: FIRE-FIGHTING MEASURES

FLAMMABILITY AND EXPLOSION INFORMATION

High temperatures can evaporate Calcium nitrate to dryness, leaving crystals of calcium nitrate, an oxidizing material. Calcium nitrate does not require atmospheric oxygen and an explosion may occur in the presence of combustible materials.

Sensitivity to Mechanical Impact: This material is not sensitive to mechanical impact.

Sensitivity to Static Discharge: This material is not sensitive to static discharge.

MEANS OF EXTINCTION

Suitable Extinguishing Media: Small Fire: Dry chemical, CO₂, water spray or regular foam.

Large Fire: Water spray, fog or regular foam. Move containers from fire area if you can do it without risk.

Unsuitable Extinguishing Media: Not available.

Products of Combustion: Oxides of nitrogen. Oxygen.

Protection of Firefighters: Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may cause pollution. Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

Section 6: ACCIDENTAL RELEASE MEASURES

Emergency Procedures: Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).

Personal Precautions: Do not touch or walk through spilled material. Use personal protection recommended in Section 8.

Environmental Precautions: Keep out of drains, sewers, ditches, and waterways.

Methods for Containment: Stop leak if without risk. Do not flush to sewer or allow to enter waterways.

Methods for Clean-Up: Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.

Other Information: See Section 13 for disposal considerations.

Section 7: HANDLING AND STORAGE

Handling:

Do not swallow. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. See Section 8 for information on Personal Protective Equipment.

Storage:

Store away from incompatible materials. See Section 10 for information on Incompatible Materials. Keep out of the reach of children.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

**Exposure Guidelines
Component**

Calcium nitrate [CAS No. 10124-37-5]

ACGIH: No TLV established.

OSHA: No PEL established.

Water [CAS No. 7732-18-5]

ACGIH: No TLV established.

OSHA: No PEL established.

PEL: Permissible Exposure Limit

TLV: Threshold Limit Value

Engineering Controls: Not normally required.

PERSONAL PROTECTIVE EQUIPMENT (PPE)



- Eye/Face Protection:** Wear chemical safety goggles. Ensure that eyewash stations are close to the workstation location. Use equipment for eye protection that meets the standards referenced by CSA Standard CAN/CSA-Z94.3-92 and OSHA regulations in 29 CFR 1910.133 for Personal Protective Equipment.
- Hand Protection:** Wear protective gloves. Consult manufacturer specifications for further information.
- Skin and Body Protection:** Wear protective clothing.
- Respiratory Protection:** Not required under normal use conditions.
- General Hygiene Considerations:** Handle according to established industrial hygiene and safety practices. Consult a competent industrial hygienist to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

- Appearance:** Clear, colourless liquid.
- Colour:** Colourless.
- Odour:** Odourless.
- Odour Threshold:** Not available.
- Physical State:** Liquid.
- pH:** 5 to 8
- Melting Point / Freezing** Not available.



Point:

Initial Boiling Point:	100 °C (212 °F)
Boiling Range:	Not available.
Flash Point:	Not available.
Evaporation Rate:	Not available.
Flammability (solid, gas):	Not applicable.
Lower Flammability Limit:	Not available.
Upper Flammability Limit:	Not available.
Vapor Pressure:	Not available.
Vapor Density:	Not available.
Relative Density:	1.45 to 1.47 (Water = 1)
Solubilities:	Soluble in water.
Partition Coefficient: n-Octanol/Water:	Not available.
Auto-ignition Temperature:	Not available.
Decomposition Temperature:	Not available.
Viscosity:	Not available.
Percent Volatile, wt. %:	Not available.
VOC content, wt. %:	Not available.
Density:	Not available.
Coefficient of Water/Oil Distribution:	Not available.

Section 10: STABILITY AND REACTIVITY

Reactivity:	Contact with incompatible materials. Exposure to heat.
Chemical Stability:	Stable under normal storage conditions. Do not allow product to dry.
Possibility of Hazardous Reactions:	None known.
Conditions to Avoid:	Contact with incompatible materials. Exposure to heat. Do not allow product to dry.
Incompatible Materials:	Strong acids. Strong bases. Aluminum. Galvanized iron. Zinc. Ammonia. Combustible materials. Organic materials.
Hazardous Decomposition Products:	Not available.

Section 11: TOXICOLOGICAL INFORMATION

EFFECTS OF ACUTE EXPOSURE

Product Toxicity

Oral: Not available.
Dermal: Not available.
Inhalation: Not available.

Component Toxicity

Component	CAS No.	LD ₅₀ oral	LD ₅₀ dermal	LC ₅₀
Calcium nitrate	10124-37-5	302 mg/kg (rat)	Not available.	Not available.
Water	7732-18-5	> 90 mL/kg (rat)	Not available.	Not available.

Likely Routes of Exposure: Eye contact. Skin contact. Inhalation. Ingestion.

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system.

Symptoms (including delayed and immediate effects)

Inhalation: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Eye: Causes serious eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Skin: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

Ingestion: Harmful if swallowed. May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea. Ingestion of high amounts of Calcium nitrate can cause methaemoglobinaemia, blue-gray skin colour, weakness, dizziness, breathing difficulties, red skin, itching.

Skin Sensitization: Not available.

Respiratory Sensitization: Not available.

Medical Conditions Aggravated By Exposure: Not available.

EFFECTS OF CHRONIC EXPOSURE (from short and long-term exposure)

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system. Lungs.

Chronic Effects: Prolonged or repeated contact may dry skin and cause irritation.

Carcinogenicity: This product does not contain any carcinogens or potential carcinogens above reportable thresholds as listed by ACGIH, IARC, OSHA, or NTP.

Mutagenicity: Not available.

Reproductive Effects: Not available.

Developmental Effects

Teratogenicity: Not available.



Embryotoxicity: Not available.

Toxicologically Synergistic Materials: Not available.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity: Not available.

Persistence / Degradability: Not available.

Bioaccumulation / Accumulation: Not available.

Mobility in Environment: Not available.

Other Adverse Effects: Not available.

Section 13: DISPOSAL CONSIDERATIONS

Disposal Instructions: Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

Section 14: TRANSPORT INFORMATION

U.S. Department of Transportation (DOT)

Proper Shipping Name: Not regulated.

Class: Not applicable.

UN Number: Not applicable.

Packing Group: Not applicable.

Label Code: Not applicable.

Canada Transportation of Dangerous Goods (TDG)

Proper Shipping Name: Not regulated.

Class: Not applicable.

UN Number: Not applicable.

Packing Group: Not applicable.

Label Code: Not applicable.

Section 15: REGULATORY INFORMATION

Chemical Inventories

US (TSCA)

The components of this product are in compliance with the chemical notification requirements of TSCA.

Canada (DSL)

The components of this product are in compliance with the chemical notification requirements of the NSN Regulations under CEPA, 1999.



PLANTPRODUCTS®

SAFETY DATA SHEET

Calcium Nitrate Liquid

Date of Preparation: December 12, 2018

Federal Regulations

United States

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SARA Title III

No components are listed.

State Regulations

Massachusetts

US Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

No components are listed.

New Jersey

US New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

Component

CAS No.

RTK List

Calcium nitrate

10124-37-5

Listed.

Pennsylvania

US Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

No components are listed.

California

California Prop 65: This product does not contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Section 16: OTHER INFORMATION

Disclaimer:

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for their own particular use.

Date of Preparation of SDS: December 12, 2018

Version: 1.0

GHS SDS Prepared by: Aegis Regulatory Inc.

Phone: (519) 488-0351

www.aegisreg.com

Section 1: IDENTIFICATION

Product Name: Calcium Nitrate, Ammonium Free Liquid
Synonyms: Not available.
Product Use: Fertilizer.
Restrictions on Use: Not available.
Manufacturer/Supplier: Plant Products Inc.
50 Hazelton Street
Leamington, Ontario N8H 1B8
Phone Number: 519-326-9037
Toll free number 1-800-387-2449 (English)
Toll free number 1-800-361-9184 (French)
Emergency Phone: 1-800-424-9300 (CHEMTREC, 24 hours)
Date of Preparation of SDS: December 12, 2018

Section 2: HAZARD(S) IDENTIFICATION

GHS INFORMATION

Classification: Acute Toxicity - Oral, Category 4
Eye Irritation, Category 2A

LABEL ELEMENTS

Hazard

Pictogram(s):



Signal Word: Warning

Hazard Statements: Harmful if swallowed.
Causes serious eye irritation.

Precautionary Statements

Prevention: Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wear protective gloves, protective clothing and eye protection.

Response: IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Rinse mouth.
If eye irritation persists: Get medical advice/attention.

Storage: Not applicable.

Disposal: Dispose of contents/container in accordance with applicable regional, national and local laws and regulations.



Hazards Not Otherwise Classified: Not applicable.

Ingredients with Unknown Toxicity: None.

This material is considered hazardous by the OSHA Hazard Communication Standard, (29 CFR 1910.1200).

This material is considered hazardous by the Hazardous Products Regulations.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient(s)	Common name / Synonyms	CAS No.	% wt./wt.
Nitric acid, calcium salt (2:1)	Calcium nitrate	10124-37-5	66 - 72
Water	Not available.	7732-18-5	28 - 34

Section 4: FIRST-AID MEASURES

- Inhalation:** If inhaled: Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.
- Eye Contact:** If in eyes: Rinse cautiously with water for at least 20 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Acute and delayed symptoms and effects: Causes serious eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.
- Skin Contact:** If on skin: Wash with plenty of water. Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.
- Ingestion:** If swallowed: Rinse mouth. Call a poison center or doctor if you feel unwell. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.
Acute and delayed symptoms and effects: Harmful if swallowed. May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea. Ingestion of high amounts of Calcium nitrate can cause methaemoglobinaemia, blue-gray skin colour, weakness, dizziness, breathing difficulties, red skin, itching.
- General Advice:** In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).
- Note to Physicians:** Symptoms may not appear immediately.

Section 5: FIRE-FIGHTING MEASURES

FLAMMABILITY AND EXPLOSION INFORMATION

High temperatures can evaporate Calcium nitrate to dryness, leaving crystals of calcium nitrate, an oxidizing material. Calcium nitrate does not require atmospheric oxygen and an explosion may occur in the presence of combustible materials.

Sensitivity to Mechanical Impact: This material is not sensitive to mechanical impact.

Sensitivity to Static Discharge: This material is not sensitive to static discharge.

MEANS OF EXTINCTION

Suitable Extinguishing Media: Small Fire: Dry chemical, CO₂, water spray or regular foam.

Large Fire: Water spray, fog or regular foam. Move containers from fire area if you can do it without risk.

Unsuitable Extinguishing Media: Not available.

Products of Combustion: Oxides of nitrogen. Oxygen.

Protection of Firefighters: Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may cause pollution. Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

Section 6: ACCIDENTAL RELEASE MEASURES

Emergency Procedures: Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).

Personal Precautions: Do not touch or walk through spilled material. Use personal protection recommended in Section 8.

Environmental Precautions: Keep out of drains, sewers, ditches, and waterways.

Methods for Containment: Stop leak if without risk. Do not flush to sewer or allow to enter waterways.

Methods for Clean-Up: Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.

Other Information: See Section 13 for disposal considerations.

Section 7: HANDLING AND STORAGE

Handling:

Do not swallow. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. See Section 8 for information on Personal Protective Equipment.

Storage:

Store away from incompatible materials. See Section 10 for information on Incompatible Materials. Keep out of the reach of children.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

**Exposure Guidelines
Component**

Calcium nitrate [CAS No. 10124-37-5]

ACGIH: No TLV established.

OSHA: No PEL established.

Water [CAS No. 7732-18-5]

ACGIH: No TLV established.

OSHA: No PEL established.

PEL: Permissible Exposure Limit

TLV: Threshold Limit Value

Engineering Controls: Not normally required.

PERSONAL PROTECTIVE EQUIPMENT (PPE)



- Eye/Face Protection:** Wear chemical safety goggles. Ensure that eyewash stations are close to the workstation location. Use equipment for eye protection that meets the standards referenced by CSA Standard CAN/CSA-Z94.3-92 and OSHA regulations in 29 CFR 1910.133 for Personal Protective Equipment.
- Hand Protection:** Wear protective gloves. Consult manufacturer specifications for further information.
- Skin and Body Protection:** Wear protective clothing.
- Respiratory Protection:** Not required under normal use conditions.
- General Hygiene Considerations:** Handle according to established industrial hygiene and safety practices. Consult a competent industrial hygienist to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

- Appearance:** Clear, colourless liquid.
- Colour:** Colourless.
- Odour:** Odourless.
- Odour Threshold:** Not available.
- Physical State:** Liquid.
- pH:** 5 to 8
- Melting Point / Freezing** Not available.



Point:

Initial Boiling Point:	100 °C (212 °F)
Boiling Range:	Not available.
Flash Point:	Not available.
Evaporation Rate:	Not available.
Flammability (solid, gas):	Not applicable.
Lower Flammability Limit:	Not available.
Upper Flammability Limit:	Not available.
Vapor Pressure:	Not available.
Vapor Density:	Not available.
Relative Density:	1.45 to 1.47 (Water = 1)
Solubilities:	Soluble in water.
Partition Coefficient: n-Octanol/Water:	Not available.
Auto-ignition Temperature:	Not available.
Decomposition Temperature:	Not available.
Viscosity:	Not available.
Percent Volatile, wt. %:	Not available.
VOC content, wt. %:	Not available.
Density:	Not available.
Coefficient of Water/Oil Distribution:	Not available.

Section 10: STABILITY AND REACTIVITY

Reactivity:	Contact with incompatible materials. Exposure to heat.
Chemical Stability:	Stable under normal storage conditions. Do not allow product to dry.
Possibility of Hazardous Reactions:	None known.
Conditions to Avoid:	Contact with incompatible materials. Exposure to heat. Do not allow product to dry.
Incompatible Materials:	Strong acids. Strong bases. Aluminum. Galvanized iron. Zinc. Ammonia. Combustible materials.
Hazardous Decomposition Products:	Not available.



Section 11: TOXICOLOGICAL INFORMATION

EFFECTS OF ACUTE EXPOSURE

Product Toxicity

Oral: Not available.

Dermal: Not available.

Inhalation: Not available.

Component Toxicity

Component	CAS No.	LD ₅₀ oral	LD ₅₀ dermal	LC ₅₀
Calcium nitrate	10124-37-5	302 mg/kg (rat)	Not available.	Not available.
Water	7732-18-5	> 90 mL/kg (rat)	Not available.	Not available.

Likely Routes of Exposure: Eye contact. Skin contact. Inhalation. Ingestion.

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system.

Symptoms (including delayed and immediate effects)

Inhalation: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Eye: Causes serious eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Skin: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

Ingestion: Harmful if swallowed. May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea. Ingestion of high amounts of Calcium nitrate can cause methaemoglobinaemia, blue-gray skin colour, weakness, dizziness, breathing difficulties, red skin, itching.

Skin Sensitization: Not available.

Respiratory Sensitization: Not available.

Medical Conditions Aggravated By Exposure: Not available.

EFFECTS OF CHRONIC EXPOSURE (from short and long-term exposure)

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system. Lungs.

Chronic Effects: Prolonged or repeated contact may dry skin and cause irritation.

Carcinogenicity: This product does not contain any carcinogens or potential carcinogens above reportable thresholds as listed by ACGIH, IARC, OSHA, or NTP.

Mutagenicity: Not available.

Reproductive Effects: Not available.

Developmental Effects

Teratogenicity: Not available.



Embryotoxicity: Not available.

Toxicologically Synergistic Materials: Not available.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity: Not available.

Persistence / Degradability: Not available.

Bioaccumulation / Accumulation: Not available.

Mobility in Environment: Not available.

Other Adverse Effects: Not available.

Section 13: DISPOSAL CONSIDERATIONS

Disposal Instructions: Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

Section 14: TRANSPORT INFORMATION

U.S. Department of Transportation (DOT)

Proper Shipping Name: Not regulated.

Class: Not applicable.

UN Number: Not applicable.

Packing Group: Not applicable.

Label Code: Not applicable.

Canada Transportation of Dangerous Goods (TDG)

Proper Shipping Name: Not regulated.

Class: Not applicable.

UN Number: Not applicable.

Packing Group: Not applicable.

Label Code: Not applicable.

Section 15: REGULATORY INFORMATION

Chemical Inventories

US (TSCA)

The components of this product are in compliance with the chemical notification requirements of TSCA.

Canada (DSL)

The components of this product are in compliance with the chemical notification requirements of the NSN Regulations under CEPA, 1999.



PLANTPRODUCTS®

SAFETY DATA SHEET

Calcium Nitrate, Ammonium Free Liquid

Date of Preparation: December 12, 2018

Federal Regulations

United States

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SARA Title III

No components are listed.

State Regulations

Massachusetts

US Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

No components are listed.

New Jersey

US New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

Component

Calcium nitrate

CAS No.

10124-37-5

RTK List

Listed.

Pennsylvania

US Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

No components are listed.

California

California Prop 65: This product does not contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Section 16: OTHER INFORMATION

Disclaimer:

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for their own particular use.

Date of Preparation of SDS: December 12, 2018

Version: 1.0

GHS SDS Prepared by: Aegis Regulatory Inc.

Phone: (519) 488-0351

www.aegisreg.com

Section 1: IDENTIFICATION

Product Name: Calcium Nitrate, Ammonium Free
Synonyms: Not available.
Product Use: Fertilizer.
Restrictions on Use: Not available.
Manufacturer/Supplier: Plant Products Inc.
50 Hazelton Street
Leamington, Ontario N8H 1B8
Phone Number: 519-326-9037
Toll free number 1-800-387-2449 (English)
Toll free number 1-800-361-9184 (French)
Emergency Phone: 1-800-424-9300 (CHEMTREC, 24 hours)
Date of Preparation of SDS: January 23, 2019

Section 2: HAZARD(S) IDENTIFICATION

GHS INFORMATION

Classification: Acute Toxicity - Oral, Category 4
Eye Damage, Category 1

LABEL ELEMENTS

Hazard

Pictogram(s):



Signal Word: Danger

Hazard Statements: Harmful if swallowed.
Causes serious eye damage.

Precautionary Statements

Prevention: Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wear protective gloves, protective clothing and eye protection.

Response: IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER or doctor.
Rinse mouth.

Storage: Not applicable.

Disposal: Dispose of contents/container in accordance with applicable regional, national and local laws and regulations.

Hazards Not Otherwise Classified: Not applicable.



Ingredients with Unknown Toxicity: None.

This material is considered hazardous by the OSHA Hazard Communication Standard, (29 CFR 1910.1200).

This material is considered hazardous by the Hazardous Products Regulations.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Ingredient(s)	Common name / Synonyms	CAS No.	% wt./wt.
Nitric acid, calcium salt (2:1)	Calcium nitrate	10124-37-5	70 - 80
Nitric acid potassium salt (1:1)	Potassium nitrate	7757-79-1	5 - 7

Actual concentration range(s) withheld as a trade secret.

Section 4: FIRST-AID MEASURES

Inhalation: If inhaled: Call a poison center or doctor if you feel unwell.

Acute and delayed symptoms and effects: May cause respiratory irritation. Signs/symptoms may include burning pain in the nose and throat, coughing, wheezing, shortness of breath and pulmonary edema.

Eye Contact: If in eyes: Rinse cautiously with water for at least 30 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor.

Acute and delayed symptoms and effects: Causes serious eye damage. Signs/symptoms may include cloudy appearance of the cornea, chemical burns, severe pain, tearing, ulcerations, significantly impaired vision or complete loss of vision.

Skin Contact: If on skin: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.

Acute and delayed symptoms and effects: Causes skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

Ingestion: If swallowed: Rinse mouth. Call a POISON CENTER or doctor if you feel unwell. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

Acute and delayed symptoms and effects: Harmful if swallowed. May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea. Ingestion of high amounts of Calcium nitrate can cause methaemoglobinaemia, blue-gray skin colour, weakness, dizziness, breathing difficulties, red skin, itching. The major acute toxic effect from nitrate ingestion is development of methemoglobinemia, a condition where more than 10% of the hemoglobin is transformed into methemoglobin. Methemoglobin reduces the oxygen-carrying capacity of the blood and, in addition, it interferes with the unloading of oxygen. When the conversion exceeds 70% the condition can be fatal.

General Advice: In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

Note to Physicians: Symptoms may not appear immediately.

Section 5: FIRE-FIGHTING MEASURES

FLAMMABILITY AND EXPLOSION INFORMATION

High temperatures can evaporate Calcium nitrate to dryness, leaving crystals of calcium nitrate, an oxidizing material. Calcium nitrate does not require atmospheric oxygen and an explosion may occur in the presence of combustible materials.

Sensitivity to Mechanical Impact: This material is not sensitive to mechanical impact.

Sensitivity to Static Discharge: This material is not sensitive to static discharge.

MEANS OF EXTINCTION

Suitable Extinguishing Media: Small Fire: Dry chemical, CO₂, water spray or regular foam.

Large Fire: Water spray, fog or regular foam. Move containers from fire area if you can do it without risk.

Unsuitable Extinguishing Media: Not available.

Products of Combustion: Oxides of nitrogen. Nitrogen. Potassium nitrite. Potassium oxide. Nitric acid.

Protection of Firefighters: Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may cause pollution. Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

Section 6: ACCIDENTAL RELEASE MEASURES

Emergency Procedures: Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering. ELIMINATE all ignition sources (no smoking, flares, sparks or flames in immediate area).

Personal Precautions: Do not touch or walk through spilled material. Use personal protection recommended in Section 8.

Environmental Precautions: Keep out of drains, sewers, ditches, and waterways.

Methods for Containment: Do not flush to sewer or allow to enter waterways.

Methods for Clean-Up: Sweep up and shovel into suitable containers for disposal.

Other Information: See Section 13 for disposal considerations.

Section 7: HANDLING AND STORAGE

Handling:

Do not swallow. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. See Section 8 for information on Personal Protective Equipment.

Storage:

Store away from incompatible materials. See Section 10 for information on Incompatible Materials. Keep out of the reach of children.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

Component

Calcium nitrate [CAS No. 10124-37-5]

ACGIH: 10 mg/m³ (TWA) (Inhalable.); 3 mg/m³ (TWA) (Respirable.); For Particles (Insoluble or Poorly Soluble) Not Otherwise Specified

OSHA: 15 mg/m³ (Total dust) (TWA), 5 mg/m³ (Respirable fraction) (TWA); For Particulates Not Otherwise Regulated (PNOR).

Potassium nitrate [CAS No. 7757-79-1]

ACGIH: 10 mg/m³ (TWA) (Inhalable.); 3 mg/m³ (TWA) (Respirable.); For Particles (Insoluble or Poorly Soluble) Not Otherwise Specified

OSHA: 15 mg/m³ (Total dust) (TWA), 5 mg/m³ (Respirable fraction) (TWA); For Particulates Not Otherwise Regulated (PNOR).

TWA: Time-Weighted Average

Engineering Controls:

Use explosion-proof electrical, ventilating, and lighting equipment.

PERSONAL PROTECTIVE EQUIPMENT (PPE)



Eye/Face Protection:

Wear chemical safety goggles. Indirect vented, dust-tight goggles are required if dust is generated when handling this product. Ensure that eyewash stations and safety showers are close to the workstation location. Use equipment for eye protection that meets the standards referenced by CSA Standard CAN/CSA-Z94.3-92 and OSHA regulations in 29 CFR 1910.133 for Personal Protective Equipment.

Hand Protection:

Wear protective gloves. Consult manufacturer specifications for further information.

Skin and Body Protection:

Wear protective clothing. Flame resistant clothing that meets the NFPA 2112 and CAN/CGSB 155.20 standards is recommended in areas where material is stored or handled.

Respiratory Protection:

If engineering controls and ventilation are not sufficient to control exposure to below the allowable limits then an appropriate NIOSH/MSHA approved air-purifying respirator that meets the requirements of CSA Standard CAN/CSA-Z94.4-11, with particulate filter, or self-contained breathing apparatus must be used.



General Hygiene Considerations: Handle according to established industrial hygiene and safety practices. Consult a competent industrial hygienist to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	White crystals.
Colour:	White.
Odour:	Odourless.
Odour Threshold:	Not available.
Physical State:	Solid.
pH (110 g/L):	6.3
Melting Point / Freezing Point:	90 to 100 °C (194 to 212 °F)
Initial Boiling Point:	Not available.
Boiling Range:	Not available.
Flash Point:	Not available.
Evaporation Rate:	Not available.
Flammability (solid, gas):	See Section 5.
Lower Flammability Limit:	Not available.
Upper Flammability Limit:	Not available.
Vapor Pressure:	Not available.
Vapor Density:	Not available.
Relative Density:	2.1 (Water = 1) at 20 °C (68 °F)
Solubilities:	Easily soluble in cold water.
Partition Coefficient: n-Octanol/Water:	Not available.
Auto-ignition Temperature:	Not available.
Decomposition Temperature:	Not available.
Viscosity:	Not available.
Percent Volatile, wt. %:	Not available.
VOC content, wt. %:	Not available.
Density:	1100 kg/m ³
Coefficient of Water/Oil Distribution:	Not available.

Section 10: STABILITY AND REACTIVITY

Reactivity: Contact with incompatible materials. Exposure to heat.

Chemical Stability: Stable under normal storage conditions.

Possibility of Hazardous Reactions: None known.

Conditions to Avoid: Contact with incompatible materials. Exposure to heat.

Incompatible Materials: Acids. Bases. Reducers. Combustible materials.

Hazardous Decomposition Products: Not available.

Section 11: TOXICOLOGICAL INFORMATION

EFFECTS OF ACUTE EXPOSURE

Product Toxicity

Oral: Not available.

Dermal: Not available.

Inhalation: Not available.

Component Toxicity

Component	CAS No.	LD ₅₀ oral	LD ₅₀ dermal	LC ₅₀
Calcium nitrate	10124-37-5	302 mg/kg (rat)	Not available.	Not available.
Potassium nitrate	7757-79-1	1901 mg/kg (rabbit)	Not available.	Not available.

Likely Routes of Exposure: Eye contact. Skin contact. Inhalation. Ingestion.

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system. Blood. Kidneys.

Symptoms (including delayed and immediate effects)

Inhalation: May cause respiratory irritation. Signs/symptoms may include burning pain in the nose and throat, coughing, wheezing, shortness of breath and pulmonary edema.

Eye: Causes serious eye damage. Signs/symptoms may include cloudy appearance of the cornea, chemical burns, severe pain, tearing, ulcerations, significantly impaired vision or complete loss of vision.

Skin: Causes skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

Ingestion: Harmful if swallowed. May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea. Ingestion of high amounts of Calcium nitrate can cause methaemoglobinaemia, blue-gray skin colour, weakness, dizziness, breathing difficulties, red skin, itching. The major acute toxic effect from nitrate ingestion is development of methemoglobinemia, a condition where more than 10% of the hemoglobin is transformed into methemoglobin. Methemoglobin reduces the oxygen-carrying capacity of the blood and, in addition, it interferes with the unloading of oxygen. When the conversion exceeds 70% the condition can be fatal.



Skin Sensitization: Not available.

Respiratory Sensitization: Not available.

Medical Conditions Not available.

Aggravated By Exposure:

EFFECTS OF CHRONIC EXPOSURE (from short and long-term exposure)

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system. Lungs. Blood. Kidneys.

Chronic Effects: Prolonged or repeated contact may dry skin and cause irritation.

Carcinogenicity: This product does not contain any carcinogens or potential carcinogens above reportable thresholds as listed by ACGIH, IARC, OSHA, or NTP. The major concern of possible long-term effects of exposure to nitrate is associated with formation of nitroso compounds, many of which are carcinogenic. This formation may take place wherever nitrite and nitrosable compounds are present, but it is favored by acidic conditions or the presence of some bacteria. The gastrointestinal tract (especially the stomach) is regarded as the main formation site, but nitrosation reactions can also take place in an infected urinary bladder.

Mutagenicity: Not available.

Reproductive Effects: Not available.

Developmental Effects

Teratogenicity: Not available.

Embryotoxicity: Not available.

Toxicologically Synergistic Materials: Not available.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity: Not available.

Persistence / Degradability: Not available.

Bioaccumulation / Accumulation: Not available.

Mobility in Environment: Not available.

Other Adverse Effects: Not available.

Section 13: DISPOSAL CONSIDERATIONS

Disposal Instructions: Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

Section 14: TRANSPORT INFORMATION

U.S. Department of Transportation (DOT)

Proper Shipping Name: Not regulated.
Class: Not applicable.
UN Number: Not applicable.
Packing Group: Not applicable.
Label Code: Not applicable.

Canada Transportation of Dangerous Goods (TDG)

Proper Shipping Name: Not regulated.
Class: Not applicable.
UN Number: Not applicable.
Packing Group: Not applicable.
Label Code: Not applicable.

Section 15: REGULATORY INFORMATION

Chemical Inventories

US (TSCA)

The components of this product are in compliance with the chemical notification requirements of TSCA.

Canada (DSL)

The components of this product are in compliance with the chemical notification requirements of the NSN Regulations under CEPA, 1999.

Federal Regulations

United States

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SARA Title III

No components are listed.

State Regulations

Massachusetts

US Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

Component

Potassium nitrate

CAS No.

7757-79-1

RTK List

Listed.



PLANT PRODUCTS®

SAFETY DATA SHEET

Calcium Nitrate, Ammonium Free

Date of Preparation: January 23, 2019

New Jersey

US New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

Component

Calcium nitrate
Potassium nitrate

CAS No.
10124-37-5
7757-79-1

RTK List
Listed.
Listed.

Pennsylvania

US Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

Component

Potassium nitrate

CAS No.
7757-79-1

RTK List
Listed.

California

California Prop 65:



WARNING This product can expose you to a chemical which is known to the State of California to cause cancer and birth defects or other reproductive harm. For more information go to www.P65Warnings.ca.gov.

Section 16: OTHER INFORMATION

Disclaimer:

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for their own particular use.

Date of Preparation of SDS: January 23, 2019

Version: 1.0

GHS SDS Prepared by: **Aegis Regulatory Inc.**
Phone: (519) 488-0351
www.aegisreg.com

Calcium nitrate (Fertilizer Grade)

PP-007

SDS Preparation Date (mm/dd/yyyy): 05/20/2016

Page 1 of 11

SAFETY DATA SHEET

SECTION 1. IDENTIFICATION

Product identifier used on the label

: **Calcium nitrate (Fertilizer Grade)**

Product Code(s) : None assigned.

Recommended use of the chemical and restrictions on use

: Fertilizer, horticultural chemical
Use pattern: professional use
Recommended restrictions: None known.

Chemical family : Calcium, Ammonium nitrate Fertilizer

Name, address, and telephone number of the manufacturer:

Plant Products Inc.

50 Hazelton Street
PO BOX 33
Leamington, Ontario, Canada
N8H 3W1

Name, address, and telephone number of the supplier:

Plant Products Inc.

50 Hazelton Street
PO BOX 33
Leamington, Ontario, Canada
N8H 3W1

Supplier's Telephone # : 519-326-9037 (Monday - Friday, 8:00 am - 5:00 pm, Eastern Standard Time)

24 Hr. Emergency Tel # : CANUTEC: 1-888-CANUTEC (1-888-226-8832)

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

Appearance: Solid -white, prills.
Odour - Odourless.

Most important hazards: This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Hazard classification:

Acute toxicity, Oral - Category 4
Eye damage/irritation - Category 1

Label elements

Hazard pictogram(s)



Signal Word

DANGER!

Hazard statement(s)

Harmful if swallowed.
Causes serious eye damage.

Calcium nitrate (Fertilizer Grade)

PP-007

SDS Preparation Date (mm/dd/yyyy): 05/20/2016

Page 2 of 11

SAFETY DATA SHEET

Precautionary statement(s)

Wear eye/face protection.
Do not eat, drink or smoke when using this product.
Wash hands thoroughly after handling.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTRE or doctor/physician.
IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell.
Rinse mouth.

Dispose of contents/container in accordance with local/regional/national/international regulations.

Other hazards

No OSHA defined hazard classes.

Other hazards which do not result in classification:

Toxic fumes, gases or vapours may evolve on burning.
Direct skin contact may cause slight or mild, transient irritation.
Dusts may cause severe irritation or corrosive damage to the respiratory system.
Ingestion may cause severe burns to the mucous membranes of the digestive tract.
Prolonged inhalation may cause susceptibility to respiratory illness from continued irritation.

Ecological information:

Not expected to be harmful to aquatic organisms. Avoid release to the environment.
See Section 12 for more environmental information.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance

<u>Chemical name</u>	<u>Common name and synonyms</u>	<u>CAS #</u>	<u>Concentration (% by weight)</u>
Nitric acid, ammonium calcium salt	Calcium Ammonium nitrate; CAN	15245-12-2	100%

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

- Ingestion* : Rinse mouth thoroughly. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. If vomiting occurs spontaneously, keep victim's head lowered (forward) to reduce the risk of aspiration. Get medical attention immediately.
- Inhalation* : Remove exposed person to fresh air immediately. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. Get medical attention immediately.
- Skin contact* : Wash off with soap and plenty of water. Remove and wash contaminated clothing before re-use. Get medical attention if irritation develops and persists.
- Eye contact* : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If contact lens is present, DO NOT delay flushing or attempt to remove the lens until flushing is done. Get medical attention immediately.

Calcium nitrate (Fertilizer Grade)

PP-007

SDS Preparation Date (mm/dd/yyyy): 05/20/2016

Page 3 of 11

SAFETY DATA SHEET

Most important symptoms and effects, both acute and delayed

- : Harmful if swallowed. Ingestion may cause severe burns to the mucous membranes of the digestive tract. Symptoms may include abdominal pain, vomiting, burns, perforations and bleeding.
Causes serious eye damage. Symptoms may include a burning sensation, pain, watering, and/or changes in vision (blurred vision). Permanent eye damage including blindness could result.
- : Direct skin contact may cause slight or mild, transient irritation. Contact with dust can cause mechanical irritation or drying of the skin.
- : Dusts may cause severe irritation or corrosive damage to the respiratory system. Symptoms include: Cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain. Symptoms may be delayed. Prolonged inhalation may cause susceptibility to respiratory illness from continued irritation.

Indication of any immediate medical attention and special treatment needed

- : Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

- : Water spray, fog (flooding amounts).

Unsuitable extinguishing media

- : Do not use a solid water stream as it may scatter and spread the fire.
Do not use carbon dioxide or other smothering agents, as they may be ineffective.

Special hazards arising from the substance or mixture / Conditions of flammability

- : Not considered flammable. Toxic fumes, gases or vapours may evolve on burning. May decompose to form toxic/corrosive gasses if exposed to high heat. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure.

Flammability classification (OSHA 29 CFR 1910.106)

- : Not flammable.

Hazardous combustion products

- : Nitrogen oxides (NOx); Calcium oxides; Ammonia; and other irritating fumes and smoke.

Special protective equipment and precautions for firefighters

Protective equipment for fire-fighters

- : Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. Firefighters should wear an approved full-face, self-contained breathing apparatus (SCBA) and impervious clothing.

Special fire-fighting procedures

- : Move containers from fire area if safe to do so. Contaminated surfaces may be slippery. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses. Dike for water control.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

- : Restrict access to area until completion of clean-up. Keep people away from and upwind of spill/leak. Contaminated surfaces may be slippery. All persons dealing with clean-up should wear the appropriate protective equipment including self-contained breathing apparatus.
Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Do not allow material to contaminate ground water system. Prevent product from entering drains, sewers, waterways and soil.

Calcium nitrate (Fertilizer Grade)

PP-007

SDS Preparation Date (mm/dd/yyyy): 05/20/2016

Page 4 of 11

SAFETY DATA SHEET

Methods and material for containment and cleaning up

- : Ventilate the area. Remove all sources of ignition. Prevent further leakage or spillage if safe to do so. Do not touch or walk through spilled material. Material can create slippery conditions. Avoid dust formation. Vacuum or sweep up spilled material using a method that does not generate airborne dust. Place in clean, dry and labeled containers. Clean surface thoroughly to remove residual contamination. After cleaning, flush away traces with water. Do not flush into surface water or sanitary sewer system. Refer to Section 13 for disposal of contaminated material. Contact the proper local authorities.

Special spill response procedures

- : For 24-hour emergency assistance, call: 1-613-996-6666 (CANUTEC). If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8802).

EPA/CERCLA Reportable quantity (RQ):
None known.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

- : Avoid dust formation. Use in a well-ventilated area. Keep container tightly closed when not in use. Wear appropriate protective equipment. Avoid breathing dust. Material can create slippery conditions. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. Do not ingest. Wash thoroughly after handling. Keep away from incompatibles. Keep away from extreme heat and flame. Empty containers retain residue and can be dangerous.

- Conditions for safe storage** : Store in a cool, dry, well ventilated area. Store away from incompatible materials. Keep away from heat and sources of ignition. Keep away from direct sunlight. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Do not store in open or unlabelled containers. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. No smoking. Inspect periodically for damage or leaks. Have appropriate fire extinguishers and spill clean-up equipment in or near storage area.

- Incompatible materials** : Acids; Bases; Reducing agents.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits:

<u>Chemical Name</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>	
	<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>
Nitric acid, ammonium calcium salt	N/Av	N/Av	N/Av	N/Av

Exposure controls

Ventilation and engineering measures

- : Use only in well-ventilated areas. Apply technical measures to comply with the occupational exposure limits. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. In case of insufficient ventilation wear suitable respiratory equipment.

Calcium nitrate (Fertilizer Grade)

PP-007

SDS Preparation Date (mm/dd/yyyy): 05/20/2016

Page 5 of 11

SAFETY DATA SHEET

- Respiratory protection** : If airborne concentrations are above the permissible exposure limit or are not known, use NIOSH-approved respirators. Use a NIOSH approved dust respirator if dust levels exceed exposure limits. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134) or CSA Z94.4-02. Advice should be sought from respiratory protection specialists.
- Skin protection** : Wear protective gloves. The suitability for a specific workplace should be discussed with the producers of the protective gloves. Depending on conditions of use, safety shoes and additional protective clothing may also be necessary.
- Eye / face protection** : Chemical goggles must be worn to prevent dusts from entering the eyes. A full face shield may also be necessary.
- Other protective equipment** : Emergency showers and eyewash facilities should be nearby. Other equipment may be required depending on workplace standards.
- General hygiene considerations** : Avoid breathing dust. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. Wash hands thoroughly after using this product, and before eating, drinking or smoking. Remove and wash contaminated clothing before re-use. Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance** : Solid - white, prills
- Odour** : Odourless.
- Odour threshold** : N/Ap
- pH** : 5-7 (110 g/l)
- Melting/Freezing point** : 752°F / 400°C Melting point
- Initial boiling point and boiling range** : Decomposes on heating.
- Flash point** : N/Ap
- Flashpoint (Method)** : N/Ap
- Evaporation rate (BuAe = 1)** : N/Ap
- Flammability (solid, gas)** : Not considered flammable.
- Lower flammable limit (% by vol.)** : N/Ap
- Upper flammable limit (% by vol.)** : N/Ap
- Oxidizing properties** : None known.
- Explosive properties** : Not explosive
- Vapour pressure** : N/Ap
- Vapour density** : N/Ap
- Relative density / Specific gravity** : N/Av
- Solubility in water** : Soluble (>100 g/l)
- Other solubility(ies)** : N/Av
- Partition coefficient: n-octanol/water or Coefficient of water/oil distribution** : N/Ap
- Auto-ignition temperature** : N/Ap
- Decomposition temperature** : N/Av
- Viscosity** : N/Ap
- Volatiles (% by weight)** : N/Av
- Volatile organic Compounds (VOC's)** : N/Av

Calcium nitrate (Fertilizer Grade)

PP-007

SDS Preparation Date (mm/dd/yyyy): 05/20/2016

Page 6 of 11

SAFETY DATA SHEET

Absolute pressure of container

: N/Ap

Flame projection length

: N/Ap

Other physical/chemical comments

: Not sensitive to static discharge or mechanical impact under normal conditions of use and handling.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not normally reactive.

Chemical stability : Stable under normal conditions. Decomposes on heating.

Possibility of hazardous reactions

: Hazardous polymerization does not occur. No dangerous reaction known under conditions of normal use.

Conditions to avoid

: Avoid dust formation. Avoid contact with incompatible materials. Do not use in areas without adequate ventilation. Keep away from extreme heat and flame.

Incompatible materials

: Acids; Bases; Reducing agents.

Hazardous decomposition products

: Nitrogen oxides (NOx); Calcium oxides; Ammonia.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

Routes of entry inhalation : YES

Routes of entry skin & eye : YES

Routes of entry Ingestion : YES

Routes of exposure skin absorption

: NO

Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation

: Dusts may cause severe irritation or corrosive damage to the respiratory system
Symptoms include: Cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Sign and symptoms ingestion

: Ingestion may cause severe burns to the mucous membranes of the digestive tract.
Symptoms may include severe abdominal pain, vomiting, burns and bleeding.

Sign and symptoms skin

: Direct skin contact may cause slight or mild, transient irritation. Contact with dust can cause mechanical irritation or drying of the skin.

Sign and symptoms eyes

: Causes serious eye damage. Symptoms may include a burning sensation, pain, watering, and/or changes in vision (blurred vision). Permanent eye damage including blindness could result.

Potential Chronic Health Effects

: Prolonged inhalation may cause susceptibility to respiratory illness from continued irritation.

Mutagenicity

: Not expected to be mutagenic in humans.

Carcinogenicity

: No component of this product present at levels greater than, or equal to, 0.1% is identified as a carcinogen or potential carcinogen by ACGIH, IARC, OSHA, or NTP.

Reproductive effects & Teratogenicity

: Not expected to cause reproductive effects.

Calcium nitrate (Fertilizer Grade)

PP-007

SDS Preparation Date (mm/dd/yyyy): 05/20/2016

Page 7 of 11

SAFETY DATA SHEET

- Sensitization to material** : Not expected to be a skin or respiratory sensitizer.
- Specific target organ effects** : Not classified as a specific target organ toxicity-single exposure.
Not classified as specific target organ toxicity-repeated exposure.
- Medical conditions aggravated by overexposure** : Pre-existing skin, eye and respiratory disorders.
- Synergistic materials** : No information available.
- Toxicological data** : This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015). Classification:

Acute toxicity (Oral) - Category 4. Harmful if swallowed.

See below for toxicological data on the substance.

<u>Chemical name</u>	<u>LC₅₀(4hr)</u> <u>inh, rat</u>	<u>LD₅₀</u>	
		<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
Nitric acid, ammonium calcium salt	N/Av	>300 - <2000 mg/kg	>2000 mg/kg (rat) (No mortality)

Other important toxicological hazards

- : None reported by the manufacturer.

SECTION 12. ECOLOGICAL INFORMATION

- Ecotoxicity** : Not expected to be harmful to aquatic organisms. The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters. See the following tables for the substance's ecotoxicity data.

Ecotoxicity data:

<u>Ingredients</u>	<u>CAS No</u>	<u>Toxicity to Fish</u>		
		<u>LC50 / 96h</u>	<u>NOEC / 21 day</u>	<u>M Factor</u>
Nitric acid, ammonium calcium salt	15245-12-2	>100 mg/L Rainbow trout Read-across (Analogy)	157 mg/L (32 days) (Read-across)	None.

<u>Ingredients</u>	<u>CAS No</u>	<u>Toxicity to Daphnia</u>		
		<u>EC50 / 48h</u>	<u>NOEC / 21 day</u>	<u>M Factor</u>
Nitric acid, ammonium calcium salt	15245-12-2	>100 mg/L Daphnia magna (Water flea)	N/Av	None.

<u>Ingredients</u>	<u>CAS No</u>	<u>Toxicity to Algae</u>		
		<u>EC50 / 96h or 72h</u>	<u>NOEC / 96h or 72h</u>	<u>M Factor</u>
Nitric acid, ammonium calcium salt	15245-12-2	>100 mg/L/72hr Green algae	100 mg/L/72hr	None.

Persistence and degradability

- : Biodegradation is not applicable to inorganic substances.

Bioaccumulation potential

- : Not expected to bioaccumulate.
See the following data for ingredient information.

Calcium nitrate (Fertilizer Grade)

PP-007

SDS Preparation Date (mm/dd/yyyy): 05/20/2016

Page 8 of 11

SAFETY DATA SHEET

<u>Components</u>	<u>Partition coefficient n-octanol/water (log Kow)</u>	<u>Bioconcentration factor (BCF)</u>
Nitric acid, ammonium calcium salt (CAS 15245-12-2)	N/Ap	Not expected to bioaccumulate.

Mobility in soil : There is no data available for this product.

Other Adverse Environmental effects

: No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.


SECTION 13. DISPOSAL CONSIDERATIONS

Handling for Disposal : Handle in accordance with good industrial hygiene and safety practice. Since emptied containers may retain product residue, follow label warnings even after container is emptied. Refer to protective measures listed in sections 7 and 8.

Methods of Disposal : Dispose in accordance with all applicable federal, state, provincial and local regulations.

RCRA : If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

SECTION 14. TRANSPORTATION INFORMATION

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
49CFR/DOT	None.	Not regulated.	not regulated	none	
49CFR/DOT Additional information	None.				
TDG	None.	Not regulated.	not regulated	none	
TDG Additional information	None.				

Special precautions for user : Keep away from extreme heat and flame.
Appropriate advice on safety must accompany the package.

Environmental hazards : This substance does not meet the criteria for an environmentally hazardous substance according to the IMDG Code. See ECOLOGICAL INFORMATION, Section 12.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

: This information is not available.

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

Components listed below are present on the following U.S. Federal chemical lists:



Calcium nitrate (Fertilizer Grade)

PP-007

SDS Preparation Date (mm/dd/yyyy): 05/20/2016

Page 9 of 11

SAFETY DATA SHEET

Ingredients	CAS #	TSCA Inventory	CERCLA Reportable Quantity(RQ) (40 CFR 117.302):	SARA TITLE III: Sec. 302, Extremely Hazardous Substance, 40 CFR 355:	SARA TITLE III: Sec. 313, 40 CFR 372, Specific Toxic Chemical	
					Toxic Chemical	de minimus Concentration
Nitric acid, ammonium calcium salt	15245-12-2	Yes	N/Ap	N/Ap	No	N/Ap

SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes: Immediate (Acute) health hazard. Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds for the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

US State Right to Know Laws:

The following chemicals are specifically listed by individual States:

Ingredients	CAS #	California Proposition 65		State "Right to Know" Lists					
		Listed	Type of Toxicity	CA	MA	MN	NJ	PA	RI
Nitric acid, ammonium calcium salt	15245-12-2	No	N/Ap	No	No	No	No	No	No

Canadian Information:

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

WHMIS information: Refer to Section 2 for a WHMIS Classification for this product.

International Information:

Components listed below are present on the following International Inventory list:

Ingredients	CAS #	European EINECS	Australia AICS	Philippines PICCS	Japan ENCS	Korea KECI/KECL	China IECSC	NewZealand IOC
Nitric acid, ammonium calcium salt	15245-12-2	239-289-5	Not listed	Not listed	Not listed	KE-25913	Not listed	May be used as a component in a product covered by a group standard, but is not approved for use as a chemical in its own right.

SECTION 16. OTHER INFORMATION

Legend

- : ACGIH: American Conference of Governmental Industrial Hygienists
- AICS: Australian Inventory of Chemical Substances
- CA: California
- CAS: Chemical Abstract Services
- CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
- CFR: Code of Federal Regulations

Calcium nitrate (Fertilizer Grade)

PP-007

SDS Preparation Date (mm/dd/yyyy): 05/20/2016

Page 10 of 11

SAFETY DATA SHEET

CSA: Canadian Standards Association
EC50: Effective Concentration 50%.
EINECS: European Inventory of Existing Commercial chemical Substances
ENCS: Existing and New Chemical Substances
EPA: Environmental Protection Agency
IECSC: Inventory of Existing Chemical Substances
Inh: Inhalation
IOC: Inventory of Chemicals
KECI: Korean Existing Chemicals Inventory
KECL: Korean Existing Chemicals List
LC: Lethal Concentration
LD: Lethal Dose
MA: Massachusetts
MN: Minnesota
N/Ap: Not Applicable
N/Av: Not Available
NIOSH: National Institute of Occupational Safety and Health
NJ: New Jersey
NOEC: No observable effect concentration
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
PA: Pennsylvania
PEL: Permissible exposure limit
PICCS: Philippine Inventory of Chemicals and Chemical Substances
RCRA: Resource Conservation and Recovery Act
RI: Rhode Island
SARA: Superfund Amendments and Reauthorization Act
SDS: Safety Data Sheet / MSDS: Material Safety Data Sheet
STEL: Short Term Exposure Limit
TDG: Canadian Transportation of Dangerous Goods Act & Regulations
TLV: Threshold Limit Values
TSCA: Toxic Substance Control Act
TWA: Time Weighted Average
WHMIS: Workplace Hazardous Materials Identification System

- References** :
1. ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices (2015)
 2. Canadian Centre for Occupational Health and Safety, CCIInfoWeb Databases, 2016 (Chempendium, RTECs, HSDB, INCHEM).
 3. IARC Monographs. Overall Evaluation of Carcinogenicity
 4. OECD - The Global Portal to Information on Chemical Substances - eChemPortal, 2016.
 5. US EPA Title III List of Lists: March2015 Version
 6. California Proposition 65 List: December4, 2015 Version
 7. European Chemicals Agency, Classification Legislation, 2015

Preparation Date (mm/dd/yyyy)

: 05/20/2016

Other special considerations for handling

: Provide adequate information, instruction and training for operators.

Calcium nitrate (Fertilizer Grade)

PP-007

SDS Preparation Date (mm/dd/yyyy): 05/20/2016

Page 11 of 11

SAFETY DATA SHEET

<p><u>Prepared for:</u> Direct all enquiries to: Plant Products, Inc. 50 Hazelton Street PO BOX 33 Leamington, ON, Canada N8H 3W1</p>	 PLANTPRODUCTS®
<p><u>Prepared by:</u> ICC The Compliance Center Inc. Telephone: (888) 442-9628 (U.S.): (888) 977-4834 (Canada) http://www.thecompliancecenter.com</p>	 icc ComplianceCenter

DISCLAIMER

This Safety Data Sheet was prepared by ICC The Compliance Center Inc. using information provided by / obtained from Plant Products, Inc. and CCOHS' Web Information Service. The information in the Safety Data Sheet is offered for your consideration and guidance when exposed to this product. ICC The Compliance Center Inc. and Plant Products, Inc. expressly disclaim all expressed or implied warranties and assume no responsibilities for the accuracy or completeness of the data contained herein. The data in this SDS does not apply to use with any other product or in any other process.

This Safety Data Sheet may not be changed, or altered in any way without the expressed knowledge and permission of ICC The Compliance Center Inc. and Plant Products, Inc.

END OF DOCUMENT

**Section 1: IDENTIFICATION**

Product Name: Copper Chelate

Synonyms: Not available.

Product Use: Fertilizer.

Restrictions on Use: Not available.

Manufacturer/Supplier: Plant Products Inc.
50 Hazelton Street
Leamington, Ontario N8H 1B8

Phone Number: 519-326-9037
Toll free number 1-800-387-2449 (English)
Toll free number 1-800-361-9184 (French)

Emergency Phone: 1-800-424-9300 (CHEMTREC, 24 hours)

Date of Preparation of SDS: December 12, 2018

Section 2: HAZARD(S) IDENTIFICATION**GHS INFORMATION**

Classification: Acute Toxicity - Oral, Category 4
Eye Irritation, Category 2A
Combustible Dust, Category 1

LABEL ELEMENTS**Hazard****Pictogram(s):****Signal Word:** Warning

Hazard Statements: Harmful if swallowed.
Causes serious eye irritation.
May form combustible dust concentrations in air.

Precautionary Statements

Prevention: Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wear protective gloves, protective clothing and eye protection.

Response: IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Rinse mouth.
If eye irritation persists: Get medical advice/attention.

Storage: Not applicable.



Disposal: Dispose of contents/container in accordance with applicable regional, national and local laws and regulations.

Hazards Not Otherwise Classified: Not applicable.

Ingredients with Unknown Toxicity: None.

This material is considered hazardous by the OSHA Hazard Communication Standard, (29 CFR 1910.1200).

This material is considered hazardous by the Hazardous Products Regulations.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Ingredient(s)	Common name / Synonyms	CAS No.	% wt./wt.
Cuprate(2-), [[N,N'-1,2-ethanediy]bis[N-[(carboxy-.kappa.O)methyl]glycinato-.kappa.N,.kappa.O]](4-)]-, sodium (1:2), (OC-6-21)-	Copper versenate	14025-15-1	90 - 100

Section 4: FIRST-AID MEASURES

- Inhalation:** If inhaled: Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.
- Eye Contact:** If in eyes: Rinse cautiously with water for at least 20 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Acute and delayed symptoms and effects: Causes serious eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.
- Skin Contact:** If on skin: Wash with plenty of water. Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.
- Ingestion:** If swallowed: Rinse mouth. Call a poison center or doctor if you feel unwell. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.
Acute and delayed symptoms and effects: Harmful if swallowed. May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.
- General Advice:** In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).



Note to Physicians: Symptoms may not appear immediately.

Section 5: FIRE-FIGHTING MEASURES

FLAMMABILITY AND EXPLOSION INFORMATION

Not flammable or combustible by OSHA/WHMIS criteria.

Sensitivity to Mechanical Impact: This material is not sensitive to mechanical impact.

Sensitivity to Static Discharge: In the form of dust, this material is sensitive to static discharge and may form explosive mixtures with air.

MEANS OF EXTINCTION

Suitable Extinguishing Media: Small Fire: Dry chemical, CO2, water spray or regular foam.

Large Fire: Water spray, fog or regular foam. Move containers from fire area if you can do it without risk.

Unsuitable Extinguishing Media: Not available.

Products of Combustion: Oxides of carbon. Oxides of nitrogen. Oxides of copper.

Protection of Firefighters: Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may cause pollution. Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

Section 6: ACCIDENTAL RELEASE MEASURES

Emergency Procedures: Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering.

Personal Precautions: Do not touch or walk through spilled material. Use personal protection recommended in Section 8.

Environmental Precautions: Keep out of drains, sewers, ditches, and waterways.

Methods for Containment: Do not flush to sewer or allow to enter waterways.

Methods for Clean-Up: Use explosion-proof equipment. Dust can be a fire or explosion hazard. Sweep up and shovel into suitable containers for disposal. Cleaning methods (e.g. compressed air) which can generate potentially combustible dust clouds should not be used.

Other Information: See Section 13 for disposal considerations.

Section 7: HANDLING AND STORAGE

Handling:

Do not swallow. Minimize dust generation and accumulation. Airborne dusts are potentially explosive. Avoid significant deposits of material, especially on horizontal surfaces, which may become airborne and form combustible dust clouds and may contribute to secondary explosions. Handling and processing operations should be conducted in accordance with 'best practices' (e.g. NFPA-654). Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. To avoid fire or explosion, ground and bond container and receiving equipment (and ground personnel) before transferring material. Wash



thoroughly after handling. Do not eat, drink or smoke when using this product. See Section 8 for information on Personal Protective Equipment.

Storage:

Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Store away from incompatible materials. See Section 10 for information on Incompatible Materials. Keep out of the reach of children.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

Component

Copper versenate [CAS No. 14025-15-1]

ACGIH: 10 mg/m³ (TWA) (Inhalable.); 3 mg/m³ (TWA) (Respirable.); For Particles (Insoluble or Poorly Soluble) Not Otherwise Specified

OSHA: 15 mg/m³ (Total dust) (TWA), 5 mg/m³ (Respirable fraction) (TWA); For Particulates Not Otherwise Regulated (PNOR).

TWA: Time-Weighted Average

Engineering Controls:

It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen-deficient environment. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). Use explosion-proof electrical, ventilating, and lighting equipment.

PERSONAL PROTECTIVE EQUIPMENT (PPE)



Eye/Face Protection:

Wear chemical safety goggles. Indirect vented, dust-tight goggles are required if dust is generated when handling this product. Ensure that eyewash stations are close to the workstation location. Use equipment for eye protection that meets the standards referenced by CSA Standard CAN/CSA-Z94.3-92 and OSHA regulations in 29 CFR 1910.133 for Personal Protective Equipment.

Hand Protection:

Wear protective gloves. Consult manufacturer specifications for further information.

Skin and Body Protection:

Wear protective clothing.

Respiratory Protection:

If engineering controls and ventilation are not sufficient to control exposure to below the allowable limits then an appropriate NIOSH/MSHA approved air-purifying respirator

that meets the requirements of CSA Standard CAN/CSA-Z94.4-11, with particulate filter, or self-contained breathing apparatus must be used.

General Hygiene Considerations: Handle according to established industrial hygiene and safety practices. Consult a competent industrial hygienist to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES
--

Appearance:	Blue powder.
Colour:	Blue.
Odour:	Odourless.
Odour Threshold:	Not available.
Physical State:	Solid.
pH (1% solution in water):	5 to 9
Melting Point / Freezing Point:	Decomposes before melting.
Initial Boiling Point:	Not available.
Boiling Range:	Not available.
Flash Point:	Not available.
Evaporation Rate:	Not available.
Flammability (solid, gas):	See Section 5.
Lower Flammability Limit:	≥ 40 g/m ³
Upper Flammability Limit:	Not available.
Vapor Pressure:	Not available.
Vapor Density:	Not available.
Relative Density:	Not available.
Solubilities:	Water solubility: 680 g/L at 0 °C (32 °F).
Partition Coefficient: n-Octanol/Water:	log Pow < 0
Auto-ignition Temperature:	≥ 200 °C (392 °F) (Method: Auto-ignition of a 5 mm dust layer according to EN 50281-2-1)
Decomposition Temperature:	263 °C (505.4 °F)
Viscosity:	Not available.
Percent Volatile, wt. %:	Not available.
VOC content, wt. %:	Not available.



Bulk Density: 600 to 900 kg/m³

Coefficient of Water/Oil Distribution: Not available.

Section 10: STABILITY AND REACTIVITY

Reactivity: Contact with incompatible materials. Exposure to heat.

Chemical Stability: Stable under normal storage conditions.

Possibility of Hazardous Reactions: None known.

Conditions to Avoid: Contact with incompatible materials. Exposure to heat.

Incompatible Materials: Strong oxidizers.

Hazardous Decomposition Products: Not available.

Section 11: TOXICOLOGICAL INFORMATION

EFFECTS OF ACUTE EXPOSURE

Product Toxicity

Oral: 956.99 mg/kg (calculated)

Dermal: Not available.

Inhalation: Not available.

Component Toxicity

Component	CAS No.	LD ₅₀ oral	LD ₅₀ dermal	LC ₅₀
Copper versenate	14025-15-1	890 mg/kg (rat)	Not available.	Not available.

Likely Routes of Exposure: Eye contact. Skin contact. Inhalation. Ingestion. Skin absorption.

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system.

Symptoms (including delayed and immediate effects)

Inhalation: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Eye: Causes serious eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Skin: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

Ingestion: Harmful if swallowed. May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Skin Sensitization: Not available.

Respiratory Sensitization: Not available.

Medical Conditions Aggravated By Exposure: Not available.



EFFECTS OF CHRONIC EXPOSURE (from short and long-term exposure)

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system.

Chronic Effects: Prolonged or repeated contact may dry skin and cause irritation.

Carcinogenicity: This product does not contain any carcinogens or potential carcinogens above reportable thresholds as listed by ACGIH, IARC, OSHA, or NTP.

Mutagenicity: Not available.

Reproductive Effects: Not available.

Developmental Effects

Teratogenicity: Not available.

Embryotoxicity: Not available.

Toxicologically Synergistic Materials: Not available.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity: Toxicity to fish: LC50 = 555 mg/L (OECD 203);
 Toxicity to daphnia and other aquatic invertebrates: EC50 = 109.2 mg/L (OECD 202);
 Toxicity to algae: EC50 = 662.6 mg/L (OECD 201);
 Toxicity to bacteria: NOEC: 654 mg/L (OECD 209);
 Toxicity to fish (Chronic toxicity): LC50 = 37.2 mg/L (OECD 210);
 Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity): 29.5 mg/L (OECD 211).

Persistence / Degradability: Not readily biodegradable, but will degrade after a longer period.

Bioaccumulation / Accumulation: Not expected considering the low log Pow value.

Mobility in Environment: Not available.

Other Adverse Effects: Not available.

Section 13: DISPOSAL CONSIDERATIONS

Disposal Instructions: Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

Section 14: TRANSPORT INFORMATION

U.S. Department of Transportation (DOT)

Proper Shipping Name: Not regulated.

Class: Not applicable.

UN Number: Not applicable.

Packing Group: Not applicable.

Label Code: Not applicable.



Canada Transportation of Dangerous Goods (TDG)

Proper Shipping Name: Not regulated.

Class: Not applicable.

UN Number: Not applicable.

Packing Group: Not applicable.

Label Code: Not applicable.

Section 15: REGULATORY INFORMATION

Chemical Inventories

US (TSCA)

The components of this product are in compliance with the chemical notification requirements of TSCA.

Canada (DSL)

The components of this product are in compliance with the chemical notification requirements of the NSN Regulations under CEPA, 1999.

Federal Regulations

United States

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SARA Title III

No components are listed.

State Regulations

Massachusetts

US Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

No components are listed.

New Jersey

US New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

No components are listed.

Pennsylvania

US Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

No components are listed.

California

California Prop 65: This product does not contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Section 16: OTHER INFORMATION

Disclaimer:

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for their own particular use.

Date of Preparation of SDS: December 12, 2018

Version: 1.0

GHS SDS Prepared by: **Aegis Regulatory Inc.**

Phone: (519) 488-0351

www.aegisreg.com

Copper Sulphate Pentahydrate

PP-009

SDS Preparation Date (mm/dd/yyyy): 06/28/2016

Page 1 of 11

SAFETY DATA SHEET

SECTION 1. IDENTIFICATION

Product identifier used on the label

: **Copper Sulphate Pentahydrate**

Product Code(s) : None assigned.

Recommended use of the chemical and restrictions on use

: Fertilizer, horticultural chemical
Use pattern: professional use
Recommended restrictions: None known.

Chemical family : Inorganic fertilizer

Name, address, and telephone number of the manufacturer:

Plant Products Inc.

50 Hazelton Street
PO BOX 33

Leamington, Ontario, Canada N8H 3W1

Manufacturer's Telephone # : 519-326-9037 (Monday - Friday, 8:00 am - 5:00 pm, Eastern Standard Time)

Name, address, and telephone number of the supplier:

Plant Products Inc.

50 Hazelton Street
PO BOX 33

Leamington, Ontario, Canada N8H 3W1

Supplier's Telephone # : 519-326-9037 (Monday - Friday, 8:00 am - 5:00 pm, Eastern Standard Time)

24 Hr. Emergency Tel # : CANUTEC: 1-888-CANUTEC (1-888-226-8832)

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

Appearance: Solid - crystalline, blue, hygroscopic.

Odour: Odourless.

Most important hazards: This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Hazard classification:

Acute toxicity, Oral - Category 4

Skin corrosion/irritation - Category 2

Eye damage/irritation - Category 2A

Label elements

Hazard pictogram(s)



Signal Word

WARNING!

Copper Sulphate Pentahydrate

PP-009

SDS Preparation Date (mm/dd/yyyy): 06/28/2016

Page 2 of 11

SAFETY DATA SHEET

Hazard statement(s)

Harmful if swallowed.
Causes skin irritation.
Causes serious eye irritation.

Precautionary statement(s)

Wear protective gloves and eye/face protection.
Do not eat, drink or smoke when using this product.
Wash hands thoroughly after handling.

IF ON SKIN: Wash with plenty of soap and water.
Take off contaminated clothing and wash before re-use.
If skin irritation occurs, get medical advice/attention.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing.
If eye irritation persists: get medical advice/attention.
IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell.
Rinse mouth.

Dispose of contents/container in accordance with local/regional/national/international regulations.

Other hazards

No OSHA defined hazard classes.

Other hazards which do not result in classification:
Toxic fumes, gases or vapours may evolve on burning.
Corrosive to plain steel.
Dusts may cause irritation of the mucous membranes and respiratory tract.
Prolonged overexposure may cause liver and kidney effects.
Chronic skin contact with low concentrations may cause dermatitis.

Ecological information:

Very toxic to aquatic life. Avoid release to the environment. See Section 12 for more environmental information.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance

<u>Chemical name</u>	<u>Common name and synonyms</u>	<u>CAS #</u>	<u>Concentration (% by weight)</u>
Copper Sulphate Pentahydrate	Cupric sulfate pentahydrate	7758-99-8	99.92%

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

- Ingestion* : Rinse mouth thoroughly. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Call a POISON CENTRE or doctor/physician if you feel unwell.
- Inhalation* : Remove exposed person to fresh air immediately. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. Get medical attention if irritation develops and persists.
- Skin contact* : Wash off with soap and plenty of water. Remove and wash contaminated clothing before re-use. Get medical attention if irritation develops and persists.
- Eye contact* : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Do not rub eyes. Remove contact lenses, if present and easy to do. Get medical attention if irritation develops and persists.

Copper Sulphate Pentahydrate

PP-009

SDS Preparation Date (mm/dd/yyyy): 06/28/2016

Page 3 of 11

SAFETY DATA SHEET

Most important symptoms and effects, both acute and delayed

- : Harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.
- : Causes skin irritation. Contact may cause redness, swelling and a painful sensation. Contact with dust can cause mechanical irritation or drying of the skin.
- : Causes serious eye irritation. Symptoms may include severe pain, tearing, redness, swelling and blurred vision. Dust contact with the eyes can lead to mechanical irritation.
- : Dusts may cause irritation of the mucous membranes and respiratory tract. Symptoms may include coughing, mucous production and difficulty breathing.
- : Prolonged overexposure may cause liver and kidney effects.
- : Chronic skin contact with low concentrations may cause dermatitis.

Indication of any immediate medical attention and special treatment needed

- : Provide general supportive measures and treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

- : Use media suitable for the surrounding area.

Unsuitable extinguishing media

- : Do not use a solid water stream as it may scatter and spread the fire.

Special hazards arising from the substance or mixture / Conditions of flammability

- : Not considered flammable. Toxic fumes, gases or vapours may evolve on burning. May decompose to form toxic/corrosive gasses if exposed to high heat. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure.

Flammability classification (OSHA 29 CFR 1910.106)

- : Not flammable.

Hazardous combustion products

- : Copper oxides; Sulfur oxides.

Special protective equipment and precautions for firefighters

Protective equipment for fire-fighters

- : Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. Firefighters should wear an approved full-face, self-contained breathing apparatus (SCBA) and impervious clothing.

Special fire-fighting procedures

- : Move containers from fire area if safe to do so. Contaminated surfaces may be slippery. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses. Dike for water control.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

- : Restrict access to area until completion of clean-up. Keep people away from and upwind of spill/leak. All persons dealing with clean-up should wear the appropriate protective equipment including self-contained breathing apparatus. Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Do not allow material to contaminate ground water system. Prevent product from entering drains, sewers, waterways and soil.

Copper Sulphate Pentahydrate

PP-009

SDS Preparation Date (mm/dd/yyyy): 06/28/2016

Page 4 of 11

SAFETY DATA SHEET

Methods and material for containment and cleaning up

- : Ventilate the area. Remove all sources of ignition. Prevent further leakage or spillage if safe to do so. Do not touch or walk through spilled material. Avoid dust formation. Spills which have occurred outdoors should be temporarily covered to prevent spreading of the chemical by the wind. Vacuum or sweep up spilled material using a method that does not generate airborne dust. Place in clean, dry and labeled containers. Clean surface thoroughly to remove residual contamination. After cleaning, flush away traces with water. Do not flush into surface water or sanitary sewer system. Refer to Section 13 for disposal of contaminated material. Contact the proper local authorities.

Special spill response procedures

- : For 24-hour emergency assistance, call: 1-613-996-6666 (CANUTEC). If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8802).

EPA/CERCLA Reportable quantity (RQ):
None known.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

- : Avoid dust formation. Use in a well-ventilated area. Material is hygroscopic and may absorb moisture from air. Keep container tightly closed when not in use. Wear appropriate protective equipment. Avoid breathing dust. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. Do not ingest. Wash thoroughly after handling. Keep away from incompatibles. Keep away from extreme heat and flame. Empty containers retain residue and can be dangerous.

Conditions for safe storage

- : Store in a cool, dry, well ventilated area. Store away from incompatible materials. Keep away from heat and sources of ignition. Keep away from direct sunlight. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Protect against moisture, water, and physical damage. Do not store in open or unlabelled containers. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. No smoking. Inspect periodically for damage or leaks. Have appropriate fire extinguishers and spill clean-up equipment in or near storage area.

Incompatible materials

- : Oxidizing agents, Strong acids, Strong bases, Powdered metals, Nitromethane.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<u>Exposure Limits:</u>				
<u>Chemical Name</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>	
	<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>
Copper Sulphate Pentahydrate	1 mg/m ³ (dust and mist, as Cu)	N/Av	1 mg/m ³ (dust and mist, as Cu)	N/Av

Exposure controls

Ventilation and engineering measures

- : Use only in well-ventilated areas. Apply technical measures to comply with the occupational exposure limits. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. In case of insufficient ventilation wear suitable respiratory equipment.

Copper Sulphate Pentahydrate

PP-009

SDS Preparation Date (mm/dd/yyyy): 06/28/2016

Page 5 of 11

SAFETY DATA SHEET

- Respiratory protection** : If airbourne concentrations are above the permissible exposure limit or are not known, use NIOSH-approved respirators. Use a NIOSH approved dust respirator if dust levels exceed exposure limits. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134) or CSA Z94.4-02. Advice should be sought from respiratory protection specialists.
- Skin protection** : Wear protective gloves. The suitability for a specific workplace should be discussed with the producers of the protective gloves.
- Eye / face protection** : Chemical goggles must be worn to prevent dusts from entering the eyes. A full face shield may also be necessary.
- Other protective equipment** : Emergency showers and eyewash facilities should be nearby. Other equipment may be required depending on workplace standards.
- General hygiene considerations** : Avoid breathing dust. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. Wash hands thoroughly after using this product, and before eating, drinking or smoking. Remove and wash contaminated clothing before re-use. Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance** : Solid - crystalline, blue
- Odour** : Odourless.
- Odour threshold** : N/Ap
- pH** : 3.7-4.2 (10% Solution)
- Melting/Freezing point** : 230°F / 110°C Melting point
- Initial boiling point and boiling range** : Decomposes on heating.
- Flash point** : N/Ap
- Flashpoint (Method)** : N/Ap
- Evaporation rate (BuAe = 1)** : N/Ap
- Flammability (solid, gas)** : Not considered flammable.
- Lower flammable limit (% by vol.)** : N/Ap
- Upper flammable limit (% by vol.)** : N/Ap
- Oxidizing properties** : None known.
- Explosive properties** : Not explosive
- Vapour pressure** : N/Ap
- Vapour density** : 8.6 (Air = 1.0)
- Relative density / Specific gravity** : 2.2 (water = 1)
- Solubility in water** : Soluble
- Other solubility(ies)** : N/Av
- Partition coefficient: n-octanol/water or Coefficient of water/oil distribution** : N/Ap
- Auto-ignition temperature** : N/Ap
- Decomposition temperature** : N/Av
- Viscosity** : N/Ap
- Volatiles (% by weight)** : N/Av
- Volatile organic Compounds (VOC's)** : N/Av
- Absolute pressure of container** : N/Ap

Copper Sulphate Pentahydrate

PP-009

SDS Preparation Date (mm/dd/yyyy): 06/28/2016

Page 6 of 11

SAFETY DATA SHEET

Flame projection length : N/Ap

Other physical/chemical comments

: Not sensitive to static discharge or mechanical impact under normal conditions of use and handling.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not normally reactive.

Chemical stability : Stable under normal conditions. Decomposes on heating.

Possibility of hazardous reactions

: Hazardous polymerization does not occur. No dangerous reaction known under conditions of normal use.

Conditions to avoid : Avoid dust formation. Avoid contact with incompatible materials. Do not use in areas without adequate ventilation. Keep away from extreme heat and flame.

Incompatible materials : Moisture. Oxidizing agents. Strong acids. Strong bases. Powdered metals. Nitromethane.

Hazardous decomposition products

: Copper oxides; Sulphur oxides.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

Routes of entry inhalation : YES

Routes of entry skin & eye : YES

Routes of entry Ingestion : YES

Routes of exposure skin absorption

: NO

Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation

: Dusts may cause irritation of the mucous membranes and respiratory tract. Symptoms may include coughing, mucous production and difficulty breathing.

Sign and symptoms ingestion

: Harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Sign and symptoms skin

: Causes skin irritation. Contact may cause redness, swelling and a painful sensation. Contact with dust can cause mechanical irritation or drying of the skin.

Sign and symptoms eyes

: Causes serious eye irritation. Symptoms may include severe pain, tearing, redness, swelling and blurred vision. Dust contact with the eyes can lead to mechanical irritation.

Potential Chronic Health Effects

: Prolonged overexposure may cause liver and kidney effects. Chronic skin contact with low concentrations may cause dermatitis.

Mutagenicity

: Not expected to be mutagenic in humans.

Carcinogenicity

: No component of this product present at levels greater than, or equal to, 0.1% is identified as a carcinogen or potential carcinogen by ACGIH, IARC, OSHA, or NTP.

Reproductive effects & Teratogenicity

: Not expected to cause reproductive effects.

Sensitization to material

: Not expected to be a skin or respiratory sensitizer.

Copper Sulphate Pentahydrate

PP-009

SDS Preparation Date (mm/dd/yyyy): 06/28/2016

Page 7 of 11

SAFETY DATA SHEET

Specific target organ effects : Not classified as a specific target organ toxicity-single exposure.
Not classified as specific target organ toxicity-repeated exposure.

Medical conditions aggravated by overexposure

: Pre-existing skin, eye and respiratory disorders.

Synergistic materials

: No information available.

Toxicological data

: This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015). Classification:

Acute toxicity (Oral) - Category 4. Harmful if swallowed.

See below for toxicological data on the substance.

<u>Chemical name</u>	<u>LC₅₀(4hr)</u> <u>inh, rat</u>	<u>LD₅₀</u>	
		<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
Copper Sulphate Pentahydrate	N/Av	481 mg/kg	> 2000 mg/kg (No mortality)

Other important toxicological hazards

: None reported by the manufacturer.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity : Very toxic to aquatic life. The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters. See the following tables for the substance's ecotoxicity data.

Ecotoxicity data:

<u>Ingredients</u>	<u>CAS No</u>	<u>Toxicity to Fish</u>		
		<u>LC50 / 96h</u>	<u>NOEC / 21 day</u>	<u>M Factor</u>
Copper Sulphate Pentahydrate	7758-99-8	0.032 mg/L (Rainbow trout)	N/Av	10

<u>Ingredients</u>	<u>CAS No</u>	<u>Toxicity to Daphnia</u>		
		<u>EC50 / 48h</u>	<u>NOEC / 21 day</u>	<u>M Factor</u>
Copper Sulphate Pentahydrate	7758-99-8	0.18 mg/L (Daphnia magna)	N/Av	1

<u>Ingredients</u>	<u>CAS No</u>	<u>Toxicity to Algae</u>		
		<u>EC50 / 96h or 72h</u>	<u>NOEC / 96h or 72h</u>	<u>M Factor</u>
Copper Sulphate Pentahydrate	7758-99-8	N/Av	N/Av	N/Av

Persistence and degradability

: Biodegradation is not applicable to inorganic substances.

Bioaccumulation potential

: Not expected to bioaccumulate.
See the following data for ingredient information.

Copper Sulphate Pentahydrate

PP-009

SDS Preparation Date (mm/dd/yyyy): 06/28/2016

Page 8 of 11

SAFETY DATA SHEET

<u>Components</u>	<u>Partition coefficient n-octanol/water (log Kow)</u>	<u>Bioconcentration factor (BCF)</u>
Copper Sulphate Pentahydrate (CAS 7758-99-8)	N/Ap	N/Ap

Mobility in soil : There is no data available for this product.

Other Adverse Environmental effects

: No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.



SECTION 13. DISPOSAL CONSIDERATIONS

Handling for Disposal : Handle in accordance with good industrial hygiene and safety practice. Since emptied containers may retain product residue, follow label warnings even after container is emptied. Refer to protective measures listed in sections 7 and 8.

Methods of Disposal : Dispose in accordance with all applicable federal, state, provincial and local regulations.

RCRA : If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

SECTION 14. TRANSPORTATION INFORMATION

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
49CFR/DOT	UN3077	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper Sulphate Pentahydrate)	9	III	
49CFR/DOT Additional information	This product contains marine pollutants. Not regulated for road or rail shipment if packaged in non-bulk containers (450 L / 119 Gallons or less each).				
TDG	UN3077	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Copper Sulphate Pentahydrate)	9	III	
TDG Additional information	This product contains marine pollutants. The 'Environmentally hazardous' mark must appear on packagings holding more than 5 kg of the material. This material may be shipped as an exempted marine pollutant in accordance with TDG Section 1.45.1 and Special Provision 99.				

Special precautions for user : Keep away from extreme heat and flame. Appropriate advice on safety must accompany the package.

Environmental hazards : This substance meets the criteria for an environmentally hazardous substance according to the IMDG Code. See ECOLOGICAL INFORMATION, Section 12.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

: This information is not available.

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

Components listed below are present on the following U.S. Federal chemical lists:

Copper Sulphate Pentahydrate

PP-009

SDS Preparation Date (mm/dd/yyyy): 06/28/2016

Page 9 of 11

SAFETY DATA SHEET

<u>Ingredients</u>	CAS #	TSCA Inventory	CERCLA Reportable Quantity(RQ) (40 CFR 117.302):	SARA TITLE III: Sec. 302, Extremely Hazardous Substance, 40 CFR 355:	SARA TITLE III: Sec. 313, 40 CFR 372, Specific Toxic Chemical	
					Toxic Chemical	de minimus Concentration
Copper Sulphate Pentahydrate	7758-99-8	NL	N/Ap	N/Ap	No	N/Ap

SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes: Immediate (Acute) health hazard, Chronic Health Hazard Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds for the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

US State Right to Know Laws:

The following chemicals are specifically listed by individual States:

<u>Ingredients</u>	CAS #	California Proposition 65		State "Right to Know" Lists					
		Listed	Type of Toxicity	CA	MA	MN	NJ	PA	RI
Copper Sulphate Pentahydrate	7758-99-8	No	N/Ap	No	No	No	No	No	No

Canadian Information:

Canadian Environmental Protection Act (CEPA):

The following ingredient(s) do not appear on the DSL or NDSL: Copper sulfate pentahydrate.

WHMIS information: Refer to Section 2 for a WHMIS Classification for this product.

International Information:

Components listed below are present on the following International Inventory list:

<u>Ingredients</u>	CAS #	European EINECS	Australia AICS	Philippines PICCS	Japan ENCS	Korea KECI/KECL	China IECSC	NewZealand IOC
Copper Sulphate Pentahydrate	7758-99-8	231-847-6 (anhydrous)	Present	Present	(1)-300 (anhydrous)	KE-08956 (anhydrous)	Present	HSR003126

SECTION 16. OTHER INFORMATION

Legend

- : ACGIH: American Conference of Governmental Industrial Hygienists
- AICS: Australian Inventory of Chemical Substances
- CA: California
- CAS: Chemical Abstract Services
- CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
- CFR: Code of Federal Regulations
- CSA: Canadian Standards Association
- DOT: Department of Transportation
- EC50: Effective Concentration 50%.
- ECHA: European Chemicals Agency
- EINECS: European Inventory of Existing Commercial chemical Substances
- ENCS: Existing and New Chemical Substances
- EPA: Environmental Protection Agency

Copper Sulphate Pentahydrate

PP-009

SDS Preparation Date (mm/dd/yyyy): 06/28/2016

Page 10 of 11

SAFETY DATA SHEET

HSDB: Hazardous Substances Data Bank
IARC: International Agency for Research on Cancer
IBC: Intermediate Bulk Container
IECSC: Inventory of Existing Chemical Substances
Inh: Inhalation
IOC: Inventory of Chemicals
KECI: Korean Existing Chemicals Inventory
KECL: Korean Existing Chemicals List
LC: Lethal Concentration
LD: Lethal Dose
MA: Massachusetts
MN: Minnesota
N/Ap: Not Applicable
N/Av: Not Available
NIOSH: National Institute of Occupational Safety and Health
NJ: New Jersey
NOEC: No observable effect concentration
NTP: National Toxicology Program
OECD: Organisation for Economic Co-operation and Development
OSHA: Occupational Safety and Health Administration
PA: Pennsylvania
PEL: Permissible exposure limit
PICCS: Philippine Inventory of Chemicals and Chemical Substances
RCRA: Resource Conservation and Recovery Act
RI: Rhode Island
SARA: Superfund Amendments and Reauthorization Act
SDS: Safety Data Sheet / MSDS: Material Safety Data Sheet
STEL: Short Term Exposure Limit
TDG: Canadian Transportation of Dangerous Goods Act & Regulations
TLV: Threshold Limit Values
TSCA: Toxic Substance Control Act
TWA: Time Weighted Average
WHMIS: Workplace Hazardous Materials Identification System

References : 1. ACGIH, Threshold Limit Values for Chemical Substances and Physical Agents & Biological Exposure Indices for 2016
2. International Agency for Research on Cancer Monographs, searched 2016
3. Canadian Centre for Occupational Health and Safety, CCHInfoWeb databases, 2016(Chempendium, HSDB and RTECs).
4. Material Safety Data Sheets from manufacturer.
5. US EPA Title III List of Lists - 2016 version.
6. California Proposition 65 List - 2016 version.
7. OECD - The Global Portal to Information on Chemical Substances - eChemPortal,2016.

Preparation Date (mm/dd/yyyy)

: 06/28/2016

Other special considerations for handling

: Provide adequate information, instruction and training for operators.

Copper Sulphate Pentahydrate

PP-009

SDS Preparation Date (mm/dd/yyyy): 06/28/2016

Page 11 of 11

SAFETY DATA SHEET

<p><u>Prepared for:</u> Direct all enquiries to: Plant Products, Inc. 50 Hazelton Street PO BOX 33 Leamington, ON, Canada N8H 3W1</p>	 PLANTPRODUCTS®
<p><u>Prepared by:</u> ICC The Compliance Center Inc. Telephone: (888) 442-9628 (U.S.): (888) 977-4834 (Canada) http://www.thecompliancecenter.com</p>	 icc ComplianceCenter

DISCLAIMER

This Safety Data Sheet was prepared by ICC The Compliance Center Inc. using information provided by / obtained from Plant Products, Inc. and CCOHS' Web Information Service. The information in the Safety Data Sheet is offered for your consideration and guidance when exposed to this product. ICC The Compliance Center Inc. and Plant Products, Inc. expressly disclaim all expressed or implied warranties and assume no responsibilities for the accuracy or completeness of the data contained herein. The data in this SDS does not apply to use with any other product or in any other process.

This Safety Data Sheet may not be changed, or altered in any way without the expressed knowledge and permission of ICC The Compliance Center Inc. and Plant Products, Inc.

END OF DOCUMENT

**Section 1: IDENTIFICATION**

Product Name: Iron Chelate 11 DTPA

Synonyms: Not available.

Product Use: Fertilizer.

Restrictions on Use: Not available.

Manufacturer/Supplier: Plant Products Inc.
50 Hazelton Street
Leamington, Ontario N8H 1B8

Phone Number: 519-326-9037
Toll free number 1-800-387-2449 (English)
Toll free number 1-800-361-9184 (French)

Emergency Phone: 1-800-424-9300 (CHEMTREC, 24 hours)

Date of Preparation of SDS: December 12, 2018

Section 2: HAZARD(S) IDENTIFICATION**GHS INFORMATION**

Classification: Combustible Dust, Category 1

LABEL ELEMENTS

Hazard None.

Pictogram(s):

Signal Word: Warning

Hazard May form combustible dust concentrations in air.

Statements:

Precautionary Statements

Prevention: Not applicable.

Response: Not applicable.

Storage: Not applicable.

Disposal: Not applicable.

Hazards Not Otherwise Classified: Not applicable.

Ingredients with Unknown Toxicity: None.

This material is considered hazardous by the OSHA Hazard Communication Standard, (29 CFR 1910.1200).

This material is considered hazardous by the Hazardous Products Regulations.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient(s)	Common name / Synonyms	CAS No.	% wt./wt.
---------------	---------------------------	---------	-----------

No hazardous ingredients are present at or above reportable levels.

Section 4: FIRST-AID MEASURES

Inhalation: If inhaled: Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Eye Contact: If in eyes: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Skin Contact: If on skin: Wash with plenty of water. Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

Ingestion: If swallowed: Call a poison center or doctor if you feel unwell. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.
Acute and delayed symptoms and effects: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

General Advice: In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

Note to Physicians: Symptoms may not appear immediately.

Section 5: FIRE-FIGHTING MEASURES

FLAMMABILITY AND EXPLOSION INFORMATION

May form combustible dust concentrations in air.

Sensitivity to Mechanical Impact: This material is not sensitive to mechanical impact.

Sensitivity to Static Discharge: In the form of dust, this material is sensitive to static discharge and may form explosive mixtures with air.

MEANS OF EXTINCTION

Suitable Extinguishing Media: Use appropriate extinguishing media for surrounding fire. Move containers from fire area if you can do it without risk.

Unsuitable Extinguishing Media: Not available.



Products of Combustion: Oxides of carbon. Oxides of nitrogen.

Protection of Firefighters: Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may cause pollution. Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

Section 6: ACCIDENTAL RELEASE MEASURES

Emergency Procedures: Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering.

Personal Precautions: Do not touch or walk through spilled material. Use personal protection recommended in Section 8.

Environmental Precautions: Keep out of drains, sewers, ditches, and waterways.

Methods for Containment: Do not flush to sewer or allow to enter waterways.

Methods for Clean-Up: Use explosion-proof equipment. Dust can be a fire or explosion hazard. Sweep up and shovel into suitable containers for disposal. Cleaning methods (e.g. compressed air) which can generate potentially combustible dust clouds should not be used.

Other Information: See Section 13 for disposal considerations.

Section 7: HANDLING AND STORAGE

Handling:
Do not swallow. Minimize dust generation and accumulation. Airborne dusts are potentially explosive. Avoid significant deposits of material, especially on horizontal surfaces, which may become airborne and form combustible dust clouds and may contribute to secondary explosions. Handling and processing operations should be conducted in accordance with 'best practices' (e.g. NFPA-654). Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. To avoid fire or explosion, ground and bond container and receiving equipment (and ground personnel) before transferring material. See Section 8 for information on Personal Protective Equipment.

Storage:
Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Store away from incompatible materials. See Section 10 for information on Incompatible Materials. Keep out of the reach of children.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines Component

Dust [CAS No. Not applicable]
ACGIH: 10 mg/m³ (TWA) (Inhalable.); 3 mg/m³ (TWA) (Respirable.); For Particles (Insoluble or Poorly Soluble) Not Otherwise Specified
OSHA: 15 mg/m³ (Total dust) (TWA), 5 mg/m³ (Respirable fraction) (TWA); For Particulates Not Otherwise Regulated (PNOR).

TWA: Time-Weighted Average



Engineering Controls:

It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen-deficient environment. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). Use explosion-proof electrical, ventilating, and lighting equipment.

PERSONAL PROTECTIVE EQUIPMENT (PPE)



Eye/Face Protection:

Wear safety glasses. Indirect vented, dust-tight goggles are required if dust is generated when handling this product. Use equipment for eye protection that meets the standards referenced by CSA Standard CAN/CSA-Z94.3-92 and OSHA regulations in 29 CFR 1910.133 for Personal Protective Equipment.

Hand Protection:

Wear protective gloves. Consult manufacturer specifications for further information.

Skin and Body Protection:

Wear protective clothing.

Respiratory Protection:

If engineering controls and ventilation are not sufficient to control exposure to below the allowable limits then an appropriate NIOSH/MSHA approved air-purifying respirator that meets the requirements of CSA Standard CAN/CSA-Z94.4-11, with particulate filter, or self-contained breathing apparatus must be used.

General Hygiene Considerations:

Handle according to established industrial hygiene and safety practices. Consult a competent industrial hygienist to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Yellow to green powder.
Colour:	Yellow to green.
Odour:	Odourless.
Odour Threshold:	Not available.
Physical State:	Solid.
pH (1% solution in water):	2.5 to 3.5
Melting Point / Freezing Point:	Decomposes before melting.



Initial Boiling Point:	Not available.
Boiling Range:	Not available.
Flash Point:	Not available.
Evaporation Rate:	Not available.
Flammability (solid, gas):	See Section 5.
Lower Flammability Limit:	≥ 40 g/m ³
Upper Flammability Limit:	Not available.
Vapor Pressure:	Not available.
Vapor Density:	Not available.
Relative Density:	Not available.
Solubilities:	Water solubility: ~ 110 g/L.
Partition Coefficient: n-Octanol/Water:	log Pow < 0
Auto-ignition Temperature:	≥ 200 °C (392 °F) (Method: Auto-ignition of a 5 mm dust layer according to EN 50281-2-1)
Decomposition Temperature:	Not available.
Viscosity:	Not available.
Percent Volatile, wt. %:	Not available.
VOC content, wt. %:	Not available.
Bulk Density:	650 to 750 kg/m ³
Coefficient of Water/Oil Distribution:	Not available.

Section 10: STABILITY AND REACTIVITY

Reactivity:	Contact with incompatible materials. Exposure to heat.
Chemical Stability:	Stable under normal storage conditions.
Possibility of Hazardous Reactions:	None known.
Conditions to Avoid:	Contact with incompatible materials. Exposure to heat.
Incompatible Materials:	None known.
Hazardous Decomposition Products:	Not available.

Section 11: TOXICOLOGICAL INFORMATION

EFFECTS OF ACUTE EXPOSURE

Product Toxicity

Oral: Not available.

Dermal: Not available.

Inhalation: Not available.

Component Toxicity

No LC50 or LD50 listed for the components of this product.

Likely Routes of Exposure: Eye contact. Skin contact. Inhalation. Ingestion.

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system.

Symptoms (including delayed and immediate effects)

Inhalation: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Eye: May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Skin: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

Ingestion: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Skin Sensitization: Not available.

Respiratory Sensitization: Not available.

Medical Conditions Not available.

Aggravated By Exposure:

EFFECTS OF CHRONIC EXPOSURE (from short and long-term exposure)

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system.

Chronic Effects: Prolonged or repeated contact may dry skin and cause irritation.

Carcinogenicity: This product does not contain any carcinogens or potential carcinogens above reportable thresholds as listed by ACGIH, IARC, OSHA, or NTP.

Mutagenicity: Not available.

Reproductive Effects: Not available.

Developmental Effects

Teratogenicity: Not available.

Embryotoxicity: Not available.

Toxicologically Synergistic Materials: Not available.

**Section 12: ECOLOGICAL INFORMATION**

Ecotoxicity:	Not available.
Persistence / Degradability:	Not available.
Bioaccumulation / Accumulation:	Not available.
Mobility in Environment:	Not available.
Other Adverse Effects:	Not available.

Section 13: DISPOSAL CONSIDERATIONS

Disposal Instructions: Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

Section 14: TRANSPORT INFORMATION**U.S. Department of Transportation (DOT)**

Proper Shipping Name:	Not regulated.
Class:	Not applicable.
UN Number:	Not applicable.
Packing Group:	Not applicable.
Label Code:	Not applicable.

Canada Transportation of Dangerous Goods (TDG)

Proper Shipping Name:	Not regulated.
Class:	Not applicable.
UN Number:	Not applicable.
Packing Group:	Not applicable.
Label Code:	Not applicable.

Section 15: REGULATORY INFORMATION**Chemical Inventories****US (TSCA)**

The components of this product are in compliance with the chemical notification requirements of TSCA.

Canada (DSL)

The components of this product are in compliance with the chemical notification requirements of the NSN Regulations under CEPA, 1999.

Federal Regulations**United States**

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.



PLANT PRODUCTS®

SAFETY DATA SHEET

SARA Title III

No components are listed.

State Regulations

Massachusetts

US Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

No components are listed.

New Jersey

US New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

No components are listed.

Pennsylvania

US Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

No components are listed.

California

California Prop 65: This product does not contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Section 16: OTHER INFORMATION

Disclaimer:

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for their own particular use.

Date of Preparation of SDS: December 12, 2018

Version: 1.0

GHS SDS Prepared by: Aegis Regulatory Inc.

Phone: (519) 488-0351

www.aegisreg.com

**Section 1: IDENTIFICATION**

Product Name: Iron Chelate 13 EDTA

Synonyms: Not available.

Product Use: Fertilizer.

Restrictions on Use: Not available.

Manufacturer/Supplier: Plant Products Inc.
50 Hazelton Street
Leamington, Ontario N8H 1B8

Phone Number: 519-326-9037
Toll free number 1-800-387-2449 (English)
Toll free number 1-800-361-9184 (French)

Emergency Phone: 1-800-424-9300 (CHEMTREC, 24 hours)

Date of Preparation of SDS: December 12, 2018

Section 2: HAZARD(S) IDENTIFICATION**GHS INFORMATION**

Classification: Combustible Dust, Category 1

LABEL ELEMENTS

Hazard None.

Pictogram(s):

Signal Word: Warning

Hazard May form combustible dust concentrations in air.

Statements:

Precautionary Statements

Prevention: Not applicable.

Response: Not applicable.

Storage: Not applicable.

Disposal: Not applicable.

Hazards Not Otherwise Classified: Not applicable.

Ingredients with Unknown Toxicity: None.

This material is considered hazardous by the OSHA Hazard Communication Standard, (29 CFR 1910.1200).

This material is considered hazardous by the Hazardous Products Regulations.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient(s)	Common name / Synonyms	CAS No.	% wt./wt.
---------------	---------------------------	---------	-----------

No hazardous ingredients are present at or above reportable levels.

Section 4: FIRST-AID MEASURES

Inhalation: If inhaled: Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Eye Contact: If in eyes: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Skin Contact: If on skin: Wash with plenty of water. Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

Ingestion: If swallowed: Call a poison center or doctor if you feel unwell. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.
Acute and delayed symptoms and effects: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

General Advice: In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

Note to Physicians: Symptoms may not appear immediately.

Section 5: FIRE-FIGHTING MEASURES

FLAMMABILITY AND EXPLOSION INFORMATION

May form combustible dust concentrations in air.

Sensitivity to Mechanical Impact: This material is not sensitive to mechanical impact.

Sensitivity to Static Discharge: In the form of dust, this material is sensitive to static discharge and may form explosive mixtures with air.

MEANS OF EXTINCTION

Suitable Extinguishing Media: Use appropriate extinguishing media for surrounding fire. Move containers from fire area if you can do it without risk.

Unsuitable Extinguishing Media: Not available.



Products of Combustion: Oxides of carbon. Oxides of nitrogen.

Protection of Firefighters: Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may cause pollution. Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

Section 6: ACCIDENTAL RELEASE MEASURES

Emergency Procedures: Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering.

Personal Precautions: Do not touch or walk through spilled material. Use personal protection recommended in Section 8.

Environmental Precautions: Keep out of drains, sewers, ditches, and waterways.

Methods for Containment: Do not flush to sewer or allow to enter waterways.

Methods for Clean-Up: Use explosion-proof equipment. Dust can be a fire or explosion hazard. Sweep up and shovel into suitable containers for disposal. Cleaning methods (e.g. compressed air) which can generate potentially combustible dust clouds should not be used.

Other Information: See Section 13 for disposal considerations.

Section 7: HANDLING AND STORAGE

Handling:
Do not swallow. Minimize dust generation and accumulation. Airborne dusts are potentially explosive. Avoid significant deposits of material, especially on horizontal surfaces, which may become airborne and form combustible dust clouds and may contribute to secondary explosions. Handling and processing operations should be conducted in accordance with 'best practices' (e.g. NFPA-654). Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. To avoid fire or explosion, ground and bond container and receiving equipment (and ground personnel) before transferring material. See Section 8 for information on Personal Protective Equipment.

Storage:
Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Store away from incompatible materials. See Section 10 for information on Incompatible Materials. Keep out of the reach of children.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines Component

Dust [CAS No. Not applicable]
ACGIH: 10 mg/m³ (TWA) (Inhalable.); 3 mg/m³ (TWA) (Respirable.); For Particles (Insoluble or Poorly Soluble) Not Otherwise Specified
OSHA: 15 mg/m³ (Total dust) (TWA), 5 mg/m³ (Respirable fraction) (TWA); For Particulates Not Otherwise Regulated (PNOR).

TWA: Time-Weighted Average



Engineering Controls:

It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen-deficient environment. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). Use explosion-proof electrical, ventilating, and lighting equipment.

PERSONAL PROTECTIVE EQUIPMENT (PPE)



Eye/Face Protection:

Wear safety glasses. Indirect vented, dust-tight goggles are required if dust is generated when handling this product. Use equipment for eye protection that meets the standards referenced by CSA Standard CAN/CSA-Z94.3-92 and OSHA regulations in 29 CFR 1910.133 for Personal Protective Equipment.

Hand Protection:

Wear protective gloves. Consult manufacturer specifications for further information.

Skin and Body Protection:

Wear protective clothing.

Respiratory Protection:

If engineering controls and ventilation are not sufficient to control exposure to below the allowable limits then an appropriate NIOSH/MSHA approved air-purifying respirator that meets the requirements of CSA Standard CAN/CSA-Z94.4-11, with particulate filter, or self-contained breathing apparatus must be used.

General Hygiene Considerations:

Handle according to established industrial hygiene and safety practices. Consult a competent industrial hygienist to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Yellow to brown powder.
Colour:	Yellow to brown.
Odour:	Odourless.
Odour Threshold:	Not available.
Physical State:	Solid.
pH (1% solution in water):	4 to 5.5
Melting Point / Freezing Point:	Decomposes before melting.



Initial Boiling Point:	Not available.
Boiling Range:	Not available.
Flash Point:	Not available.
Evaporation Rate:	Not available.
Flammability (solid, gas):	See Section 5.
Lower Flammability Limit:	≥ 40 g/m ³
Upper Flammability Limit:	Not available.
Vapor Pressure:	Not available.
Vapor Density:	Not available.
Relative Density:	Not available.
Solubilities:	Water solubility: ~ 90 g/L.
Partition Coefficient: n-Octanol/Water:	log Pow < 0
Auto-ignition Temperature:	> 200 °C (392 °F) (Method: Auto-ignition of a 5 mm dust layer according to EN 50281-2-1)
Decomposition Temperature:	Not available.
Viscosity:	Not available.
Percent Volatile, wt. %:	Not available.
VOC content, wt. %:	Not available.
Bulk Density:	900 to 1000 kg/m ³
Coefficient of Water/Oil Distribution:	Not available.

Section 10: STABILITY AND REACTIVITY

Reactivity:	Contact with incompatible materials. Exposure to heat.
Chemical Stability:	Stable under normal storage conditions.
Possibility of Hazardous Reactions:	None known.
Conditions to Avoid:	Contact with incompatible materials. Exposure to heat.
Incompatible Materials:	None known.
Hazardous Decomposition Products:	Not available.

Section 11: TOXICOLOGICAL INFORMATION

EFFECTS OF ACUTE EXPOSURE

Product Toxicity

Oral: Not available.

Dermal: Not available.

Inhalation: Not available.

Component Toxicity

No LC50 or LD50 listed for the components of this product.

Likely Routes of Exposure: Eye contact. Skin contact. Inhalation. Ingestion.

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system.

Symptoms (including delayed and immediate effects)

Inhalation: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Eye: May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Skin: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

Ingestion: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Skin Sensitization: Not available.

Respiratory Sensitization: Not available.

Medical Conditions Not available.

Aggravated By Exposure:

EFFECTS OF CHRONIC EXPOSURE (from short and long-term exposure)

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system.

Chronic Effects: Prolonged or repeated contact may dry skin and cause irritation.

Carcinogenicity: This product does not contain any carcinogens or potential carcinogens above reportable thresholds as listed by ACGIH, IARC, OSHA, or NTP.

Mutagenicity: Not available.

Reproductive Effects: Not available.

Developmental Effects

Teratogenicity: Not available.

Embryotoxicity: Not available.

Toxicologically Synergistic Materials: Not available.

**Section 12: ECOLOGICAL INFORMATION**

Ecotoxicity:	Not available.
Persistence / Degradability:	Not available.
Bioaccumulation / Accumulation:	Not available.
Mobility in Environment:	Not available.
Other Adverse Effects:	Not available.

Section 13: DISPOSAL CONSIDERATIONS

Disposal Instructions: Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

Section 14: TRANSPORT INFORMATION**U.S. Department of Transportation (DOT)**

Proper Shipping Name:	Not regulated.
Class:	Not applicable.
UN Number:	Not applicable.
Packing Group:	Not applicable.
Label Code:	Not applicable.

Canada Transportation of Dangerous Goods (TDG)

Proper Shipping Name:	Not regulated.
Class:	Not applicable.
UN Number:	Not applicable.
Packing Group:	Not applicable.
Label Code:	Not applicable.

Section 15: REGULATORY INFORMATION**Federal Regulations****United States**

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SARA Title III

No components are listed.

State Regulations**Massachusetts**

US Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

No components are listed.



PLANTPRODUCTS®

SAFETY DATA SHEET

Iron Chelate 13 EDTA

Date of Preparation: December 12, 2018

New Jersey

US New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

No components are listed.

Pennsylvania

US Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

No components are listed.

California

California Prop 65: This product does not contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Section 16: OTHER INFORMATION

Disclaimer:

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for their own particular use.

Date of Preparation of SDS: December 12, 2018

Version: 1.0

GHS SDS Prepared by: **Aegis Regulatory Inc.**

Phone: (519) 488-0351

www.aegisreg.com



Section 1: IDENTIFICATION

Product Name: Iron Chelate 6 EDDHA
Synonyms: Not available.
Product Use: Fertilizer.
Restrictions on Use: Not available.
Manufacturer/Supplier: Plant Products Inc.
50 Hazelton Street
Leamington, Ontario N8H 1B8
Phone Number: 519-326-9037
Toll free number 1-800-387-2449 (English)
Toll free number 1-800-361-9184 (French)
Emergency Phone: 1-800-424-9300 (CHEMTREC, 24 hours)
Date of Preparation of SDS: December 12, 2018

Section 2: HAZARD(S) IDENTIFICATION

GHS INFORMATION

Classification: Combustible Dust, Category 1

LABEL ELEMENTS

Hazard None.

Pictogram(s):

Signal Word: Warning

Hazard May form combustible dust concentrations in air.

Statements:

Precautionary Statements

Prevention: Not applicable.

Response: Not applicable.

Storage: Not applicable.

Disposal: Not applicable.

Hazards Not Otherwise Classified: Not applicable.

Ingredients with Unknown Toxicity: None.

This material is considered hazardous by the OSHA Hazard Communication Standard, (29 CFR 1910.1200).

This material is considered hazardous by the Hazardous Products Regulations.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient(s)	Common name / Synonyms	CAS No.	% wt./wt.
---------------	---------------------------	---------	-----------

No hazardous ingredients are present at or above reportable levels.

Section 4: FIRST-AID MEASURES

Inhalation: If inhaled: Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Eye Contact: If in eyes: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Skin Contact: If on skin: Wash with plenty of water. Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

Ingestion: If swallowed: Call a poison center or doctor if you feel unwell. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.
Acute and delayed symptoms and effects: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

General Advice: In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

Note to Physicians: Symptoms may not appear immediately.

Section 5: FIRE-FIGHTING MEASURES

FLAMMABILITY AND EXPLOSION INFORMATION

May form combustible dust concentrations in air.

Sensitivity to Mechanical Impact: This material is not sensitive to mechanical impact.

Sensitivity to Static Discharge: In the form of dust, this material is sensitive to static discharge and may form explosive mixtures with air.

MEANS OF EXTINCTION

Suitable Extinguishing Media: Use appropriate extinguishing media for surrounding fire. Move containers from fire area if you can do it without risk.

Unsuitable Extinguishing Media: Not available.



Products of Combustion: Oxides of carbon. Oxides of nitrogen.

Protection of Firefighters: Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may cause pollution. Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

Section 6: ACCIDENTAL RELEASE MEASURES

Emergency Procedures: Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering.

Personal Precautions: Do not touch or walk through spilled material. Use personal protection recommended in Section 8.

Environmental Precautions: Keep out of drains, sewers, ditches, and waterways.

Methods for Containment: Do not flush to sewer or allow to enter waterways.

Methods for Clean-Up: Use explosion-proof equipment. Dust can be a fire or explosion hazard. Sweep up and shovel into suitable containers for disposal. Cleaning methods (e.g. compressed air) which can generate potentially combustible dust clouds should not be used.

Other Information: See Section 13 for disposal considerations.

Section 7: HANDLING AND STORAGE

Handling:
Do not swallow. Minimize dust generation and accumulation. Airborne dusts are potentially explosive. Avoid significant deposits of material, especially on horizontal surfaces, which may become airborne and form combustible dust clouds and may contribute to secondary explosions. Handling and processing operations should be conducted in accordance with 'best practices' (e.g. NFPA-654). Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. To avoid fire or explosion, ground and bond container and receiving equipment (and ground personnel) before transferring material. See Section 8 for information on Personal Protective Equipment.

Storage:
Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Store away from incompatible materials. See Section 10 for information on Incompatible Materials. Keep out of the reach of children.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines Component

Dust [CAS No. Not applicable]
ACGIH: 10 mg/m³ (TWA) (Inhalable.); 3 mg/m³ (TWA) (Respirable.); For Particles (Insoluble or Poorly Soluble) Not Otherwise Specified
OSHA: 15 mg/m³ (Total dust) (TWA), 5 mg/m³ (Respirable fraction) (TWA); For Particulates Not Otherwise Regulated (PNOR).

TWA: Time-Weighted Average



Engineering Controls:

It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen-deficient environment. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). Use explosion-proof electrical, ventilating, and lighting equipment.

PERSONAL PROTECTIVE EQUIPMENT (PPE)



Eye/Face Protection:

Wear safety glasses. Indirect vented, dust-tight goggles are required if dust is generated when handling this product. Use equipment for eye protection that meets the standards referenced by CSA Standard CAN/CSA-Z94.3-92 and OSHA regulations in 29 CFR 1910.133 for Personal Protective Equipment.

Hand Protection:

Wear protective gloves. Consult manufacturer specifications for further information.

Skin and Body Protection:

Wear protective clothing.

Respiratory Protection:

If engineering controls and ventilation are not sufficient to control exposure to below the allowable limits then an appropriate NIOSH/MSHA approved air-purifying respirator that meets the requirements of CSA Standard CAN/CSA-Z94.4-11, with particulate filter, or self-contained breathing apparatus must be used.

General Hygiene Considerations:

Handle according to established industrial hygiene and safety practices. Consult a competent industrial hygienist to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Granular solid.
Colour:	Red brown.
Odour:	Odourless.
Odour Threshold:	Not available.
Physical State:	Solid.
pH (1% solution in water):	7 to 9
Melting Point / Freezing Point:	Decomposes before melting.



Initial Boiling Point:	Not available.
Boiling Range:	Not available.
Flash Point:	Not available.
Evaporation Rate:	Not available.
Flammability (solid, gas):	See Section 5.
Lower Flammability Limit:	40000 mg/m ³
Upper Flammability Limit:	Not available.
Vapor Pressure:	Not available.
Vapor Density:	Not available.
Relative Density:	Not available.
Solubilities:	Water solubility: ~ 50 g/L.
Partition Coefficient: n-Octanol/Water:	log Pow < 0
Auto-ignition Temperature:	Not available.
Decomposition Temperature:	Not available.
Viscosity:	Not available.
Percent Volatile, wt. %:	Not available.
VOC content, wt. %:	Not available.
Bulk Density:	500 to 700 kg/m ³
Coefficient of Water/Oil Distribution:	Not available.

Section 10: STABILITY AND REACTIVITY

Reactivity:	Contact with incompatible materials. Exposure to heat.
Chemical Stability:	Stable under normal storage conditions.
Possibility of Hazardous Reactions:	None known.
Conditions to Avoid:	Contact with incompatible materials. Exposure to heat.
Incompatible Materials:	None known.
Hazardous Decomposition Products:	Not available.

Section 11: TOXICOLOGICAL INFORMATION

EFFECTS OF ACUTE EXPOSURE

Product Toxicity

Oral:	Not available.
Dermal:	Not available.
Inhalation:	Not available.



Component Toxicity

No LC50 or LD50 listed for the components of this product.

Likely Routes of Exposure: Eye contact. Skin contact. Inhalation. Ingestion.

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system.

Symptoms (including delayed and immediate effects)

Inhalation: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Eye: May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Skin: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

Ingestion: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Skin Sensitization: Not available.

Respiratory Sensitization: Not available.

Medical Conditions Aggravated By Exposure: Not available.

EFFECTS OF CHRONIC EXPOSURE (from short and long-term exposure)

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system.

Chronic Effects: Prolonged or repeated contact may dry skin and cause irritation.

Carcinogenicity: This product does not contain any carcinogens or potential carcinogens above reportable thresholds as listed by ACGIH, IARC, OSHA, or NTP.

Mutagenicity: Not available.

Reproductive Effects: Not available.

Developmental Effects

Teratogenicity: Not available.

Embryotoxicity: Not available.

Toxicologically Synergistic Materials: Not available.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity: Not available.

Persistence / Degradability: Not available.

Bioaccumulation / Accumulation: Not available.

Mobility in Environment: Not available.

Other Adverse Effects: Not available.

Section 13: DISPOSAL CONSIDERATIONS

Disposal Instructions: Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

Section 14: TRANSPORT INFORMATION

U.S. Department of Transportation (DOT)

Proper Shipping Name: Not regulated.
Class: Not applicable.
UN Number: Not applicable.
Packing Group: Not applicable.
Label Code: Not applicable.

Canada Transportation of Dangerous Goods (TDG)

Proper Shipping Name: Not regulated.
Class: Not applicable.
UN Number: Not applicable.
Packing Group: Not applicable.
Label Code: Not applicable.

Section 15: REGULATORY INFORMATION

Federal Regulations

United States

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SARA Title III

No components are listed.

State Regulations

Massachusetts

US Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

No components are listed.

New Jersey

US New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

No components are listed.



PLANTPRODUCTS®

SAFETY DATA SHEET

Iron Chelate 6 EDDHA

Date of Preparation: December 12, 2018

Pennsylvania

US Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

No components are listed.

California

California Prop 65: This product does not contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Section 16: OTHER INFORMATION

Disclaimer:

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for their own particular use.

Date of Preparation of SDS: December 12, 2018

Version: 1.0

GHS SDS Prepared by: **Aegis Regulatory Inc.**

Phone: (519) 488-0351

www.aegisreg.com



Section 1: IDENTIFICATION

Product Name: Iron Sulphate

Synonyms: Not available.

Product Use: Fertilizer.

Restrictions on Use: Not available.

Manufacturer/Supplier: Plant Products Inc.
50 Hazelton Street
Leamington, Ontario N8H 1B8

Phone Number: 519-326-9037
Toll free number 1-800-387-2449 (English)
Toll free number 1-800-361-9184 (French)

Emergency Phone: 1-800-424-9300 (CHEMTREC, 24 hours)

Date of Preparation of SDS: December 12, 2018

Section 2: HAZARD(S) IDENTIFICATION

GHS INFORMATION

Classification: Acute Toxicity - Oral, Category 4
Skin Irritation, Category 2
Eye Irritation, Category 2A

LABEL ELEMENTS

Hazard

Pictogram(s):



Signal Word: Warning

Hazard Statements: Harmful if swallowed.
Causes skin irritation.
Causes serious eye irritation.

Precautionary Statements

Prevention: Wash thoroughly after handling.
Do not eat, drink or smoke when using this product.
Wear protective gloves, protective clothing and eye protection.

Response: IF SWALLOWED: Call a POISON CENTER or doctor if you feel unwell.
IF ON SKIN: Wash with plenty of water.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Rinse mouth.
If skin irritation occurs: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
Take off contaminated clothing and wash it before reuse.



Storage: Not applicable.

Disposal: Dispose of contents/container in accordance with applicable regional, national and local laws and regulations.

Hazards Not Otherwise Classified: Not applicable.

Ingredients with Unknown Toxicity: None.

This material is considered hazardous by the OSHA Hazard Communication Standard, (29 CFR 1910.1200).

This material is considered hazardous by the Hazardous Products Regulations.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Ingredient(s)	Common name / Synonyms	CAS No.	% wt./wt.
Ferrous sulfate heptahydrate	Not available.	7782-63-0	90 - 100

Impurities / Stabilizing additives: None known.

Section 4: FIRST-AID MEASURES

Inhalation: If inhaled: Call a poison center or doctor if you feel unwell.

Acute and delayed symptoms and effects: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Eye Contact: If in eyes: Rinse cautiously with water for at least 20 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Acute and delayed symptoms and effects: Causes serious eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision. Prolonged exposure of the eyes may cause discoloration.

Skin Contact: If on skin: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.

Acute and delayed symptoms and effects: Causes skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

Ingestion: If swallowed: Rinse mouth. Call a poison center or doctor if you feel unwell. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

Acute and delayed symptoms and effects: Harmful if swallowed. May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea. Ingestion of large quantities of Ferrous sulfate can produce GI tract disturbances, severe shock, vomiting, liver damage, tachycardia and death. Smaller doses are much more toxic to children. Pink urine discoloration is a strong indicator of iron poisoning.



General Advice: In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

Note to Physicians: Symptoms may not appear immediately.

Section 5: FIRE-FIGHTING MEASURES

FLAMMABILITY AND EXPLOSION INFORMATION

Not flammable or combustible by OSHA/WHMIS criteria.

Sensitivity to Mechanical Impact: This material is not sensitive to mechanical impact.

Sensitivity to Static Discharge: This material is not sensitive to static discharge.

MEANS OF EXTINCTION

Suitable Extinguishing Media: Small Fire: Dry chemical, CO₂, water spray or regular foam.

Large Fire: Water spray, fog or regular foam. Move containers from fire area if you can do it without risk.

Unsuitable Extinguishing Media: Not available.

Products of Combustion: Oxides of sulphur. Oxides of iron.

Protection of Firefighters: Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may cause pollution. Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

Section 6: ACCIDENTAL RELEASE MEASURES

Emergency Procedures: Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering.

Personal Precautions: Do not touch or walk through spilled material. Use personal protection recommended in Section 8.

Environmental Precautions: Keep out of drains, sewers, ditches, and waterways.

Methods for Containment: Do not flush to sewer or allow to enter waterways.

Methods for Clean-Up: Avoid generating dust. Sweep up and shovel into suitable containers for disposal.

Other Information: See Section 13 for disposal considerations.

Section 7: HANDLING AND STORAGE

Handling:

Do not swallow. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. See Section 8 for information on Personal Protective Equipment.

Storage:

Store away from incompatible materials. See Section 10 for information on Incompatible Materials. Keep out of the reach of children.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines Component

Ferrous sulfate heptahydrate [CAS No. 7782-63-0]
ACGIH: 10 mg/m³ (TWA) (Inhalable.); 3 mg/m³ (TWA) (Respirable.); For Particles (Insoluble or Poorly Soluble) Not Otherwise Specified
OSHA: 15 mg/m³ (Total dust) (TWA), 5 mg/m³ (Respirable fraction) (TWA); For Particulates Not Otherwise Regulated (PNOR).

TWA: Time-Weighted Average

Engineering Controls: Not normally required.

PERSONAL PROTECTIVE EQUIPMENT (PPE)



Eye/Face Protection: Wear chemical safety goggles. Indirect vented, dust-tight goggles are required if dust is generated when handling this product. Ensure that eyewash stations are close to the workstation location. Use equipment for eye protection that meets the standards referenced by CSA Standard CAN/CSA-Z94.3-92 and OSHA regulations in 29 CFR 1910.133 for Personal Protective Equipment.

Hand Protection: Wear protective gloves. Consult manufacturer specifications for further information.

Skin and Body Protection: Wear protective clothing.

Respiratory Protection: If engineering controls and ventilation are not sufficient to control exposure to below the allowable limits then an appropriate NIOSH/MSHA approved air-purifying respirator that meets the requirements of CSA Standard CAN/CSA-Z94.4-11, with particulate filter, or self-contained breathing apparatus must be used.

General Hygiene Considerations: Handle according to established industrial hygiene and safety practices. Consult a competent industrial hygienist to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Green or glaucous crystals.
Colour: Green or glaucous (dull grayish-green or blue).
Odour: Odourless.
Odour Threshold: Not available.



Physical State:	Solid.
pH:	3 to 5
Melting Point / Freezing Point:	57 °C (134.6 °F) (loses water)
Initial Boiling Point:	> 300 °C (572 °F) (Decomposes)
Boiling Range:	Not available.
Flash Point:	Not available.
Evaporation Rate:	Not available.
Flammability (solid, gas):	See Section 5.
Lower Flammability Limit:	Not available.
Upper Flammability Limit:	Not available.
Vapor Pressure:	Not available.
Vapor Density:	Not available.
Relative Density:	1.898 (Water = 1)
Solubilities:	Water solubility: 48.6 g/100 g water at 50 °C (122 °F).
Partition Coefficient: n-Octanol/Water:	Not available.
Auto-ignition Temperature:	Not available.
Decomposition Temperature:	Not available.
Viscosity:	Not available.
Percent Volatile, wt. %:	Not available.
VOC content, wt. %:	Not available.
Density:	Not available.
Coefficient of Water/Oil Distribution:	Not available.

Section 10: STABILITY AND REACTIVITY

Reactivity:	Contact with incompatible materials. Exposure to heat. Looses water in dry air and oxidizes upon exposure to moisture, forming a brown coating of extremely corrosive basic ferric sulfate.
Chemical Stability:	Stable under normal storage conditions.
Possibility of Hazardous Reactions:	None known.
Conditions to Avoid:	Contact with incompatible materials. Exposure to heat. Moisture.
Incompatible Materials:	Oxidizers. Alkali metals. Reacts in moist air to form ferric sulfate.
Hazardous Decomposition Products:	Not available.



Section 11: TOXICOLOGICAL INFORMATION

EFFECTS OF ACUTE EXPOSURE

Product Toxicity

Oral: Not available.

Dermal: Not available.

Inhalation: Not available.

Component Toxicity

Component	CAS No.	LD ₅₀ oral	LD ₅₀ dermal	LC ₅₀
Ferrous sulfate heptahydrate	7782-63-0	1520 mg/kg (mouse)	Not available.	Not available.

Likely Routes of Exposure: Eye contact. Skin contact. Inhalation. Ingestion.

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system.

Symptoms (including delayed and immediate effects)

Inhalation: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Eye: Causes serious eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision. Prolonged exposure of the eyes may cause discoloration.

Skin: Causes skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

Ingestion: Harmful if swallowed. May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea. Ingestion of large quantities of Ferrous sulfate can produce GI tract disturbances, severe shock, vomiting, liver damage, tachycardia and death. Smaller doses are much more toxic to children. Pink urine discoloration is a strong indicator of iron poisoning.

Skin Sensitization: Not available.

Respiratory Sensitization: Not available.

Medical Conditions Aggravated By Exposure: Not available.

EFFECTS OF CHRONIC EXPOSURE (from short and long-term exposure)

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system. Cardiovascular system. Liver.

Chronic Effects: Prolonged or repeated contact may dry skin and cause irritation. Severe or chronic Ferrous sulfate poisonings may damage blood vessels. Large chronic doses cause Rickets in infants. Chronic exposure may cause liver effects.

Carcinogenicity: This product does not contain any carcinogens or potential carcinogens above reportable thresholds as listed by ACGIH, IARC, OSHA, or NTP.



Mutagenicity: Not available.
Reproductive Effects: Not available.
Developmental Effects
Teratogenicity: Not available.
Embryotoxicity: Not available.
Toxicologically Synergistic Materials: Not available.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity: Not available.
Persistence / Degradability: Not available.
Bioaccumulation / Accumulation: Not available.
Mobility in Environment: Not available.
Other Adverse Effects: Not available.

Section 13: DISPOSAL CONSIDERATIONS

Disposal Instructions: Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

Section 14: TRANSPORT INFORMATION

U.S. Department of Transportation (DOT)

Proper Shipping Name: Not regulated.
Class: Not applicable.
UN Number: Not applicable.
Packing Group: Not applicable.
Label Code: Not applicable.

Canada Transportation of Dangerous Goods (TDG)

Proper Shipping Name: Not regulated.
Class: Not applicable.
UN Number: Not applicable.
Packing Group: Not applicable.
Label Code: Not applicable.

Section 15: REGULATORY INFORMATION

Chemical Inventories

US (TSCA)

The components of this product are in compliance with the chemical notification requirements of TSCA.

Canada (DSL)

The components of this product are in compliance with the chemical notification requirements of the NSN Regulations under CEPA, 1999.



Federal Regulations

United States

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SARA Title III

Component	Section 302 (EHS) TPQ (lbs.)	Section 304 EHS RQ (lbs.)	CERCLA RQ (lbs.)	Section 313	RCRA CODE	CAA 112(r) TQ (lbs.)
Ferrous sulfate heptahydrate	Not listed.	Not listed.	1000	Not listed.	Not listed.	Not listed.

State Regulations

Massachusetts

US Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

Component	CAS No.	RTK List
Ferrous sulfate heptahydrate	7782-63-0	Listed.

New Jersey

US New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

No components are listed.

Pennsylvania

US Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

Component	CAS No.	RTK List
Ferrous sulfate heptahydrate	7782-63-0	E

Note: E = Environmental Hazard

California

California Prop 65: This product does not contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Section 16: OTHER INFORMATION

Disclaimer:

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for their own particular use.

Date of Preparation of SDS: December 12, 2018

Version: 1.0

GHS SDS Prepared by: Aegis Regulatory Inc.

Phone: (519) 488-0351

www.aegisreg.com

Section 1: IDENTIFICATION

Product Name: Magnesium Chelate 13 EDTA
Synonyms: Not available.
Product Use: Fertilizer.
Restrictions on Use: Not available.
Manufacturer/Supplier: Plant Products Inc.
50 Hazelton Street
Leamington, Ontario N8H 1B8
Phone Number: 519-326-9037
Toll free number 1-800-387-2449 (English)
Toll free number 1-800-361-9184 (French)
Emergency Phone: 1-800-424-9300 (CHEMTREC, 24 hours)
Date of Preparation of SDS: December 12, 2018

Section 2: HAZARD(S) IDENTIFICATION

GHS INFORMATION

Classification: Combustible Dust, Category 1

LABEL ELEMENTS

Hazard None.

Pictogram(s):

Signal Word: Warning

Hazard Statements: May form combustible dust concentrations in air.

Precautionary Statements

Prevention: Not applicable.

Response: Not applicable.

Storage: Not applicable.

Disposal: Not applicable.

Hazards Not Otherwise Classified: Not applicable.

Ingredients with Unknown Toxicity: None.

This material is considered hazardous by the OSHA Hazard Communication Standard, (29 CFR 1910.1200).

This material is considered hazardous by the Hazardous Products Regulations.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient(s)	Common name / Synonyms	CAS No.	% wt./wt.
---------------	---------------------------	---------	-----------

No hazardous ingredients are present at or above reportable levels.

Section 4: FIRST-AID MEASURES

Inhalation: If inhaled: Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Eye Contact: If in eyes: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Skin Contact: If on skin: Wash with plenty of water. Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

Ingestion: If swallowed: Call a poison center or doctor if you feel unwell. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.
Acute and delayed symptoms and effects: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

General Advice: In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

Note to Physicians: Symptoms may not appear immediately.

Section 5: FIRE-FIGHTING MEASURES

FLAMMABILITY AND EXPLOSION INFORMATION

May form combustible dust concentrations in air.

Sensitivity to Mechanical Impact: This material is not sensitive to mechanical impact.

Sensitivity to Static Discharge: In the form of dust, this material is sensitive to static discharge and may form explosive mixtures with air.

MEANS OF EXTINCTION

Suitable Extinguishing Media: Use appropriate extinguishing media for surrounding fire. Move containers from fire area if you can do it without risk.

Unsuitable Extinguishing Media: Not available.



Products of Combustion: Oxides of carbon. Oxides of nitrogen.

Protection of Firefighters: Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may cause pollution. Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

Section 6: ACCIDENTAL RELEASE MEASURES

Emergency Procedures: Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering.

Personal Precautions: Do not touch or walk through spilled material. Use personal protection recommended in Section 8.

Environmental Precautions: Keep out of drains, sewers, ditches, and waterways.

Methods for Containment: Do not flush to sewer or allow to enter waterways.

Methods for Clean-Up: Use explosion-proof equipment. Dust can be a fire or explosion hazard. Sweep up and shovel into suitable containers for disposal. Cleaning methods (e.g. compressed air) which can generate potentially combustible dust clouds should not be used.

Other Information: See Section 13 for disposal considerations.

Section 7: HANDLING AND STORAGE

Handling:
Do not swallow. Minimize dust generation and accumulation. Airborne dusts are potentially explosive. Avoid significant deposits of material, especially on horizontal surfaces, which may become airborne and form combustible dust clouds and may contribute to secondary explosions. Handling and processing operations should be conducted in accordance with 'best practices' (e.g. NFPA-654). Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. To avoid fire or explosion, ground and bond container and receiving equipment (and ground personnel) before transferring material. See Section 8 for information on Personal Protective Equipment.

Storage:
Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Store away from incompatible materials. See Section 10 for information on Incompatible Materials. Keep out of the reach of children.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines Component

Dust [CAS No. Not applicable]
ACGIH: 10 mg/m³ (TWA) (Inhalable.); 3 mg/m³ (TWA) (Respirable.); For Particles (Insoluble or Poorly Soluble) Not Otherwise Specified
OSHA: 15 mg/m³ (Total dust) (TWA), 5 mg/m³ (Respirable fraction) (TWA); For Particulates Not Otherwise Regulated (PNOR).

TWA: Time-Weighted Average

Engineering Controls:

It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen-deficient environment. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). Use explosion-proof electrical, ventilating, and lighting equipment.

PERSONAL PROTECTIVE EQUIPMENT (PPE)



Eye/Face Protection:

Wear safety glasses. Indirect vented, dust-tight goggles are required if dust is generated when handling this product. Use equipment for eye protection that meets the standards referenced by CSA Standard CAN/CSA-Z94.3-92 and OSHA regulations in 29 CFR 1910.133 for Personal Protective Equipment.

Hand Protection:

Wear protective gloves. Consult manufacturer specifications for further information.

Skin and Body Protection:

Wear protective clothing.

Respiratory Protection:

If engineering controls and ventilation are not sufficient to control exposure to below the allowable limits then an appropriate NIOSH/MSHA approved air-purifying respirator that meets the requirements of CSA Standard CAN/CSA-Z94.4-11, with particulate filter, or self-contained breathing apparatus must be used.

General Hygiene Considerations:

Handle according to established industrial hygiene and safety practices. Consult a competent industrial hygienist to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	White granular solid.
Colour:	White.
Odour:	Odourless.
Odour Threshold:	Not available.
Physical State:	Solid.
pH (1% solution in water):	6.5 to 7
Melting Point / Freezing Point:	Decomposes before melting.



Initial Boiling Point:	Not available.
Boiling Range:	Not available.
Flash Point:	Not available.
Evaporation Rate:	Not available.
Flammability (solid, gas):	See Section 5.
Lower Flammability Limit:	≥ 40 g/m ³
Upper Flammability Limit:	Not available.
Vapor Pressure:	Not available.
Vapor Density:	Not available.
Relative Density:	Not available.
Solubilities:	Water solubility: ~ 900 g/L.
Partition Coefficient: n-Octanol/Water:	log Pow < 0
Auto-ignition Temperature:	≥ 200 °C (392 °F) (Method: Auto-ignition of a 5 mm dust layer according to EN 50281-2-1)
Decomposition Temperature:	Not available.
Viscosity:	Not available.
Percent Volatile, wt. %:	Not available.
VOC content, wt. %:	Not available.
Bulk Density:	600 to 800 kg/m ³
Coefficient of Water/Oil Distribution:	Not available.

Section 10: STABILITY AND REACTIVITY

Reactivity:	Contact with incompatible materials. Exposure to heat.
Chemical Stability:	Stable under normal storage conditions.
Possibility of Hazardous Reactions:	None known.
Conditions to Avoid:	Contact with incompatible materials. Exposure to heat.
Incompatible Materials:	None known.
Hazardous Decomposition Products:	Not available.

Section 11: TOXICOLOGICAL INFORMATION

EFFECTS OF ACUTE EXPOSURE

Product Toxicity

- Oral:** Not available.
- Dermal:** Not available.
- Inhalation:** Not available.

Component Toxicity

No LC50 or LD50 listed for the components of this product.

Likely Routes of Exposure: Eye contact. Skin contact. Inhalation. Ingestion.

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system.

Symptoms (including delayed and immediate effects)

- Inhalation:** May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.
- Eye:** May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.
- Skin:** May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.
- Ingestion:** May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Skin Sensitization: Not available.

Respiratory Sensitization: Not available.

Medical Conditions Not available.

Aggravated By Exposure:

EFFECTS OF CHRONIC EXPOSURE (from short and long-term exposure)

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system.

Chronic Effects: Prolonged or repeated contact may dry skin and cause irritation.

Carcinogenicity: This product does not contain any carcinogens or potential carcinogens above reportable thresholds as listed by ACGIH, IARC, OSHA, or NTP.

Mutagenicity: Not available.

Reproductive Effects: Not available.

Developmental Effects

Teratogenicity: Not available.

Embryotoxicity: Not available.

Toxicologically Synergistic Materials: Not available.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity: Not available.
Persistence / Degradability: Not available.
Bioaccumulation / Accumulation: Not available.
Mobility in Environment: Not available.
Other Adverse Effects: Not available.

Section 13: DISPOSAL CONSIDERATIONS

Disposal Instructions: Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

Section 14: TRANSPORT INFORMATION

U.S. Department of Transportation (DOT)

Proper Shipping Name: Not regulated.
Class: Not applicable.
UN Number: Not applicable.
Packing Group: Not applicable.
Label Code: Not applicable.

Canada Transportation of Dangerous Goods (TDG)

Proper Shipping Name: Not regulated.
Class: Not applicable.
UN Number: Not applicable.
Packing Group: Not applicable.
Label Code: Not applicable.

Section 15: REGULATORY INFORMATION

Federal Regulations

United States

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SARA Title III

No components are listed.

State Regulations

Massachusetts

US Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

No components are listed.



PLANTPRODUCTS®

SAFETY DATA SHEET

Magnesium Chelate 13 EDTA

Date of Preparation: December 12, 2018

New Jersey

US New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

No components are listed.

Pennsylvania

US Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

No components are listed.

California

California Prop 65: This product does not contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Section 16: OTHER INFORMATION

Disclaimer:

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for their own particular use.

Date of Preparation of SDS: December 12, 2018

Version: 1.0

GHS SDS Prepared by: Aegis Regulatory Inc.

Phone: (519) 488-0351

www.aegisreg.com

**Section 1: IDENTIFICATION**

Product Name: Magnesium Nitrate

Synonyms: Not available.

Product Use: Fertilizer.

Restrictions on Use: Not available.

Manufacturer/Supplier: Plant Products Inc.
50 Hazelton Street
Leamington, Ontario N8H 1B8

Phone Number: 519-326-9037
Toll free number 1-800-387-2449 (English)
Toll free number 1-800-361-9184 (French)

Emergency Phone: 1-800-424-9300 (CHEMTREC, 24 hours)

Date of Preparation of SDS: December 12, 2018

Section 2: HAZARD(S) IDENTIFICATION**GHS INFORMATION**

Classification: Not hazardous according to OSHA criteria (29 CFR 1910.1200).
Not hazardous according to WHMIS 2015 criteria.

LABEL ELEMENTS

Hazard None.

Pictogram(s):

Signal Word: None.

Hazard Not applicable.

Statements:

Precautionary Statements

Prevention: Not applicable.

Response: Not applicable.

Storage: Not applicable.

Disposal: Not applicable.

Hazards Not Otherwise Classified: Not applicable.

Ingredients with Unknown Toxicity: None.

This material is not considered hazardous by the OSHA Hazard Communication Standard, (29 CFR 1910.1200).

This material is not considered hazardous by the Hazardous Products Regulations.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient(s)	Common name / Synonyms	CAS No.	% wt./wt.
Magnesium nitrate hexahydrate	Not available.	13446-18-9	100

Impurities / Stabilizing additives: None known.

Section 4: FIRST-AID MEASURES

- Inhalation:** If inhaled: Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.
- Eye Contact:** If in eyes: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.
- Skin Contact:** If on skin: Wash with plenty of water. Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.
- Ingestion:** If swallowed: Call a poison center or doctor if you feel unwell. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.
Acute and delayed symptoms and effects: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea. The major acute toxic effect from nitrate ingestion is development of methemoglobinemia, a condition where more than 10% of the hemoglobin is transformed into methemoglobin. Methemoglobin reduces the oxygen-carrying capacity of the blood and, in addition, it interferes with the unloading of oxygen. When the conversion exceeds 70% the condition can be fatal.
- General Advice:** In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).
- Note to Physicians:** Symptoms may not appear immediately.

Section 5: FIRE-FIGHTING MEASURES

FLAMMABILITY AND EXPLOSION INFORMATION

Not flammable or combustible by OSHA/WHMIS criteria.

Sensitivity to Mechanical Impact: This material is not sensitive to mechanical impact.

Sensitivity to Static Discharge: This material is not sensitive to static discharge.

MEANS OF EXTINCTION

Suitable Extinguishing Media: Use appropriate extinguishing media for surrounding fire.

Move containers from fire area if you can do it without risk.

Unsuitable Extinguishing Media: Not available.

Products of Combustion: Oxides of nitrogen. Oxides of magnesium.

Protection of Firefighters: Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may cause pollution. Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

Section 6: ACCIDENTAL RELEASE MEASURES

Emergency Procedures: Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering.

Personal Precautions: Do not touch or walk through spilled material. Use personal protection recommended in Section 8.

Environmental Precautions: Keep out of drains, sewers, ditches, and waterways.

Methods for Containment: Do not flush to sewer or allow to enter waterways.

Methods for Clean-Up: Avoid generating dust. Sweep up and shovel into suitable containers for disposal.

Other Information: See Section 13 for disposal considerations.

Section 7: HANDLING AND STORAGE

Handling:
Do not swallow. See Section 8 for information on Personal Protective Equipment.

Storage:
Store away from incompatible materials. See Section 10 for information on Incompatible Materials. Keep out of the reach of children.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

**Exposure Guidelines
Component**

Magnesium nitrate hexahydrate [CAS No. 13446-18-9]

ACGIH: 10 mg/m³ (TWA) (Inhalable.); 3 mg/m³ (TWA) (Respirable.); For Particles (Insoluble or Poorly Soluble) Not Otherwise Specified

OSHA: 15 mg/m³ (Total dust) (TWA), 5 mg/m³ (Respirable fraction) (TWA); For Particulates Not Otherwise Regulated (PNOR).

TWA: Time-Weighted Average

Engineering Controls: Not normally required.

PERSONAL PROTECTIVE EQUIPMENT (PPE)



Eye/Face Protection: Wear safety glasses. Indirect vented, dust-tight goggles are

required if dust is generated when handling this product. Use equipment for eye protection that meets the standards referenced by CSA Standard CAN/CSA-Z94.3-92 and OSHA regulations in 29 CFR 1910.133 for Personal Protective Equipment.

Hand Protection:	Wear protective gloves. Nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), polyvinylchloride (0.7 mm) gloves are recommended. Consult manufacturer specifications for further information.
Skin and Body Protection:	Wear protective clothing.
Respiratory Protection:	If engineering controls and ventilation are not sufficient to control exposure to below the allowable limits then an appropriate NIOSH/MSHA approved air-purifying respirator that meets the requirements of CSA Standard CAN/CSA-Z94.4-11, with particulate filter, or self-contained breathing apparatus must be used.
General Hygiene Considerations:	Handle according to established industrial hygiene and safety practices. Consult a competent industrial hygienist to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Flakes.
Colour:	White to yellowish-greenish white.
Odour:	Odourless.
Odour Threshold:	Not available.
Physical State:	Solid.
pH (5% solution):	4 to 9
Melting Point / Freezing Point:	95 °C (203 °F)
Initial Boiling Point:	> 330 °C (626 °F)
Boiling Range:	Not available.
Flash Point:	Not available.
Evaporation Rate:	Not available.
Flammability (solid, gas):	See Section 5.
Lower Flammability Limit:	Not available.
Upper Flammability Limit:	Not available.
Vapor Pressure:	<0.001 kPa (<0.01 mmHg) at 20°C (68°F)
Vapor Density:	Not available.
Relative Density:	1.64



Solubilities: Highly soluble (> 80%) in water.

Partition Coefficient: n-Octanol/Water: The product is more soluble in water; log (octanol/water) < 1.

Auto-ignition Temperature: Not available.

Decomposition Temperature: 330 °C (626 °F)

Viscosity: Not available.

Percent Volatile, wt. %: Not available.

VOC content, wt. %: Not available.

Bulk Density: 0.6 to 1.0 g/cm³

Coefficient of Water/Oil Distribution: Not available.

Section 10: STABILITY AND REACTIVITY

Reactivity: Contact with incompatible materials. Exposure to heat.

Chemical Stability: Stable under normal storage conditions.

Possibility of Hazardous Reactions: None known.

Conditions to Avoid: Contact with incompatible materials. Exposure to heat.

Incompatible Materials: Reducers. Alkali metals. Hydrocarbons.

Hazardous Decomposition Products: Not available.

Section 11: TOXICOLOGICAL INFORMATION

EFFECTS OF ACUTE EXPOSURE

Product Toxicity

Oral: Not available.

Dermal: Not available.

Inhalation: Not available.

Component Toxicity

Component	CAS No.	LD ₅₀ oral	LD ₅₀ dermal	LC ₅₀
Magnesium nitrate hexahydrate	13446-18-9	5440 mg/kg (rat)	Not available.	Not available.

Likely Routes of Exposure: Eye contact. Skin contact. Inhalation. Ingestion.

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system.

Symptoms (including delayed and immediate effects)

Inhalation: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.



Eye: May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Skin: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

Ingestion: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea. The major acute toxic effect from nitrate ingestion is development of methemoglobinemia, a condition where more than 10% of the hemoglobin is transformed into methemoglobin. Methemoglobin reduces the oxygen-carrying capacity of the blood and, in addition, it interferes with the unloading of oxygen. When the conversion exceeds 70% the condition can be fatal.

Skin Sensitization: Not available.

Respiratory Sensitization: Not available.

Medical Conditions Aggravated By Exposure: Not available.

EFFECTS OF CHRONIC EXPOSURE (from short and long-term exposure)

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system.

Chronic Effects: Prolonged or repeated contact may dry skin and cause irritation.

Carcinogenicity: This product does not contain any carcinogens or potential carcinogens above reportable thresholds as listed by ACGIH, IARC, OSHA, or NTP. The major concern of possible long-term effects of exposure to nitrate is associated with formation of nitroso compounds, many of which are carcinogenic. This formation may take place wherever nitrite and nitrosable compounds are present, but it is favored by acidic conditions or the presence of some bacteria. The gastrointestinal tract (especially the stomach) is regarded as the main formation site, but nitrosation reactions can also take place in an infected urinary bladder.

Mutagenicity: Not available.

Reproductive Effects: Not available.

Developmental Effects

Teratogenicity: Not available.

Embryotoxicity: Not available.

Toxicologically Synergistic Materials: Not available.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity: Freshwater fish: LC50/96h = 1378 mg/L (based on reliable studies with potassium nitrate);
 Freshwater invertebrates: EC50/48h = 490 mg/L (based on reliable studies with potassium nitrate);
 Freshwater algae: EC50/LC50 >1700 mg/L (based on reliable studies with potassium nitrate).



Persistence / Degradability:	Not available.
Bioaccumulation / Accumulation:	Low potential for bioaccumulation.
Mobility in Environment:	Not available.
Other Adverse Effects:	Not available.

Section 13: DISPOSAL CONSIDERATIONS

Disposal Instructions: Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

Section 14: TRANSPORT INFORMATION

U.S. Department of Transportation (DOT)

Proper Shipping Name:	Not regulated.
Class:	Not applicable.
UN Number:	Not applicable.
Packing Group:	Not applicable.
Label Code:	Not applicable.

Canada Transportation of Dangerous Goods (TDG)

Proper Shipping Name:	Not regulated.
Class:	Not applicable.
UN Number:	Not applicable.
Packing Group:	Not applicable.
Label Code:	Not applicable.

Section 15: REGULATORY INFORMATION

Chemical Inventories

US (TSCA)

The components of this product are in compliance with the chemical notification requirements of TSCA.

Canada (DSL)

The components of this product are in compliance with the chemical notification requirements of the NSN Regulations under CEPA, 1999.

Federal Regulations

United States

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SARA Title III

No components are listed.



PLANTPRODUCTS®

SAFETY DATA SHEET

Magnesium Nitrate

Date of Preparation: December 12, 2018

State Regulations

Massachusetts

US Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

No components are listed.

Massachusetts

US Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

No components are listed.

New Jersey

US New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

No components are listed.

Pennsylvania

US Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

No components are listed.

California

California Prop 65: This product does not contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Section 16: OTHER INFORMATION

Disclaimer:

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for their own particular use.

Date of Preparation of SDS: December 12, 2018

Version: 1.0

GHS SDS Prepared by: **Aegis Regulatory Inc.**

Phone: (519) 488-0351

www.aegisreg.com



Magnesium Sulphate, Technical Grade

PP-010

SDS Preparation Date (mm/dd/yyyy): 05/20/2016

Page 1 of 10

SAFETY DATA SHEET

SECTION 1. IDENTIFICATION

Product identifier used on the label

: **Magnesium Sulphate, Technical Grade**

Product Code(s) : Epsom Salt

Recommended use of the chemical and restrictions on use

: Fertilizer, horticultural chemical.
Use pattern: professional use
Recommended restrictions: None known.

Chemical family : Inorganic fertilizer

Name, address, and telephone number of the manufacturer:

Plant Products Inc.

50 Hazelton Street
PO BOX 33
Leamington, Ontario, Canada
N8H 3W1

Name, address, and telephone number of the supplier:

Plant Products Inc.

50 Hazelton Street
PO BOX 33
Leamington, Ontario, Canada
N8H 3W1

Supplier's Telephone # : 519-326-9037 (Monday - Friday, 8:00 am - 5:00 pm, Eastern Standard Time)

24 Hr. Emergency Tel # : CANUTEC: 1-888-CANUTEC (1-888-226-8832)

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

Appearance: hygroscopic, white solid.
Odour - Odourless.

This material is not classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Label elements

Signal Word

Not applicable.

Hazard statement(s)

Not applicable.

Precautionary statement(s)

Not applicable.

Magnesium Sulphate, Technical Grade

PP-010

SDS Preparation Date (mm/dd/yyyy): 05/20/2016

Page 2 of 10

SAFETY DATA SHEET

Other hazards

No OSHA defined hazard classes.

Other hazards which do not result in classification:

Toxic fumes, gases or vapours may evolve on burning.

Product dust may be irritating to eyes, skin and respiratory system.

Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Chronic skin contact with low concentrations may cause dermatitis.

Ecological information:

Harmful to aquatic life. Avoid release to the environment.

See Section 12 for more environmental information.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance

<u>Chemical name</u>	<u>Common name and synonyms</u>	<u>CAS #</u>	<u>Concentration (% by weight)</u>
Magnesium Sulphate Heptahydrate	Magnesium Sulfate	10034-99-8	100%

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

- Ingestion* : Rinse mouth thoroughly. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.
- Inhalation* : Remove exposed person to fresh air immediately. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. Get medical advice/attention if you feel unwell.
- Skin contact* : Wash off with soap and plenty of water. Remove and wash contaminated clothing before re-use. Get medical attention if irritation develops and persists.
- Eye contact* : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical attention if irritation develops and persists.

Most important symptoms and effects, both acute and delayed

- : Product dust may be irritating to eyes, skin and respiratory system.
- Direct contact with eyes may cause temporary irritation. Symptoms may include tearing, redness and discomfort.
- Direct skin contact may cause temporary redness. Symptoms may include redness, itching and swelling.
- Inhalation of dusts may cause respiratory irritation. May cause coughing and breathing difficulties.
- Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.
- Chronic skin contact with low concentrations may cause dermatitis.

Indication of any immediate medical attention and special treatment needed

- : Provide general supportive measures and treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

- : Use media suitable for the surrounding area.

Unsuitable extinguishing media

- : Do not use a solid water stream as it may scatter and spread fire.

Magnesium Sulphate, Technical Grade

PP-010

SDS Preparation Date (mm/dd/yyyy): 05/20/2016

Page 3 of 10

SAFETY DATA SHEET

Special hazards arising from the substance or mixture / Conditions of flammability

- : Not considered flammable. Toxic fumes, gases or vapours may evolve on burning. When substances is heated above 700°C (1290°F), it releases oxygen, which will increase the burning rate of combustible materials. This product is not an oxidizer in its current state. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure.

Flammability classification (OSHA 29 CFR 1910.106)

- : Not flammable.

Hazardous combustion products

- : Sulfur oxides; Magnesium oxides; Oxygen.

Special protective equipment and precautions for firefighters

Protective equipment for fire-fighters

- : Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

Special fire-fighting procedures

- : Move containers from fire area if safe to do so. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses. Dike for water control.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

- : Keep people away from and upwind of spill/leak. Restrict access to area until completion of clean-up. All persons dealing with the clean-up should wear the appropriate chemically protective equipment. Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Keep material, as well as water from fire-fighting efforts, from entering streams, drains and other water systems.

Methods and material for containment and cleaning up

- : Ventilate the area. Remove all sources of ignition. Prevent further leakage or spillage if safe to do so. Vacuum or sweep up spilled material using a method that does not generate airborne dust. Place in clean, dry and labeled containers. Clean surface thoroughly to remove residual contamination. After cleaning, flush away traces with water. Do not flush into surface water or sanitary sewer system. Refer to Section 13 for disposal of contaminated material. Contact the proper local authorities.

Special spill response procedures

- : For 24-hour emergency assistance, call: 1-613-996-6666 (CANUTEC). If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8802).

EPA/CERCLA Reportable quantity (RQ):
None known.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

- : Avoid dust formation. Use in a well-ventilated area. Avoid breathing dust. Wear appropriate protective equipment. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Keep away from incompatibles. Keep away from extreme heat and flame. Keep containers closed when not in use. Empty containers retain residue and can be dangerous.

Magnesium Sulphate, Technical Grade

PP-010

SDS Preparation Date (mm/dd/yyyy): 05/20/2016

Page 4 of 10

SAFETY DATA SHEET

- Conditions for safe storage** : Store in a cool, dry, well ventilated area. Store away from incompatible materials. Keep containers tightly closed when not in use. Material is hygroscopic and may absorb moisture from air. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. No smoking. Inspect periodically for damage or leaks. Have appropriate fire extinguishers and spill clean-up equipment in or near storage area.
- Incompatible materials** : Strong acids; Oxidizing agents.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits:

<u>Chemical Name</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>	
	<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>
Magnesium Sulphate Heptahydrate	N/Av	N/Av	N/Av	N/Av

Exposure controls

Ventilation and engineering measures

- : Use only in well-ventilated areas. Apply technical measures to comply with the occupational exposure limits. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. In case of insufficient ventilation wear suitable respiratory equipment.

Respiratory protection

- : If engineering controls and work practices are not effective in controlling exposure to this material, then wear suitable approved respiratory protection. Use a NIOSH approved dust respirator if dust levels exceed exposure limits. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134) or CSA Z94.4-02. Advice should be sought from respiratory protection specialists.

Skin protection

- : Wear protective gloves. The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye / face protection

- : Chemical goggles should be worn if there is a potential for exposure to particles which could cause eye contact or injury.

Other protective equipment

- : Emergency showers and eyewash facilities should be nearby. Other equipment may be required depending on workplace standards.

General hygiene considerations

- : Avoid breathing dust. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. Wash hands thoroughly after using this product, and before eating, drinking or smoking. Remove and wash contaminated clothing before re-use. Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance** : hygroscopic, white solid
- Odour** : Odourless.
- Odour threshold** : N/Av
- pH** : 7.9 (10% Solution)(anhydrous)
- Melting/Freezing point** : Decomposes.
- Initial boiling point and boiling range** : Decomposes.
- Flash point** : N/Av
- Flashpoint (Method)** : N/Av

Magnesium Sulphate, Technical Grade

PP-010

SDS Preparation Date (mm/dd/yyyy): 05/20/2016

Page 5 of 10

SAFETY DATA SHEET

Evaporation rate (BuAe = 1) : N/Ap
Flammability (solid, gas) : Not considered flammable.
Lower flammable limit (% by vol.)
: N/Ap
Upper flammable limit (% by vol.)
: N/Ap
Oxidizing properties : None known.
Explosive properties : Not explosive
Vapour pressure : N/Ap
Vapour density : N/Ap
Relative density / Specific gravity
: 1.73 @68°F (20°C)
Solubility in water : Soluble (340 g/l@68°F (20°C))
Other solubility(ies) : Insoluble in organic solvents.
Partition coefficient: n-octanol/water or Coefficient of water/oil distribution
: N/Ap
Auto-ignition temperature : N/Ap
Decomposition temperature : 302-662°F (150-350°C) (approximately)
Viscosity : N/Ap
Volatiles (% by weight) : N/Ap
Volatile organic Compounds (VOC's)
: N/Ap
Absolute pressure of container
: N/Ap
Flame projection length : N/Ap
Other physical/chemical comments
: Not sensitive to static discharge or mechanical impact under normal conditions of use and handling.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not normally reactive.
Chemical stability : Stable under normal conditions. Material is hygroscopic and may absorb moisture from air.
Possibility of hazardous reactions
: Hazardous polymerization does not occur. No dangerous reaction known under conditions of normal use.
Conditions to avoid : Moisture. High humidity. Extreme heat.
Ensure adequate ventilation, especially in confined areas. Avoid contact with incompatible materials.
Incompatible materials : Strong acids, Oxidizing agents.
Hazardous decomposition products
: Sulfur oxides; Magnesium oxides; Oxygen.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

Routes of entry inhalation : YES
Routes of entry skin & eye : YES
Routes of entry Ingestion : YES

Magnesium Sulphate, Technical Grade
SDS Preparation Date (mm/dd/yyyy): 05/20/2016

PP-010
Page 6 of 10

SAFETY DATA SHEET

Routes of exposure skin absorption

: NO

Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation

: Inhalation of dusts may cause respiratory irritation. May cause coughing and breathing difficulties.

Sign and symptoms ingestion

: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Sign and symptoms skin

: Direct skin contact may cause temporary redness. Symptoms may include redness, itching and swelling.

Sign and symptoms eyes

: Direct eye contact may cause irritation. Symptoms may include redness, itching and swelling.

Potential Chronic Health Effects

: Chronic skin contact with low concentrations may cause dermatitis.

Mutagenicity

: Not expected to be mutagenic in humans.

Carcinogenicity

: No component of this product present at levels greater than, or equal to, 0.1% is identified as a carcinogen or potential carcinogen by ACGIH, IARC, OSHA, or NTP.

Reproductive effects & Teratogenicity

: Not expected to cause reproductive effects.

Sensitization to material

: Not expected to be a skin or respiratory sensitizer.

Specific target organ effects

: Not classified as a specific target organ toxicity-single exposure.
Not classified as specific target organ toxicity-repeated exposure.

Medical conditions aggravated by overexposure

: Pre-existing skin, eye and respiratory disorders.

Synergistic materials

: No information available.

Toxicological data

: Not classified for acute toxicity based on available data. See below for toxicological data on the substance.

<u>Chemical name</u>	<u>LC₅₀(4hr)</u>	<u>LD₅₀</u>	
	<u>inh, rat</u>	<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
Magnesium Sulphate Heptahydrate	N/Av	≥2000 mg/kg (anhydrous) (No mortality)	>2000 mg/kg (Read-across) (No mortality)

Other important toxicological hazards

: None reported by the manufacturer.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

: Harmful to aquatic life. The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters. See the following tables for the substance's ecotoxicity data.

Magnesium Sulphate, Technical Grade

PP-010

SDS Preparation Date (mm/dd/yyyy): 05/20/2016

Page 7 of 10

SAFETY DATA SHEET

Ecotoxicity data:

<u>Ingredients</u>	CAS No	Toxicity to Fish		
		LC50 / 96h	NOEC / 21 day	M Factor
Magnesium Sulphate Heptahydrate	10034-99-8	>96.4 mg/L (anhydrous) Rainbow trout	N/Av	None.

<u>Ingredients</u>	CAS No	Toxicity to Daphnia		
		EC50 / 48h	NOEC / 21 day	M Factor
Magnesium Sulphate Heptahydrate	10034-99-8	>88.7 mg/L (anhydrous) Daphnia magna (Water flea)	N/Av	None.

<u>Ingredients</u>	CAS No	Toxicity to Algae		
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor
Magnesium Sulphate Heptahydrate	10034-99-8	>99.2 mg/L/72hr (anhydrous) Green algae	N/Av	None.

Persistence and degradability

: Biodegradation is not applicable to inorganic substances.

Bioaccumulation potential

: Not expected to bioaccumulate.
See the following data for ingredient information.

<u>Components</u>	<u>Partition coefficient n-octanol/water (log Kow)</u>	<u>Bioconcentration factor (BCF)</u>
Magnesium Sulphate Heptahydrate (CAS 10034-99-8)	N/Av	N/Av

Mobility in soil

: There is no data available for this product.

Other Adverse Environmental effects

: No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

SECTION 13. DISPOSAL CONSIDERATIONS

Handling for Disposal

: Handle in accordance with good industrial hygiene and safety practice. Do not contaminate ponds, waterways or ditches with chemical or used container. Since emptied containers may retain product residue, follow label warnings even after container is emptied. Refer to protective measures listed in sections 7 and 8.

Methods of Disposal

: Dispose in accordance with all applicable federal, state, provincial and local regulations.

RCRA



: If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

Magnesium Sulphate, Technical Grade
SDS Preparation Date (mm/dd/yyyy): 05/20/2016

PP-010
Page 8 of 10

SAFETY DATA SHEET

SECTION 14. TRANSPORTATION INFORMATION

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
49CFR/DOT	None.	Not regulated.	not regulated	none	
49CFR/DOT Additional information	None.				
TDG	None.	Not regulated.	not regulated	none	
TDG Additional information	None.				

Special precautions for user : Keep away from extreme heat and flame. Appropriate advice on safety must accompany the package.

Environmental hazards : This substance does not meet the criteria for an environmentally hazardous substance according to the IMDG Code. See ECOLOGICAL INFORMATION, Section 12.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
: This information is not available.

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

Components listed below are present on the following U.S. Federal chemical lists:

<u>Ingredients</u>	CAS #	TSCA Inventory	CERCLA Reportable Quantity (RQ) (40 CFR 117.302):	SARA TITLE III: Sec. 302, Extremely Hazardous Substance, 40 CFR 355:	SARA TITLE III: Sec. 313, 40 CFR 372, Specific Toxic Chemical	
					Toxic Chemical	de minimus Concentration
Magnesium Sulphate Heptahydrate	10034-99-8	NL	N/Ap	N/Ap	No	N/Ap

SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes: None.

US State Right to Know Laws:

The following chemicals are specifically listed by individual States:

<u>Ingredients</u>	CAS #	California Proposition 65		State "Right to Know" Lists					
		Listed	Type of Toxicity	CA	MA	MN	NJ	PA	RI
Magnesium Sulphate Heptahydrate	10034-99-8	No	N/Ap	No	No	No	No	No	No

Canadian Information:

Magnesium Sulphate, Technical Grade

PP-010

SDS Preparation Date (mm/dd/yyyy): 05/20/2016

Page 9 of 10

SAFETY DATA SHEET

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

WHMIS information: Refer to Section 2 for a WHMIS Classification for this product.

International Information:

Components listed below are present on the following International Inventory list:

<u>Ingredients</u>	<u>CAS #</u>	<u>European EINECS</u>	<u>Australia AICS</u>	<u>Philippines PICCS</u>	<u>Japan ENCS</u>	<u>Korea KECI/KECL</u>	<u>China IECSC</u>	<u>NewZealand IOC</u>
Magnesium Sulphate Heptahydrate	10034-99-8	Not listed	Present	Present	(1)-467	Not listed	Present	May be used as a single component chemical under an appropriate group standard

SECTION 16. OTHER INFORMATION

Legend

- : ACGIH: American Conference of Governmental Industrial Hygienists
- AICS: Australian Inventory of Chemical Substances
- CA: California
- CAS: Chemical Abstract Services
- CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
- CFR: Code of Federal Regulations
- CSA: Canadian Standards Association
- EC50: Effective Concentration 50%.
- EINECS: European Inventory of Existing Commercial chemical Substances
- ENCS: Existing and New Chemical Substances
- EPA: Environmental Protection Agency
- IECSC: Inventory of Existing Chemical Substances
- Inh: Inhalation
- IOC: Inventory of Chemicals
- KECI: Korean Existing Chemicals Inventory
- KECL: Korean Existing Chemicals List
- LC: Lethal Concentration
- LD: Lethal Dose
- MA: Massachusetts
- MN: Minnesota
- N/Ap: Not Applicable
- N/Av: Not Available
- NIOSH: National Institute of Occupational Safety and Health
- NJ: New Jersey
- NOEC: No observable effect concentration
- NTP: National Toxicology Program
- OSHA: Occupational Safety and Health Administration
- PA: Pennsylvania
- PEL: Permissible exposure limit
- PICCS: Philippine Inventory of Chemicals and Chemical Substances
- RCRA: Resource Conservation and Recovery Act
- RI: Rhode Island
- SARA: Superfund Amendments and Reauthorization Act
- SDS: Safety Data Sheet / MSDS: Material Safety Data Sheet
- STEL: Short Term Exposure Limit
- TDG: Canadian Transportation of Dangerous Goods Act & Regulations

Magnesium Sulphate, Technical Grade

PP-010

SDS Preparation Date (mm/dd/yyyy): 05/20/2016

Page 10 of 10

SAFETY DATA SHEET

TLV: Threshold Limit Values
TSCA: Toxic Substance Control Act
TWA: Time Weighted Average
WHMIS: Workplace Hazardous Materials Identification System

References

- : 1. ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices (2015)
- 2. Canadian Centre for Occupational Health and Safety, CCHInfoWeb Databases, 2016 (Chempendium, RTECs, HSDB, INCHEM).
- 3. IARC Monographs. Overall Evaluation of Carcinogenicity
- 4. OECD - The Global Portal to Information on Chemical Substances - eChemPortal, 2016.
- 5. US EPA Title III List of Lists: March2015 Version
- 6. California Proposition 65 List: April 22, 2016 Version
- 7. European Chemicals Agency, Classification Legislation, 2015
- 8. Material Safety Data Sheet from manufacturer.

Preparation Date (mm/dd/yyyy)

: 05/20/2016

Other special considerations for handling

: Provide adequate information, instruction and training for operators.

<p>Prepared for: Direct all enquiries to: Plant Products, Inc. 50 Hazelton Street PO BOX 33 Leamington, ON, Canada N8H 3W1</p>	 PLANTPRODUCTS®
<p>Prepared by: ICC The Compliance Center Inc. Telephone: (888) 442-9628 (U.S.); (888) 977-4834 (Canada) http://www.thecompliancecenter.com</p>	 icc ComplianceCenter

DISCLAIMER

This Safety Data Sheet was prepared by ICC The Compliance Center Inc. using information provided by / obtained from Plant Products, Inc. and CCOHS' Web Information Service. The information in the Safety Data Sheet is offered for your consideration and guidance when exposed to this product. ICC The Compliance Center Inc. and Plant Products, Inc. expressly disclaim all expressed or implied warranties and assume no responsibilities for the accuracy or completeness of the data contained herein. The data in this SDS does not apply to use with any other product or in any other process.

This Safety Data Sheet may not be changed, or altered in any way without the expressed knowledge and permission of ICC The Compliance Center Inc. and Plant Products, Inc.

END OF DOCUMENT



Section 1: IDENTIFICATION

Product Name: Manganese Chelate
Synonyms: Not available.
Product Use: Fertilizer.
Restrictions on Use: Not available.
Manufacturer/Supplier: Plant Products Inc.
50 Hazelton Street
Leamington, Ontario N8H 1B8
Phone Number: 519-326-9037
Toll free number 1-800-387-2449 (English)
Toll free number 1-800-361-9184 (French)
Emergency Phone: 1-800-424-9300 (CHEMTREC, 24 hours)
Date of Preparation of SDS: December 19, 2018

Section 2: HAZARD(S) IDENTIFICATION

GHS INFORMATION

Classification: Combustible Dust, Category 1

LABEL ELEMENTS

Hazard None.

Pictogram(s):

Signal Word: Warning

Hazard May form combustible dust concentrations in air.

Statements:

Precautionary Statements

Prevention: Not applicable.

Response: Not applicable.

Storage: Not applicable.

Disposal: Not applicable.

Hazards Not Otherwise Classified: Not applicable.

Ingredients with Unknown Toxicity: None.

This material is considered hazardous by the OSHA Hazard Communication Standard, (29 CFR 1910.1200).

This material is considered hazardous by the Hazardous Products Regulations.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient(s)	Common name / Synonyms	CAS No.	% wt./wt.
---------------	---------------------------	---------	-----------

No hazardous ingredients are present at or above reportable levels.

Section 4: FIRST-AID MEASURES

Inhalation: If inhaled: Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Eye Contact: If in eyes: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Skin Contact: If on skin: Wash with plenty of water. Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

Ingestion: If swallowed: Call a poison center or doctor if you feel unwell. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.
Acute and delayed symptoms and effects: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

General Advice: In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

Note to Physicians: Symptoms may not appear immediately.

Section 5: FIRE-FIGHTING MEASURES

FLAMMABILITY AND EXPLOSION INFORMATION

May form combustible dust concentrations in air.

Sensitivity to Mechanical Impact: This material is not sensitive to mechanical impact.

Sensitivity to Static Discharge: In the form of dust, this material is sensitive to static discharge and may form explosive mixtures with air.

MEANS OF EXTINCTION

Suitable Extinguishing Media: Use appropriate extinguishing media for surrounding fire. Move containers from fire area if you can do it without risk.

Unsuitable Extinguishing Media: Not available.



Products of Combustion: Oxides of carbon. Oxides of nitrogen.

Protection of Firefighters: Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may cause pollution. Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

Section 6: ACCIDENTAL RELEASE MEASURES

Emergency Procedures: Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering.

Personal Precautions: Do not touch or walk through spilled material. Use personal protection recommended in Section 8.

Environmental Precautions: Keep out of drains, sewers, ditches, and waterways.

Methods for Containment: Do not flush to sewer or allow to enter waterways.

Methods for Clean-Up: Use explosion-proof equipment. Dust can be a fire or explosion hazard. Sweep up and shovel into suitable containers for disposal. Cleaning methods (e.g. compressed air) which can generate potentially combustible dust clouds should not be used.

Other Information: See Section 13 for disposal considerations.

Section 7: HANDLING AND STORAGE

Handling:
Do not swallow. Minimize dust generation and accumulation. Airborne dusts are potentially explosive. Avoid significant deposits of material, especially on horizontal surfaces, which may become airborne and form combustible dust clouds and may contribute to secondary explosions. Handling and processing operations should be conducted in accordance with 'best practices' (e.g. NFPA-654). Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. To avoid fire or explosion, ground and bond container and receiving equipment (and ground personnel) before transferring material. See Section 8 for information on Personal Protective Equipment.

Storage:
Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Store away from incompatible materials. See Section 10 for information on Incompatible Materials. Keep out of the reach of children.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines Component

Dust [CAS No. Not applicable]
ACGIH: 10 mg/m³ (TWA) (Inhalable.); 3 mg/m³ (TWA) (Respirable.); For Particles (Insoluble or Poorly Soluble) Not Otherwise Specified
OSHA: 15 mg/m³ (Total dust) (TWA), 5 mg/m³ (Respirable fraction) (TWA); For Particulates Not Otherwise Regulated (PNOR).

TWA: Time-Weighted Average



Engineering Controls:

It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen-deficient environment. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). Use explosion-proof electrical, ventilating, and lighting equipment.

PERSONAL PROTECTIVE EQUIPMENT (PPE)



Eye/Face Protection:

Wear safety glasses. Indirect vented, dust-tight goggles are required if dust is generated when handling this product. Use equipment for eye protection that meets the standards referenced by CSA Standard CAN/CSA-Z94.3-92 and OSHA regulations in 29 CFR 1910.133 for Personal Protective Equipment.

Hand Protection:

Wear protective gloves. Consult manufacturer specifications for further information.

Skin and Body Protection:

Wear protective clothing.

Respiratory Protection:

If engineering controls and ventilation are not sufficient to control exposure to below the allowable limits then an appropriate NIOSH/MSHA approved air-purifying respirator that meets the requirements of CSA Standard CAN/CSA-Z94.4-11, with particulate filter, or self-contained breathing apparatus must be used.

General Hygiene Considerations:

Handle according to established industrial hygiene and safety practices. Consult a competent industrial hygienist to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Granular solid.
Colour:	Off-white.
Odour:	Odourless.
Odour Threshold:	Not available.
Physical State:	Solid.
pH (1% solution in water):	6 to 7
Melting Point / Freezing Point:	Decomposes before melting.



Initial Boiling Point:	Not available.
Boiling Range:	Not available.
Flash Point:	Not available.
Evaporation Rate:	Not available.
Flammability (solid, gas):	See Section 5.
Lower Flammability Limit:	≥ 40 g/m ³
Upper Flammability Limit:	Not available.
Vapor Pressure:	Not available.
Vapor Density:	Not available.
Relative Density:	Not available.
Solubilities:	Water solubility: ~ 800 g/L.
Partition Coefficient: n-Octanol/Water:	log Pow < 0
Auto-ignition Temperature:	≥ 200 °C (392 °F) (Method: Auto-ignition of a 5 mm dust layer according to EN 50281-2-1)
Decomposition Temperature:	Not available.
Viscosity:	Not available.
Percent Volatile, wt. %:	Not available.
VOC content, wt. %:	Not available.
Bulk Density:	600 to 800 kg/m ³
Coefficient of Water/Oil Distribution:	Not available.

Section 10: STABILITY AND REACTIVITY

Reactivity:	Contact with incompatible materials. Exposure to heat.
Chemical Stability:	Stable under normal storage conditions.
Possibility of Hazardous Reactions:	None known.
Conditions to Avoid:	Contact with incompatible materials. Exposure to heat.
Incompatible Materials:	None known.
Hazardous Decomposition Products:	Not available.

Section 11: TOXICOLOGICAL INFORMATION

EFFECTS OF ACUTE EXPOSURE

Product Toxicity

Oral:	Not available.
Dermal:	Not available.
Inhalation:	Not available.



Component Toxicity

No LC50 or LD50 listed for the components of this product.

Likely Routes of Exposure: Eye contact. Skin contact. Inhalation. Ingestion.

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system.

Symptoms (including delayed and immediate effects)

Inhalation: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Eye: May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Skin: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

Ingestion: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Skin Sensitization: Not available.

Respiratory Sensitization: Not available.

Medical Conditions Aggravated By Exposure: Not available.

EFFECTS OF CHRONIC EXPOSURE (from short and long-term exposure)

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system.

Chronic Effects: Prolonged or repeated contact may dry skin and cause irritation.

Carcinogenicity: This product does not contain any carcinogens or potential carcinogens above reportable thresholds as listed by ACGIH, IARC, OSHA, or NTP.

Mutagenicity: Not available.

Reproductive Effects: Not available.

Developmental Effects

Teratogenicity: Not available.

Embryotoxicity: Not available.

Toxicologically Synergistic Materials: Not available.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity: Not available.

Persistence / Degradability: Not available.

Bioaccumulation / Accumulation: Not available.

Mobility in Environment: Not available.

Other Adverse Effects: Not available.

Section 13: DISPOSAL CONSIDERATIONS

Disposal Instructions: Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

Section 14: TRANSPORT INFORMATION

U.S. Department of Transportation (DOT)

Proper Shipping Name: Not regulated.
Class: Not applicable.
UN Number: Not applicable.
Packing Group: Not applicable.
Label Code: Not applicable.

Canada Transportation of Dangerous Goods (TDG)

Proper Shipping Name: Not regulated.
Class: Not applicable.
UN Number: Not applicable.
Packing Group: Not applicable.
Label Code: Not applicable.

Section 15: REGULATORY INFORMATION

Federal Regulations

United States

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SARA Title III

No components are listed.

State Regulations

Massachusetts

US Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

No components are listed.

New Jersey

US New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

No components are listed.



PLANTPRODUCTS®

SAFETY DATA SHEET

Manganese Chelate

Date of Preparation: December 19, 2018

Pennsylvania

US Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

No components are listed.

California

California Prop 65: This product does not contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Section 16: OTHER INFORMATION

Disclaimer:

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for their own particular use.

Date of Preparation of SDS: December 19, 2018

Version: 1.0

GHS SDS Prepared by: **Aegis Regulatory Inc.**

Phone: (519) 488-0351

www.aegisreg.com

Section 1: IDENTIFICATION

Product Name: Manganese Sulphate
Synonyms: Not available.
Product Use: Fertilizer.
Restrictions on Use: Not available.
Manufacturer/Supplier: Plant Products Inc.
50 Hazelton Street
Leamington, Ontario N8H 1B8
Phone Number: 519-326-9037
Toll free number 1-800-387-2449 (English)
Toll free number 1-800-361-9184 (French)
Emergency Phone: 1-800-424-9300 (CHEMTREC, 24 hours)
Date of Preparation of SDS: December 19, 2018

Section 2: HAZARD(S) IDENTIFICATION

GHS INFORMATION

Classification: Eye Damage, Category 1
Specific Target Organ Toxicity (Repeated Exposure), Category 2

LABEL ELEMENTS

Hazard

Pictogram(s):



Signal Word: Danger

Hazard Statements: Causes serious eye damage.
May cause damage to organs through prolonged or repeated exposure.

Precautionary Statements

Prevention: Do not breathe dust or fumes.
Wear protective gloves, protective clothing and eye protection.

Response: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER or doctor.
Get medical advice/attention if you feel unwell.

Storage: Not applicable.

Disposal: Dispose of contents/container in accordance with applicable regional, national and local laws and regulations.

Hazards Not Otherwise Classified: Not applicable.



Ingredients with Unknown Toxicity: 100% of this product mixture consists of ingredient(s) of unknown acute toxicity.

This material is considered hazardous by the OSHA Hazard Communication Standard, (29 CFR 1910.1200).

This material is considered hazardous by the Hazardous Products Regulations.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Ingredient(s)	Common name / Synonyms	CAS No.	% wt./wt.
Manganese sulfate monohydrate	Not available.	10034-96-5	100

Impurities / Stabilizing additives: None known.

Section 4: FIRST-AID MEASURES

Inhalation: If inhaled: Call a poison center or doctor if you feel unwell.

Acute and delayed symptoms and effects: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Eye Contact: If in eyes: Rinse cautiously with water for at least 30 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor.

Acute and delayed symptoms and effects: Causes serious eye damage. Signs/symptoms may include cloudy appearance of the cornea, chemical burns, severe pain, tearing, ulcerations, significantly impaired vision or complete loss of vision.

Skin Contact: If on skin: Wash with plenty of water. Call a poison center or doctor if you feel unwell.

Acute and delayed symptoms and effects: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

Ingestion: If swallowed: Call a poison center or doctor if you feel unwell. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

Acute and delayed symptoms and effects: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

General Advice: In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

Note to Physicians: Symptoms may not appear immediately.

Section 5: FIRE-FIGHTING MEASURES

FLAMMABILITY AND EXPLOSION INFORMATION

Containers may explode when heated.

If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

Fire involving Tanks: Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks engulfed in fire.

Sensitivity to Mechanical Impact: This material is not sensitive to mechanical impact.

Sensitivity to Static Discharge: This material is not sensitive to static discharge.

MEANS OF EXTINCTION

Suitable Extinguishing Media: Small Fire: Dry chemical, CO₂, water spray or regular foam.
Large Fire: Water spray, fog or regular foam. Do not scatter spilled material with high pressure water streams. Move containers from fire area if you can do it without risk. Dike fire-control water for later disposal.

Unsuitable Extinguishing Media: Not available.

Products of Combustion: Oxides of sulphur. Manganese oxide.

Protection of Firefighters: Inhalation of material may be harmful. Contact may cause burns to skin and eyes. Fire may produce irritating, corrosive and/or toxic gases. Some liquids produce vapors that may cause dizziness or suffocation. Runoff from fire control may cause pollution. Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

Section 6: ACCIDENTAL RELEASE MEASURES

Emergency Procedures: As an immediate precautionary measure, isolate spill or leak area in all directions for at least 25 meters (75 feet). Keep unauthorized personnel away. Stay upwind.

Personal Precautions: Do not touch or walk through spilled material. Use personal protection recommended in Section 8.

Environmental Precautions: Prevent entry into waterways, sewers, basements or confined areas.

Methods for Containment: Stop leak if you can do it without risk. Prevent dust cloud.

Methods for Clean-Up: Sweep up and shovel into suitable containers for disposal.

Other Information: See Section 13 for disposal considerations.

Section 7: HANDLING AND STORAGE

Handling:

Do not swallow. Do not breathe dust or fumes. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. See Section 8 for information on Personal Protective Equipment.

Storage:

Store locked up. Store away from incompatible materials. See Section 10 for information on Incompatible Materials. Keep out of the reach of children.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

**Exposure Guidelines
Component**

Manganese sulfate monohydrate [CAS No. 10034-96-5]

ACGIH: 10 mg/m³ (TWA) (Inhalable.); 3 mg/m³ (TWA) (Respirable.); For Particles (Insoluble or Poorly Soluble) Not Otherwise Specified

OSHA: 15 mg/m³ (Total dust) (TWA), 5 mg/m³ (Respirable fraction) (TWA); For Particulates Not Otherwise Regulated (PNOR).

TWA: Time-Weighted Average

Engineering Controls: Not normally required.

PERSONAL PROTECTIVE EQUIPMENT (PPE)



Eye/Face Protection:

Wear chemical safety goggles. Indirect vented, dust-tight goggles are required if dust is generated when handling this product. Ensure that eyewash stations and safety showers are close to the workstation location. Use equipment for eye protection that meets the standards referenced by CSA Standard CAN/CSA-Z94.3-92 and OSHA regulations in 29 CFR 1910.133 for Personal Protective Equipment.

Hand Protection:

Wear protective gloves. Consult manufacturer specifications for further information.

Skin and Body Protection:

Wear protective clothing.

Respiratory Protection:

If engineering controls and ventilation are not sufficient to control exposure to below the allowable limits then an appropriate NIOSH/MSHA approved air-purifying respirator that meets the requirements of CSA Standard CAN/CSA-Z94.4-11, with particulate filter, or self-contained breathing apparatus must be used.

General Hygiene Considerations:

Handle according to established industrial hygiene and safety practices. Consult a competent industrial hygienist to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Powder, dust.
Colour:	Violet.
Odour:	Odourless.
Odour Threshold:	Not available.
Physical State:	Solid.
pH:	Not available.
Melting Point / Freezing Point:	Not available.
Initial Boiling Point:	850 °C (1562 °F) at 160 mmHg
Boiling Range:	Not available.
Flash Point:	Not available.
Evaporation Rate:	Not available.
Flammability (solid, gas):	See Section 5.
Lower Flammability Limit:	Not available.
Upper Flammability Limit:	Not available.
Vapor Pressure:	Not available.
Vapor Density:	Not available.
Relative Density:	2.95 (Water = 1)
Solubilities:	Soluble in water.
Partition Coefficient: n-Octanol/Water:	Not available.
Auto-ignition Temperature:	Not available.
Decomposition Temperature:	Not available.
Viscosity:	Not available.
Percent Volatile, wt. %:	Not available.
VOC content, wt. %:	Not available.
Density:	Not available.
Coefficient of Water/Oil Distribution:	Not available.

Section 10: STABILITY AND REACTIVITY

Reactivity:	Contact with incompatible materials. Exposure to heat.
Chemical Stability:	Stable under normal storage conditions.
Possibility of Hazardous Reactions:	None known.



Conditions to Avoid: Contact with incompatible materials. Exposure to heat.

Incompatible Materials: Strong oxidizers. Metals.

Hazardous Decomposition Products: Not available.

Section 11: TOXICOLOGICAL INFORMATION

EFFECTS OF ACUTE EXPOSURE

Product Toxicity

Oral: Not available.

Dermal: Not available.

Inhalation: Not available.

Component Toxicity

Component	CAS No.	LD ₅₀ oral	LD ₅₀ dermal	LC ₅₀
Manganese sulfate monohydrate	10034-96-5	Not available.	Not available.	Not available.

Likely Routes of Exposure: Eye contact. Skin contact. Inhalation. Ingestion.

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system.

Symptoms (including delayed and immediate effects)

Inhalation: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Eye: Causes serious eye damage. Signs/symptoms may include cloudy appearance of the cornea, chemical burns, severe pain, tearing, ulcerations, significantly impaired vision or complete loss of vision.

Skin: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

Ingestion: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Skin Sensitization: Not available.

Respiratory Sensitization: Not available.

Medical Conditions Not available.

Aggravated By Exposure:

EFFECTS OF CHRONIC EXPOSURE (from short and long-term exposure)

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system. Lungs. Blood. Kidneys. Central nervous system.

Chronic Effects: Hazardous by OSHA/WHMIS criteria. May cause chronic effects. Prolonged or repeated contact may dry skin and cause irritation. Chronic manganese poisoning can result from excessive inhalation and exposure of Manganese sulfate and involves impairment of the central nervous system. Early symptoms are sluggishness, sleepiness, and weakness in the legs. Advanced cases have shown fixed facial

expression, emotional disturbances, spastic gait, and falling. Illness closely resembles Parkinson's Disease. Kidney effects, blood changes and manganese psychosis also may occur as a result of chronic exposure. Chronic inhalation exposure can cause lung damage.

- Carcinogenicity:** This product does not contain any carcinogens or potential carcinogens above reportable thresholds as listed by ACGIH, IARC, OSHA, or NTP.
- Mutagenicity:** Not available.
- Reproductive Effects:** Not available.
- Developmental Effects**
- Teratogenicity:** Not available.
- Embryotoxicity:** Not available.
- Toxicologically Synergistic Materials:** Not available.

Section 12: ECOLOGICAL INFORMATION

- Ecotoxicity:** Not available.
- Persistence / Degradability:** Not available.
- Bioaccumulation / Accumulation:** Not available.
- Mobility in Environment:** Not available.
- Other Adverse Effects:** Not available.

Section 13: DISPOSAL CONSIDERATIONS

- Disposal Instructions:** Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

Section 14: TRANSPORT INFORMATION

U.S. Department of Transportation (DOT)

- Proper Shipping Name:** UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Manganese sulphate), 9, PG III
- Class:** 9
- UN Number:** UN3077
- Packing Group:** III
- Label Code:**





PLANTPRODUCTS®

SAFETY DATA SHEET

Manganese Sulphate

Date of Preparation: December 19, 2018

Canada Transportation of Dangerous Goods (TDG)

Proper Shipping Name: UN3077, ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Manganese sulphate), 9, PG III

Class: 9

UN Number: UN3077

Packing Group: III

Label Code:



Section 15: REGULATORY INFORMATION

Chemical Inventories

US (TSCA)

The components of this product are in compliance with the chemical notification requirements of TSCA.

Canada (DSL)

The components of this product are in compliance with the chemical notification requirements of the NSN Regulations under CEPA, 1999.

Federal Regulations

United States

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SARA Title III

No components are listed.

State Regulations

Massachusetts

US Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

No components are listed.

New Jersey

US New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

No components are listed.

Pennsylvania

US Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

No components are listed.



PLANTPRODUCTS®

SAFETY DATA SHEET

Manganese Sulphate

Date of Preparation: December 19, 2018

California

California Prop 65: This product does not contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Section 16: OTHER INFORMATION

Disclaimer:

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for their own particular use.

Date of Preparation of SDS: December 19, 2018

Version: 1.0

GHS SDS Prepared by: **Aegis Regulatory Inc.**

Phone: (519) 488-0351

www.aegisreg.com

Section 1: IDENTIFICATION

Product Name: Mono Ammonium Phosphate
Synonyms: Not available.
Product Use: Fertilizer.
Restrictions on Use: Not available.
Manufacturer/Supplier: Plant Products Inc.
50 Hazelton Street
Leamington, Ontario N8H 1B8
Phone Number: 519-326-9037
Toll free number 1-800-387-2449 (English)
Toll free number 1-800-361-9184 (French)
Emergency Phone: 1-800-424-9300 (CHEMTREC, 24 hours)
Date of Preparation of SDS: December 19, 2018

Section 2: HAZARD(S) IDENTIFICATION

GHS INFORMATION

Classification: Not hazardous according to OSHA criteria (29 CFR 1910.1200).
Not hazardous according to WHMIS 2015 criteria.

LABEL ELEMENTS

Hazard None.

Pictogram(s):

Signal Word: None.

Hazard Not applicable.

Statements:

Precautionary Statements

Prevention: Not applicable.

Response: Not applicable.

Storage: Not applicable.

Disposal: Not applicable.

Hazards Not Otherwise Classified: Not applicable.

Ingredients with Unknown Toxicity: None.

This material is not considered hazardous by the OSHA Hazard Communication Standard, (29 CFR 1910.1200).

This material is not considered hazardous by the Hazardous Products Regulations.



Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient(s)	Common name / Synonyms	CAS No.	% wt./wt.
Phosphoric acid, ammonium salt (1:1)	Ammonium dihydrogen phosphate	7722-76-1	100

Impurities / Stabilizing additives: None known.

Section 4: FIRST-AID MEASURES

- Inhalation:** If inhaled: Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.
- Eye Contact:** If in eyes: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.
- Skin Contact:** If on skin: Wash with plenty of water. Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.
- Ingestion:** If swallowed: Call a poison center or doctor if you feel unwell. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.
Acute and delayed symptoms and effects: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.
- General Advice:** In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).
- Note to Physicians:** Symptoms may not appear immediately.

Section 5: FIRE-FIGHTING MEASURES

FLAMMABILITY AND EXPLOSION INFORMATION
Not flammable or combustible by OSHA/WHMIS criteria.

Sensitivity to Mechanical Impact: This material is not sensitive to mechanical impact.
Sensitivity to Static Discharge: This material is not sensitive to static discharge.

MEANS OF EXTINCTION
Suitable Extinguishing Media: Use appropriate extinguishing media for surrounding fire. Move containers from fire area if you can do it without risk.
Unsuitable Extinguishing Media: Not available.



Products of Combustion: Oxides of phosphorus. Oxides of nitrogen. Ammonia.

Protection of Firefighters: Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may cause pollution. Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

Section 6: ACCIDENTAL RELEASE MEASURES

Emergency Procedures: Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering.

Personal Precautions: Do not touch or walk through spilled material. Use personal protection recommended in Section 8.

Environmental Precautions: Keep out of drains, sewers, ditches, and waterways.

Methods for Containment: Do not flush to sewer or allow to enter waterways.

Methods for Clean-Up: Avoid generating dust. Sweep up and shovel into suitable containers for disposal.

Other Information: See Section 13 for disposal considerations.

Section 7: HANDLING AND STORAGE

Handling:
Do not swallow. See Section 8 for information on Personal Protective Equipment.

Storage:
Store away from incompatible materials. See Section 10 for information on Incompatible Materials. Keep out of the reach of children.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

**Exposure Guidelines
Component**

Ammonium dihydrogen phosphate [CAS No. 7722-76-1]
ACGIH: 10 mg/m³ (TWA) (Inhalable.); 3 mg/m³ (TWA) (Respirable.); For Particles (Insoluble or Poorly Soluble) Not Otherwise Specified
OSHA: 15 mg/m³ (Total dust) (TWA), 5 mg/m³ (Respirable fraction) (TWA); For Particulates Not Otherwise Regulated (PNOR).

TWA: Time-Weighted Average

Engineering Controls: Not normally required.

PERSONAL PROTECTIVE EQUIPMENT (PPE)



Eye/Face Protection: Wear safety glasses. Indirect vented, dust-tight goggles are required if dust is generated when handling this product. Use equipment for eye protection that meets the standards referenced by CSA Standard CAN/CSA-Z94.3-92 and OSHA

regulations in 29 CFR 1910.133 for Personal Protective Equipment.

- Hand Protection:** Wear protective gloves. Nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), polyvinylchloride (0.7 mm) gloves are recommended. Consult manufacturer specifications for further information.
- Skin and Body Protection:** Wear protective clothing.
- Respiratory Protection:** If engineering controls and ventilation are not sufficient to control exposure to below the allowable limits then an appropriate NIOSH/MSHA approved air-purifying respirator that meets the requirements of CSA Standard CAN/CSA-Z94.4-11, with particulate filter, or self-contained breathing apparatus must be used.
- General Hygiene Considerations:** Handle according to established industrial hygiene and safety practices. Consult a competent industrial hygienist to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	White crystalline solid.
Colour:	White.
Odour:	Odourless.
Odour Threshold:	Not available.
Physical State:	Solid.
pH (10 g/L):	4.3 to 4.5 at 20 °C (68 °F)
Melting Point / Freezing Point:	197 °C (386.6 °F)
Initial Boiling Point:	The substance decomposes before boiling.
Boiling Range:	Not available.
Flash Point:	Not available.
Evaporation Rate:	Not available.
Flammability (solid, gas):	See Section 5.
Lower Flammability Limit:	Not available.
Upper Flammability Limit:	Not available.
Vapor Pressure:	Not available.
Vapor Density:	Not available.
Relative Density:	1.81 (Water = 1)
Solubilities:	Water solubility: 370 g/L at 25 °C (77 °F).



Partition Coefficient: n-Octanol/Water: Not available.

Auto-ignition Temperature: Product is not self-igniting.

Decomposition Temperature: > 197 °C (386.6 °F)

Viscosity: Not available.

Percent Volatile, wt. %: Not available.

VOC content, wt. %: Not available.

Bulk Density: 1100 kg/m³ at 20 °C (68 °F)

Coefficient of Water/Oil Distribution: Not available.

Section 10: STABILITY AND REACTIVITY

Reactivity: Contact with incompatible materials. Exposure to heat.

Chemical Stability: Stable under normal storage conditions.

Possibility of Hazardous Reactions: None known.

Conditions to Avoid: Contact with incompatible materials. Exposure to heat.

Incompatible Materials: Acids. Bases. Oxidizers. Copper. Copper alloys.

Hazardous Decomposition Products: Not available.

Section 11: TOXICOLOGICAL INFORMATION

EFFECTS OF ACUTE EXPOSURE

Product Toxicity

Oral: Not available.

Dermal: Not available.

Inhalation: Not available.

Component Toxicity

Component	CAS No.	LD ₅₀ oral	LD ₅₀ dermal	LC ₅₀
Ammonium dihydrogen phosphate	7722-76-1	> 2000 mg/kg (rat)	> 5000 mg/kg (rat)	> 5.0 mg/L (rat); 4H

Likely Routes of Exposure: Eye contact. Skin contact. Inhalation. Ingestion.

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system.

Symptoms (including delayed and immediate effects)

Inhalation: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Eye: May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.



Skin: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

Ingestion: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Skin Sensitization: Not available.

Respiratory Sensitization: Not available.

Medical Conditions Not available.

Aggravated By Exposure:

EFFECTS OF CHRONIC EXPOSURE (from short and long-term exposure)

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system.

Chronic Effects: Prolonged or repeated contact may dry skin and cause irritation.

Carcinogenicity: This product does not contain any carcinogens or potential carcinogens above reportable thresholds as listed by ACGIH, IARC, OSHA, or NTP.

Mutagenicity: Not available.

Reproductive Effects: Not available.

Developmental Effects

Teratogenicity: Not available.

Embryotoxicity: Not available.

Toxicologically Synergistic Materials: Not available.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity: Algae: EC50 (48 h) > 100 mg/L, 72 hr (OECD 201, freshwater);
NOEC > 100 mg/L;
Oncorhynchus mykiss: LC50 > 85.9 mg/L, 96 hr (OECD 203, freshwater).

Persistence / Degradability: Not available.

Bioaccumulation / Accumulation: Not available.

Mobility in Environment: Not available.

Other Adverse Effects: Not available.

Section 13: DISPOSAL CONSIDERATIONS

Disposal Instructions: Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

Section 14: TRANSPORT INFORMATION

U.S. Department of Transportation (DOT)

Proper Shipping Name: Not regulated.
Class: Not applicable.
UN Number: Not applicable.
Packing Group: Not applicable.
Label Code: Not applicable.

Canada Transportation of Dangerous Goods (TDG)

Proper Shipping Name: Not regulated.
Class: Not applicable.
UN Number: Not applicable.
Packing Group: Not applicable.
Label Code: Not applicable.

Section 15: REGULATORY INFORMATION

Chemical Inventories

US (TSCA)

The components of this product are in compliance with the chemical notification requirements of TSCA.

Canada (DSL)

The components of this product are in compliance with the chemical notification requirements of the NSN Regulations under CEPA, 1999.

Federal Regulations

United States

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SARA Title III

No components are listed.

State Regulations

Massachusetts

US Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

No components are listed.

New Jersey

US New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

No components are listed.



PLANTPRODUCTS®

SAFETY DATA SHEET

Mono Ammonium Phosphate

Date of Preparation: December 19, 2018

Pennsylvania

US Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

No components are listed.

California

California Prop 65: This product does not contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Section 16: OTHER INFORMATION

Disclaimer:

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for their own particular use.

Date of Preparation of SDS: December 19, 2018

Version: 1.0

GHS SDS Prepared by: **Aegis Regulatory Inc.**

Phone: (519) 488-0351

www.aegisreg.com



Plant Products Inc.
50 Hazelton Street
PO BOX 33
Leamington, Ontario N8H 3W1
Canada

Monopotassium Phosphate

PP-011

SDS Preparation Date (mm/dd/yyyy): 06/01/2016

Page 1 of 10

SAFETY DATA SHEET

SECTION 1. IDENTIFICATION

Product identifier used on the label

: **Monopotassium Phosphate**

Product Code(s) : MKP

Recommended use of the chemical and restrictions on use

: Fertilizer, horticultural chemical.
Use pattern: professional use
Recommended restrictions: None known.

Chemical family : Inorganic fertilizer

Name, address, and telephone number of the manufacturer:

Plant Products Inc.

50 Hazelton Street
PO BOX 33
Leamington, Ontario, Canada
N8H 3W1

Name, address, and telephone number of the supplier:

Plant Products Inc.

50 Hazelton Street
PO BOX 33
Leamington, Ontario, Canada
N8H 3W1

Supplier's Telephone # : 519-326-9037 (Monday - Friday, 8:00 am - 5:00 pm, Eastern Standard Time)

24 Hr. Emergency Tel # : CANUTEC: 1-888-CANUTEC (1-888-226-8832)

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

Appearance: white, granular - crystalline, hygroscopic solid.

Odour: Odourless.

This material is not classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Label elements

Signal Word

Not applicable.

Hazard statement(s)

Not applicable.

Precautionary statement(s)

Not applicable.

Monopotassium Phosphate

PP-011

SDS Preparation Date (mm/dd/yyyy): 06/01/2016

Page 2 of 10

SAFETY DATA SHEET

Other hazards

No OSHA defined hazard classes.

Other hazards which do not result in classification:

Toxic fumes, gases or vapours may evolve on burning.

Solutions may be corrosive to metals.

Product dust may be irritating to eyes, skin and respiratory system.

Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Prolonged inhalation may cause susceptibility to respiratory illness from continued irritation.

Chronic skin contact with low concentrations may cause dermatitis.

Ecological information:

Not expected to be harmful to aquatic organisms. Avoid release to the environment.

See Section 12 for more environmental information.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance

<u>Chemical name</u>	<u>Common name and synonyms</u>	<u>CAS #</u>	<u>Concentration (% by weight)</u>
Dihydrogen potassium phosphate	Phosphoric acid, Monopotassium salt; MKP	7778-77-0	100%

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

- Ingestion* : Rinse mouth thoroughly. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.
- Inhalation* : Remove exposed person to fresh air immediately. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. Get medical advice/attention if you feel unwell.
- Skin contact* : Wash off with soap and plenty of water. Remove and wash contaminated clothing before re-use. Get medical attention if irritation develops and persists.
- Eye contact* : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical attention if irritation develops and persists.

Most important symptoms and effects, both acute and delayed

- : Inhalation of dusts may cause respiratory irritation. May cause coughing and breathing difficulties.

Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Direct skin contact may cause temporary redness. Symptoms may include redness, itching and swelling.

Direct eye contact may cause irritation. Symptoms may include redness, itching and swelling.

Indication of any immediate medical attention and special treatment needed

- : Provide general supportive measures and treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

- : Use media suitable for the surrounding area.

Monopotassium Phosphate

PP-011

SDS Preparation Date (mm/dd/yyyy): 06/01/2016

Page 3 of 10

SAFETY DATA SHEET

Unsuitable extinguishing media

- : Do not use a solid water stream as it may scatter and spread fire.

Special hazards arising from the substance or mixture / Conditions of flammability

- : Not considered flammable. Toxic fumes, gases or vapours may evolve on burning. Decomposes at high temperatures. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure.

Flammability classification (OSHA 29 CFR 1910.106)

- : Not flammable.

Hazardous combustion products

- : Phosphorus oxides; Phosphine; Other irritating fumes and smoke.

Special protective equipment and precautions for firefighters

Protective equipment for fire-fighters

- : Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode.

Special fire-fighting procedures

- : Move containers from fire area if safe to do so. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses. Dike for water control.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

- : Restrict access to area until completion of clean-up. Keep people away from and upwind of spill/leak. All persons dealing with the clean-up should wear the appropriate chemically protective equipment. Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Keep material, as well as water from fire-fighting efforts, from entering streams, drains and other water systems.

Methods and material for containment and cleaning up

- : Ventilate the area. Remove all sources of ignition. Prevent further leakage or spillage if safe to do so. Vacuum or sweep up spilled material using a method that does not generate airborne dust. Place in clean, dry and labeled containers. Clean surface thoroughly to remove residual contamination. After cleaning, flush away traces with water. Do not flush into surface water or sanitary sewer system. Refer to Section 13 for disposal of contaminated material. Contact the proper local authorities.

Special spill response procedures

- : For 24-hour emergency assistance, call: 1-613-996-6666 (CANUTEC). If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8802).

EPA/CERCLA Reportable quantity (RQ):
None known.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

- : Avoid dust formation. Use in a well-ventilated area. Avoid breathing dust. Wear appropriate protective equipment. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Keep away from incompatibles. Solutions may be corrosive to metals. Keep away from extreme heat and flame. Keep containers closed when not in use. Empty containers retain residue and can be dangerous.

Monopotassium Phosphate

PP-011

SDS Preparation Date (mm/dd/yyyy): 06/01/2016

Page 4 of 10

SAFETY DATA SHEET

- Conditions for safe storage** : Store in a cool, dry, well ventilated area. Store away from incompatible materials. Material is hygroscopic and may absorb moisture from air. Keep containers dry and tightly closed to avoid moisture absorption and contamination. Solutions may be corrosive to metals. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Keep away from heat and sources of ignition. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. No smoking. Inspect periodically for damage or leaks. Have appropriate fire extinguishers and spill clean-up equipment in or near storage area.
- Incompatible materials** : Strong acids; Strong bases; Oxidizing agents.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<u>Exposure Limits:</u>				
<u>Chemical Name</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>	
	<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>
Dihydrogen potassium phosphate	N/Av	N/Av	N/Av	N/Av

Exposure controls

Ventilation and engineering measures

- : Use only in well-ventilated areas. Apply technical measures to comply with the occupational exposure limits. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. In case of insufficient ventilation wear suitable respiratory equipment.

Respiratory protection

- : If engineering controls and work practices are not effective in controlling exposure to this material, then wear suitable approved respiratory protection. Use a NIOSH approved dust respirator if dust levels exceed exposure limits. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134) or CSA Z94.4-02. Advice should be sought from respiratory protection specialists.

Skin protection

- : Wear protective gloves. The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye / face protection

- : Chemical goggles should be worn if there is a potential for exposure to particles which could cause eye contact or injury.

Other protective equipment

- : Emergency showers and eyewash facilities should be nearby. Other equipment may be required depending on workplace standards.

General hygiene considerations

- : Avoid breathing dust. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. Wash hands thoroughly after using this product, and before eating, drinking or smoking. Remove and wash contaminated clothing before re-use. Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance** : white, granular - crystalline, hygroscopic solid
- Odour** : Odourless.
- Odour threshold** : N/Av
- pH** : 4.2-4.5 (208 g/l @ 68°F / 20°C)
- Melting/Freezing point** : 487°F / 252.6°C Melting point
- Initial boiling point and boiling range** : >842°F / >450°C
- Flash point** : N/Av

Monopotassium Phosphate

PP-011

SDS Preparation Date (mm/dd/yyyy): 06/01/2016

Page 5 of 10

SAFETY DATA SHEET

Flashpoint (Method) : N/Ap
Evaporation rate (BuAe = 1) : N/Ap
Flammability (solid, gas) : Not considered flammable.
Lower flammable limit (% by vol.)
: N/Ap
Upper flammable limit (% by vol.)
: N/Ap
Oxidizing properties : None known.
Explosive properties : Not explosive
Vapour pressure : Does not form vapours at normal room temperatures.
Vapour density : N/Ap
Relative density / Specific gravity
: 2.34 g/cm³
Solubility in water : Soluble (208 g/l @ 68°F / 20°C)
Other solubility(ies) : N/Av
Partition coefficient: n-octanol/water or Coefficient of water/oil distribution
: N/Ap
Auto-ignition temperature : N/Ap
Decomposition temperature : >842°F / >450°C
Viscosity : N/Ap
Volatiles (% by weight) : N/Ap
Volatile organic Compounds (VOC's)
: N/Ap
Absolute pressure of container
: N/Ap
Flame projection length : N/Ap
Other physical/chemical comments
: Not sensitive to static discharge or mechanical impact under normal conditions of use and handling.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not normally reactive. Solutions may be corrosive to metals.
Chemical stability : Stable under normal conditions. Material is hygroscopic and may absorb moisture from air. Decomposes on heating.
Possibility of hazardous reactions
: Hazardous polymerization does not occur. No dangerous reaction known under conditions of normal use.
Conditions to avoid : Moisture. High humidity. Extreme heat.
Ensure adequate ventilation, especially in confined areas. Avoid contact with incompatible materials.
Incompatible materials : Strong acids; Strong bases; Oxidizing agents.
Hazardous decomposition products
: Phosphorus oxides; Phosphine.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

Routes of entry inhalation : YES
Routes of entry skin & eye : YES
Routes of entry Ingestion : YES

Monopotassium Phosphate

PP-011

SDS Preparation Date (mm/dd/yyyy): 06/01/2016

Page 6 of 10

SAFETY DATA SHEET

Routes of exposure skin absorption

: NO

Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation

: Inhalation of dusts may cause respiratory irritation. May cause coughing and breathing difficulties.

Sign and symptoms ingestion

: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Sign and symptoms skin

: Direct skin contact may cause temporary redness. Symptoms may include redness, itching and swelling.

Sign and symptoms eyes

: Direct eye contact may cause irritation. Symptoms may include redness, itching and swelling.

Potential Chronic Health Effects

: Prolonged inhalation may cause susceptibility to respiratory illness from continued irritation. Chronic skin contact with low concentrations may cause dermatitis.

Mutagenicity

: Not expected to be mutagenic in humans.

Carcinogenicity

: No component of this product present at levels greater than, or equal to, 0.1% is identified as a carcinogen or potential carcinogen by ACGIH, IARC, OSHA, or NTP.

Reproductive effects & Teratogenicity

: Not expected to cause reproductive effects.

Sensitization to material

: Not expected to be a skin or respiratory sensitizer.

Specific target organ effects

: Not classified as a specific target organ toxicity-single exposure.
Not classified as specific target organ toxicity-repeated exposure.

Medical conditions aggravated by overexposure

: Pre-existing skin, eye and respiratory disorders.

Synergistic materials

: No information available.

Toxicological data

: Not classified for acute toxicity based on available data. See below for toxicological data on the substance.

<u>Chemical name</u>	<u>LC₅₀(4hr)</u> <u>inh, rat</u>	<u>LD₅₀</u>	
		<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
Dihydrogen potassium phosphate	N/Av	4640 mg/kg	>4640 mg/kg

Other important toxicological hazards

: None reported by the manufacturer.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

: Not expected to be harmful to aquatic organisms. The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters. See the following tables for the substance's ecotoxicity data.

Monopotassium Phosphate

PP-011

SDS Preparation Date (mm/dd/yyyy): 06/01/2016

Page 7 of 10

SAFETY DATA SHEET

Ecotoxicity data:

<u>Ingredients</u>	CAS No	Toxicity to Fish		
		LC50 / 96h	NOEC / 21 day	M Factor
Dihydrogen potassium phosphate	7778-77-0	>100 mg/L (Rainbow trout) (Read-across)	N/Av	None.

<u>Ingredients</u>	CAS No	Toxicity to Daphnia		
		EC50 / 48h	NOEC / 21 day	M Factor
Dihydrogen potassium phosphate	7778-77-0	>100 mg/L(Read-across)	N/Av	None.

<u>Ingredients</u>	CAS No	Toxicity to Algae		
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor
Dihydrogen potassium phosphate	7778-77-0	>100 mg/L/72hr (Read-across)	>100 mg/L/72hr (Read-across)	None.

Persistence and degradability

: Biodegradation is not applicable to inorganic substances.

Bioaccumulation potential

: Not expected to bioaccumulate.
See the following data for ingredient information.

<u>Components</u>	<u>Partition coefficient n-octanol/water (log Kow)</u>	<u>Bioconcentration factor (BCF)</u>
Dihydrogen potassium phosphate (CAS 7778-77-0)	N/Av	Not expected to bioaccumulate.

Mobility in soil

: There is no data available for this product.

Other Adverse Environmental effects

: No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

SECTION 13. DISPOSAL CONSIDERATIONS

Handling for Disposal

: Handle in accordance with good industrial hygiene and safety practice. Since emptied containers may retain product residue, follow label warnings even after container is emptied. Refer to protective measures listed in sections 7 and 8.

Methods of Disposal

: Dispose in accordance with all applicable federal, state, provincial and local regulations.

RCRA

: If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

Monopotassium Phosphate



PP-011

SDS Preparation Date (mm/dd/yyyy): 06/01/2016

Page 8 of 10

SAFETY DATA SHEET

SECTION 14. TRANSPORTATION INFORMATION

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
49CFR/DOT	None.	Not regulated.	not regulated	none	
49CFR/DOT Additional information	None.				
TDG	None.	Not regulated.	not regulated	none	
TDG Additional information	None.				

Special precautions for user : Keep away from extreme heat and flame. Appropriate advice on safety must accompany the package.

Environmental hazards : This substance does not meet the criteria for an environmentally hazardous substance according to the IMDG Code. See ECOLOGICAL INFORMATION, Section 12.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
: This information is not available.

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

Components listed below are present on the following U.S. Federal chemical lists:

<u>Ingredients</u>	CAS #	TSCA Inventory	CERCLA Reportable Quantity (RQ) (40 CFR 117.302):	SARA TITLE III: Sec. 302, Extremely Hazardous Substance, 40 CFR 355:	SARA TITLE III: Sec. 313, 40 CFR 372, Specific Toxic Chemical	
					Toxic Chemical	de minimus Concentration
Dihydrogen potassium phosphate	7778-77-0	Yes	N/Ap	N/Ap	No	N/Ap

SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes: None.

US State Right to Know Laws:

The following chemicals are specifically listed by individual States:

<u>Ingredients</u>	CAS #	California Proposition 65		State "Right to Know" Lists					
		Listed	Type of Toxicity	CA	MA	MN	NJ	PA	RI
Dihydrogen potassium phosphate	7778-77-0	No	N/Ap	No	No	No	No	No	No

Canadian Information:

Monopotassium Phosphate

PP-011

SDS Preparation Date (mm/dd/yyyy): 06/01/2016

Page 9 of 10

SAFETY DATA SHEET

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

WHMIS information: Refer to Section 2 for a WHMIS Classification for this product.

International Information:

Components listed below are present on the following International Inventory list:

Ingredients	CAS #	European EINECS	Australia AICS	Philippines PICCS	Japan ENCS	Korea KECI/KECL	China IECSC	NewZealand IOC
Dihydrogen potassium phosphate	7778-77-0	231-913-4	Present	Present	(1)-452	KE-28622	Present	HSR003211

SECTION 16. OTHER INFORMATION

Legend

: ACGIH: American Conference of Governmental Industrial Hygienists
AICS: Australian Inventory of Chemical Substances
CA: California
CAS: Chemical Abstract Services
CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR: Code of Federal Regulations
CSA: Canadian Standards Association
EC50: Effective Concentration 50%.
EINECS: European Inventory of Existing Commercial chemical Substances
ENCS: Existing and New Chemical Substances
EPA: Environmental Protection Agency
IECSC: Inventory of Existing Chemical Substances
Inh: Inhalation
IOC: Inventory of Chemicals
KECI: Korean Existing Chemicals Inventory
KECL: Korean Existing Chemicals List
LC: Lethal Concentration
LD: Lethal Dose
MA: Massachusetts
MN: Minnesota
N/Ap: Not Applicable
N/Av: Not Available
NIOSH: National Institute of Occupational Safety and Health
NJ: New Jersey
NOEC: No observable effect concentration
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
PA: Pennsylvania
PEL: Permissible exposure limit
PICCS: Philippine Inventory of Chemicals and Chemical Substances
RCRA: Resource Conservation and Recovery Act
RI: Rhode Island
SARA: Superfund Amendments and Reauthorization Act
SDS: Safety Data Sheet / MSDS: Material Safety Data Sheet
STEL: Short Term Exposure Limit
TDG: Canadian Transportation of Dangerous Goods Act & Regulations
TLV: Threshold Limit Values
TSCA: Toxic Substance Control Act
TWA: Time Weighted Average
WHMIS: Workplace Hazardous Materials Identification System

Monopotassium Phosphate

PP-011

SDS Preparation Date (mm/dd/yyyy): 06/01/2016

Page 10 of 10

SAFETY DATA SHEET

- References** :
1. ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices (2015)
 2. Canadian Centre for Occupational Health and Safety, CCIInfoWeb Databases, 2016 (Chempendium, RTECs, HSDB, INCHEM).
 3. IARC Monographs. Overall Evaluation of Carcinogenicity
 4. OECD - The Global Portal to Information on Chemical Substances - eChemPortal, 2016.
 5. US EPA Title III List of Lists: March 2015 Version
 6. California Proposition 65 List: May 20, 2016 Version
 7. European Chemicals Agency, Classification Legislation, 2015
 8. Material Safety Data Sheet from manufacturer.

Preparation Date (mm/dd/yyyy)

: 06/01/2016

Other special considerations for handling

: Provide adequate information, instruction and training for operators.

<p><u>Prepared for:</u> Direct all enquiries to: Plant Products, Inc. 50 Hazelton Street PO BOX 33 Leamington, ON, Canada N8H 3W1</p>	 PLANTPRODUCTS®
<p><u>Prepared by:</u> ICC The Compliance Center Inc. Telephone: (888) 442-9628 (U.S.); (888) 977-4834 (Canada) http://www.thecompliancecenter.com</p>	 icc ComplianceCenter

DISCLAIMER

This Safety Data Sheet was prepared by ICC The Compliance Center Inc. using information provided by / obtained from Plant Products, Inc. and CCOHS' Web Information Service. The information in the Safety Data Sheet is offered for your consideration and guidance when exposed to this product. ICC The Compliance Center Inc. and Plant Products, Inc. expressly disclaim all expressed or implied warranties and assume no responsibilities for the accuracy or completeness of the data contained herein. The data in this SDS does not apply to use with any other product or in any other process.

This Safety Data Sheet may not be changed, or altered in any way without the expressed knowledge and permission of ICC The Compliance Center Inc. and Plant Products, Inc.

END OF DOCUMENT

Section 1: IDENTIFICATION

Product Name: PeKacid
Synonyms: Not available.
Product Use: Fertilizer.
Restrictions on Use: Not available.
Manufacturer/Supplier: Plant Products Inc.
50 Hazelton Street
Leamington, Ontario N8H 1B8
Phone Number: 519-326-9037
Toll free number 1-800-387-2449 (English)
Toll free number 1-800-361-9184 (French)
Emergency Phone: 1-800-424-9300 (CHEMTREC, 24 hours)
Date of Preparation of SDS: December 19, 2018

Section 2: HAZARD(S) IDENTIFICATION

GHS INFORMATION

Classification: Eye Irritation, Category 2A

LABEL ELEMENTS

Hazard

Pictogram(s):



Signal Word: Warning

Hazard Statements: Causes serious eye irritation.

Precautionary Statements

Prevention: Wash thoroughly after handling.
Wear protective gloves, protective clothing and eye protection.

Response: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical advice/attention.

Storage: Not applicable.

Disposal: Not applicable.

Hazards Not Otherwise Classified: Not applicable.

Ingredients with Unknown Toxicity: None.

This material is considered hazardous by the OSHA Hazard Communication Standard, (29 CFR 1910.1200).



This material is considered hazardous by the Hazardous Products Regulations.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Ingredient(s)	Common name / Synonyms	CAS No.	% wt./wt.
Phosphoric acid, potassium salt (2:1)	Not available.	14887-42-4	100

Impurities / Stabilizing additives: None known.

Section 4: FIRST-AID MEASURES

- Inhalation:** If inhaled: Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.
- Eye Contact:** If in eyes: Rinse cautiously with water for at least 20 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.
Acute and delayed symptoms and effects: Causes serious eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.
- Skin Contact:** If on skin: Wash with plenty of water. Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.
- Ingestion:** If swallowed: Call a poison center or doctor if you feel unwell. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.
Acute and delayed symptoms and effects: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.
- General Advice:** In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).
- Note to Physicians:** Symptoms may not appear immediately.

Section 5: FIRE-FIGHTING MEASURES

FLAMMABILITY AND EXPLOSION INFORMATION

Not flammable or combustible by OSHA/WHMIS criteria.

Sensitivity to Mechanical Impact: This material is not sensitive to mechanical impact.

Sensitivity to Static Discharge: This material is not sensitive to static discharge.

MEANS OF EXTINCTION

Suitable Extinguishing Media: Small Fire: Dry chemical, CO2, water spray or regular foam.
Large Fire: Water spray, fog or regular foam. Move containers from fire area if you can do it without risk.



Unsuitable Extinguishing Media: Do not use straight streams.

Products of Combustion: Oxides of phosphorus. Potassium oxide.

Protection of Firefighters: Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may cause pollution. Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

Section 6: ACCIDENTAL RELEASE MEASURES

Emergency Procedures: Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering.

Personal Precautions: Do not touch or walk through spilled material. Use personal protection recommended in Section 8.

Environmental Precautions: Keep out of drains, sewers, ditches, and waterways.

Methods for Containment: Do not flush to sewer or allow to enter waterways.

Methods for Clean-Up: Sweep up and shovel into suitable containers for disposal.

Other Information: See Section 13 for disposal considerations.

Section 7: HANDLING AND STORAGE

Handling:
Do not swallow. Wash thoroughly after handling. See Section 8 for information on Personal Protective Equipment.

Storage:
Store away from incompatible materials. See Section 10 for information on Incompatible Materials. Keep out of the reach of children.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines Component

Phosphoric acid, potassium salt (2:1) [CAS No. 14887-42-4]
ACGIH: 10 mg/m³ (TWA) (Inhalable.); 3 mg/m³ (TWA) (Respirable.); For Particles (Insoluble or Poorly Soluble) Not Otherwise Specified
OSHA: 15 mg/m³ (Total dust) (TWA), 5 mg/m³ (Respirable fraction) (TWA); For Particulates Not Otherwise Regulated (PNOR).

TWA: Time-Weighted Average

Engineering Controls: Not normally required.

PERSONAL PROTECTIVE EQUIPMENT (PPE)



Eye/Face Protection: Wear chemical safety goggles. Indirect vented, dust-tight goggles are required if dust is generated when handling this

product. Ensure that eyewash stations are close to the workstation location. Use equipment for eye protection that meets the standards referenced by CSA Standard CAN/CSA-Z94.3-92 and OSHA regulations in 29 CFR 1910.133 for Personal Protective Equipment.

- Hand Protection:** Wear protective gloves. Consult manufacturer specifications for further information.
- Skin and Body Protection:** Wear protective clothing.
- Respiratory Protection:** If engineering controls and ventilation are not sufficient to control exposure to below the allowable limits then an appropriate NIOSH/MSHA approved air-purifying respirator that meets the requirements of CSA Standard CAN/CSA-Z94.4-11, with particulate filter, or self-contained breathing apparatus must be used.
- General Hygiene Considerations:** Handle according to established industrial hygiene and safety practices. Consult a competent industrial hygienist to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES
--

Appearance:	Crystalline powder.
Colour:	White.
Odour:	Odourless.
Odour Threshold:	Not available.
Physical State:	Solid.
pH (10 g/L):	2.2 at 20 °C (68 °F)
Melting Point / Freezing Point:	127 to 135 °C (260.6 to 275 °F)
Initial Boiling Point:	Not available.
Boiling Range:	Not available.
Flash Point:	Not available.
Evaporation Rate:	Not available.
Flammability (solid, gas):	See Section 5.
Lower Flammability Limit:	Not available.
Upper Flammability Limit:	Not available.
Vapor Pressure:	1.47 mPa (OECD 104, EC A.4)
Vapor Density:	Not available.
Relative Density:	Not available.



Solubilities: Solubility in water at 20 °C: 583 g/L (OECD 105).

Partition Coefficient: n-Octanol/Water: Not available.

Auto-ignition Temperature: Product is not self-igniting.

Decomposition Temperature: > 200 °C (392 °F)

Viscosity: Not available.

Percent Volatile, wt. %: Not available.

VOC content, wt. %: Not available.

Bulk Density: 1.4 to 2.0 g/cm³ at 20 °C (68 °F)

Coefficient of Water/Oil Distribution: Not available.

Section 10: STABILITY AND REACTIVITY

Reactivity: Contact with incompatible materials. Exposure to heat.

Chemical Stability: Stable under normal storage conditions.

Possibility of Hazardous Reactions: None known.

Conditions to Avoid: Contact with incompatible materials. Exposure to heat.

Incompatible Materials: Water. Alkali metals.

Hazardous Decomposition Products: Not available.

Section 11: TOXICOLOGICAL INFORMATION

EFFECTS OF ACUTE EXPOSURE

Product Toxicity

Oral: Not available.

Dermal: Not available.

Inhalation: Not available.

Component Toxicity

Component	CAS No.	LD ₅₀ oral	LD ₅₀ dermal	LC ₅₀
Phosphoric acid, potassium salt (2:1)	14887-42-4	Not available.	Not available.	Not available.

Likely Routes of Exposure: Eye contact. Skin contact. Inhalation. Ingestion.

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system.

Symptoms (including delayed and immediate effects)

Inhalation: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.



Eye: Causes serious eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Skin: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

Ingestion: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Skin Sensitization: Not available.

Respiratory Sensitization: Not available.

Medical Conditions Aggravated By Exposure: Not available.

EFFECTS OF CHRONIC EXPOSURE (from short and long-term exposure)

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system.

Chronic Effects: Prolonged or repeated contact may dry skin and cause irritation.

Carcinogenicity: This product does not contain any carcinogens or potential carcinogens above reportable thresholds as listed by ACGIH, IARC, OSHA, or NTP.

Mutagenicity: Not available.

Reproductive Effects: Not available.

Developmental Effects

Teratogenicity: Not available.

Embryotoxicity: Not available.

Toxicologically Synergistic Materials: Not available.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity: Not available.

Persistence / Degradability: Not available.

Bioaccumulation / Accumulation: Not available.

Mobility in Environment: Not available.

Other Adverse Effects: Not available.

Section 13: DISPOSAL CONSIDERATIONS

Disposal Instructions: Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

Section 14: TRANSPORT INFORMATION

U.S. Department of Transportation (DOT)

Proper Shipping Name: Not regulated.
Class: Not applicable.
UN Number: Not applicable.
Packing Group: Not applicable.
Label Code: Not applicable.

Canada Transportation of Dangerous Goods (TDG)

Proper Shipping Name: Not regulated.
Class: Not applicable.
UN Number: Not applicable.
Packing Group: Not applicable.
Label Code: Not applicable.

Section 15: REGULATORY INFORMATION

Chemical Inventories

US (TSCA)

The components of this product are in compliance with the chemical notification requirements of TSCA.

Canada (DSL)

The components of this product are in compliance with the chemical notification requirements of the NSN Regulations under CEPA, 1999.

Federal Regulations

United States

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SARA Title III

No components are listed.

State Regulations

Massachusetts

US Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

No components are listed.



PLANTPRODUCTS®

SAFETY DATA SHEET

PeKacid

Date of Preparation: December 19, 2018

New Jersey

US New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

No components are listed.

Pennsylvania

US Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

No components are listed.

California

California Prop 65: This product does not contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Section 16: OTHER INFORMATION

Disclaimer:

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for their own particular use.

Date of Preparation of SDS: December 19, 2018

Version: 1.0

GHS SDS Prepared by: Aegis Regulatory Inc.

Phone: (519) 488-0351

www.aegisreg.com

**Section 1: IDENTIFICATION**

Product Name: Potassium Bicarbonate

Synonyms: Not available.

Product Use: Fertilizer.

Restrictions on Use: Not available.

Manufacturer/Supplier: Plant Products Inc.
50 Hazelton Street
Leamington, Ontario N8H 1B8

Phone Number: 519-326-9037
Toll free number 1-800-387-2449 (English)
Toll free number 1-800-361-9184 (French)

Emergency Phone: 1-800-424-9300 (CHEMTREC, 24 hours)

Date of Preparation of SDS: December 19, 2018

Section 2: HAZARD(S) IDENTIFICATION**GHS INFORMATION**

Classification: Not hazardous according to OSHA criteria (29 CFR 1910.1200).
Not hazardous according to WHMIS 2015 criteria.

LABEL ELEMENTS

Hazard None.

Pictogram(s):

Signal Word: None.

Hazard Not applicable.

Statements:

Precautionary Statements

Prevention: Not applicable.

Response: Not applicable.

Storage: Not applicable.

Disposal: Not applicable.

Hazards Not Otherwise Classified: Not applicable.

Ingredients with Unknown Toxicity: None.

This material is not considered hazardous by the OSHA Hazard Communication Standard, (29 CFR 1910.1200).

This material is not considered hazardous by the Hazardous Products Regulations.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient(s)	Common name / Synonyms	CAS No.	% wt./wt.
Carbonic acid, monopotassium salt	Potassium bicarbonate	298-14-6	80 - 100

Impurities / Stabilizing additives: None known.

Section 4: FIRST-AID MEASURES

- Inhalation:** If inhaled: Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.
- Eye Contact:** If in eyes: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.
- Skin Contact:** If on skin: Wash with plenty of water. Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.
- Ingestion:** If swallowed: Call a poison center or doctor if you feel unwell. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.
Acute and delayed symptoms and effects: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.
- General Advice:** In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).
- Note to Physicians:** Symptoms may not appear immediately.

Section 5: FIRE-FIGHTING MEASURES

FLAMMABILITY AND EXPLOSION INFORMATION

Not flammable or combustible by OSHA/WHMIS criteria.

Sensitivity to Mechanical Impact: This material is not sensitive to mechanical impact.

Sensitivity to Static Discharge: This material is not sensitive to static discharge.

MEANS OF EXTINCTION

Suitable Extinguishing Media: Use appropriate extinguishing media for surrounding fire. Move containers from fire area if you can do it without risk.

Unsuitable Extinguishing Media: Not available.

Products of Combustion: Oxides of carbon.



Protection of Firefighters: Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may cause pollution. Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

Section 6: ACCIDENTAL RELEASE MEASURES

Emergency Procedures: Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering.

Personal Precautions: Do not touch or walk through spilled material. Use personal protection recommended in Section 8.

Environmental Precautions: Keep out of drains, sewers, ditches, and waterways.

Methods for Containment: Do not flush to sewer or allow to enter waterways.

Methods for Clean-Up: Avoid generating dust. Sweep up and shovel into suitable containers for disposal.

Other Information: See Section 13 for disposal considerations.

Section 7: HANDLING AND STORAGE

Handling: Do not swallow. See Section 8 for information on Personal Protective Equipment.

Storage: Store away from incompatible materials. See Section 10 for information on Incompatible Materials. Keep out of the reach of children.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines Component

Potassium bicarbonate [CAS No. 298-14-6]

ACGIH: 10 mg/m³ (TWA) (Inhalable.); 3 mg/m³ (TWA) (Respirable.); For Particles (Insoluble or Poorly Soluble) Not Otherwise Specified

OSHA: 15 mg/m³ (Total dust) (TWA), 5 mg/m³ (Respirable fraction) (TWA); For Particulates Not Otherwise Regulated (PNOR).

TWA: Time-Weighted Average

Engineering Controls: Not normally required.

PERSONAL PROTECTIVE EQUIPMENT (PPE)



Eye/Face Protection: Wear safety glasses. Indirect vented, dust-tight goggles are required if dust is generated when handling this product. Use equipment for eye protection that meets the standards referenced by CSA Standard CAN/CSA-Z94.3-92 and OSHA regulations in 29 CFR 1910.133 for Personal Protective Equipment.



Hand Protection:	Wear protective gloves. Nitrile rubber (0.4 mm), chloroprene rubber (0.5 mm), polyvinylchloride (0.7 mm) gloves are recommended. Consult manufacturer specifications for further information.
Skin and Body Protection:	Wear protective clothing.
Respiratory Protection:	If engineering controls and ventilation are not sufficient to control exposure to below the allowable limits then an appropriate NIOSH/MSHA approved air-purifying respirator that meets the requirements of CSA Standard CAN/CSA-Z94.4-11, with particulate filter, or self-contained breathing apparatus must be used.
General Hygiene Considerations:	Handle according to established industrial hygiene and safety practices. Consult a competent industrial hygienist to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Powder or granules.
Colour:	White.
Odour:	Odourless.
Odour Threshold:	Not available.
Physical State:	Solid.
pH:	Not available.
Melting Point / Freezing Point:	Not available.
Initial Boiling Point:	Not available.
Boiling Range:	Not available.
Flash Point:	Not available.
Evaporation Rate:	Not available.
Flammability (solid, gas):	See Section 5.
Lower Flammability Limit:	Not available.
Upper Flammability Limit:	Not available.
Vapor Pressure:	Not available.
Vapor Density:	Not available.
Relative Density:	2.17 (Water = 1)
Solubilities:	Soluble in water.
Partition Coefficient: n-Octanol/Water:	Not available.



Auto-ignition Temperature: Not available.

Decomposition Temperature: 100 °C (212 °F)

Viscosity: Not available.

Percent Volatile, wt. %: Not available.

VOC content, wt. %: Not available.

Bulk Density: Not available.

Coefficient of Water/Oil Distribution: Not available.

Section 10: STABILITY AND REACTIVITY

Reactivity: Contact with incompatible materials. Exposure to heat.

Chemical Stability: Stable under normal storage conditions.

Possibility of Hazardous Reactions: None known.

Conditions to Avoid: Contact with incompatible materials. Exposure to heat.

Incompatible Materials: Acids. Ammonium phosphate.

Hazardous Decomposition Products: Not available.

Section 11: TOXICOLOGICAL INFORMATION

EFFECTS OF ACUTE EXPOSURE

Product Toxicity

Oral: Not available.

Dermal: Not available.

Inhalation: Not available.

Component Toxicity

Component	CAS No.	LD ₅₀ oral	LD ₅₀ dermal	LC ₅₀
Potassium bicarbonate	298-14-6	> 2000 mg/kg (rat)	Not available.	Not available.

Likely Routes of Exposure: Eye contact. Skin contact. Inhalation. Ingestion.

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system.

Symptoms (including delayed and immediate effects)

Inhalation: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Eye: May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Skin: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.



Ingestion: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Skin Sensitization: Not available.

Respiratory Sensitization: Not available.

Medical Conditions Not available.

Aggravated By Exposure:

EFFECTS OF CHRONIC EXPOSURE (from short and long-term exposure)

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system.

Chronic Effects: Prolonged or repeated contact may dry skin and cause irritation.

Carcinogenicity: This product does not contain any carcinogens or potential carcinogens above reportable thresholds as listed by ACGIH, IARC, OSHA, or NTP.

Mutagenicity: Not available.

Reproductive Effects: Not available.

Developmental Effects

Teratogenicity: Not available.

Embryotoxicity: Not available.

Toxicologically Synergistic Materials: Not available.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity: Not available.

Persistence / Degradability: Not available.

Bioaccumulation / Accumulation: Not available.

Mobility in Environment: Not available.

Other Adverse Effects: Not available.

Section 13: DISPOSAL CONSIDERATIONS

Disposal Instructions: Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

Section 14: TRANSPORT INFORMATION

U.S. Department of Transportation (DOT)

Proper Shipping Name: Not regulated.

Class: Not applicable.

UN Number: Not applicable.

Packing Group: Not applicable.

Label Code: Not applicable.



PLANTPRODUCTS®

SAFETY DATA SHEET

Potassium Bicarbonate

Date of Preparation: December 19, 2018

Canada Transportation of Dangerous Goods (TDG)

Proper Shipping Name: Not regulated.

Class: Not applicable.

UN Number: Not applicable.

Packing Group: Not applicable.

Label Code: Not applicable.

Section 15: REGULATORY INFORMATION

Chemical Inventories

US (TSCA)

The components of this product are in compliance with the chemical notification requirements of TSCA.

Canada (DSL)

The components of this product are in compliance with the chemical notification requirements of the NSN Regulations under CEPA, 1999.

Federal Regulations

United States

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SARA Title III

No components are listed.

State Regulations

Massachusetts

US Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

No components are listed.

New Jersey

US New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

No components are listed.

Pennsylvania

US Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

No components are listed.

California

California Prop 65: This product does not contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Section 16: OTHER INFORMATION

Disclaimer:

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for their own particular use.

Date of Preparation of SDS: December 19, 2018

Version: 1.0

GHS SDS Prepared by: **Aegis Regulatory Inc.**

Phone: (519) 488-0351

www.aegisreg.com



Plant Products Inc.
50 Hazelton Street
PO BOX 33
Leamington, Ontario N8H 3W1
Canada

Potassium chloride

PP-016

SDS Preparation Date (mm/dd/yyyy): 05/23/2016

Page 1 of 10

SAFETY DATA SHEET

SECTION 1. IDENTIFICATION

Product identifier used on the label

: **Potassium chloride**

Product Code(s)

: Muriate of Potash

Recommended use of the chemical and restrictions on use

: Fertilizer, horticultural chemical.
Use pattern: professional use
Recommended restrictions: None known.

Chemical family

: Inorganic fertilizer

Name, address, and telephone number of the manufacturer:

Plant Products Inc.

50 Hazelton Street
PO BOX 33
Leamington, Ontario, Canada
N8H 3W1

Name, address, and telephone number of the supplier:

Plant Products Inc.

50 Hazelton Street
PO BOX 33
Leamington, Ontario, Canada
N8H 3W1

Supplier's Telephone # : 519-326-9037 (Monday - Friday, 8:00 am - 5:00 pm, Eastern Standard Time)

24 Hr. Emergency Tel # : CANUTEC: 1-888-CANUTEC (1-888-226-8832)

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

Appearance: Solid: white - reddish brown; granular - crystalline

Odour: Odourless.

This material is not classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Label elements

Signal Word

Not applicable.

Hazard statement(s)

Not applicable.

Precautionary statement(s)

Not applicable.

Potassium chloride

PP-016

SDS Preparation Date (mm/dd/yyyy): 05/23/2016

Page 2 of 10

SAFETY DATA SHEET

Other hazards

No OSHA defined hazard classes.

Other hazards which do not result in classification:

Toxic fumes, gases or vapours may evolve on burning.

Solutions may be corrosive to metals.

Product dust may be irritating to eyes, skin and respiratory system.

Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Prolonged inhalation may cause susceptibility to respiratory illness from continued irritation.

Chronic skin contact with low concentrations may cause dermatitis.

Ecological information:

Not expected to be harmful to aquatic organisms. Avoid release to the environment.

See Section 12 for more environmental information.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

<u>Chemical name</u>	<u>Common name and synonyms</u>	<u>CAS #</u>	<u>Concentration (% by weight)</u>
Potassium chloride	Potassium muriate	7447-40-7	95.0 - 99.5
Sodium chloride	Salt	7647-14-5	0.3 - 3.7

No ingredients listed are considered hazardous according to OSHA HazCom2012 or WHMIS 2015.

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

- Ingestion* : Rinse mouth thoroughly. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.
- Inhalation* : Remove exposed person to fresh air immediately. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. Get medical advice/attention if you feel unwell.
- Skin contact* : Wash off with soap and plenty of water. Remove and wash contaminated clothing before re-use. Get medical attention if irritation develops and persists.
- Eye contact* : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical attention if irritation develops and persists.

Most important symptoms and effects, both acute and delayed

- : Product dust may be irritating to eyes, skin and respiratory system.
- Direct contact with eyes may cause temporary irritation. Symptoms may include tearing, redness and discomfort.
- Direct skin contact may cause temporary redness. Symptoms may include redness, itching and swelling. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.
- Inhalation of dusts may cause respiratory irritation. May cause coughing and breathing difficulties.
- Prolonged inhalation may cause susceptibility to respiratory illness from continued irritation.
- Chronic skin contact with low concentrations may cause dermatitis.

Indication of any immediate medical attention and special treatment needed

- : Provide general supportive measures and treat symptomatically.

Potassium chloride

PP-016

SDS Preparation Date (mm/dd/yyyy): 05/23/2016

Page 3 of 10

SAFETY DATA SHEET

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

: Use media suitable for the surrounding area.

Unsuitable extinguishing media

: Do not use a solid water stream as it may scatter and spread fire.

Special hazards arising from the substance or mixture / Conditions of flammability

: Not considered flammable. Toxic fumes, gases or vapours may evolve on burning. This product may form a corrosive fog, if involved in a fire. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure.

Flammability classification (OSHA 29 CFR 1910.106)

: Not flammable.

Hazardous combustion products

: Hydrogen chloride gas, Chlorine, Dipotassium oxide, Other irritating fumes and smoke.

Special protective equipment and precautions for firefighters

Protective equipment for fire-fighters

: Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode.

Special fire-fighting procedures

: Move containers from fire area if safe to do so. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses. Dike for water control.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

: Restrict access to area until completion of clean-up. Keep people away from and upwind of spill/leak. All persons dealing with the clean-up should wear the appropriate chemically protective equipment. Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Keep material, as well as water from fire-fighting efforts, from entering streams, drains and other water systems.

Methods and material for containment and cleaning up

: Ventilate the area. Remove all sources of ignition. Prevent further leakage or spillage if safe to do so. Vacuum or sweep up spilled material using a method that does not generate airborne dust. Place in clean, dry and labeled containers. Clean surface thoroughly to remove residual contamination. After cleaning, flush away traces with water. Do not flush into surface water or sanitary sewer system. Refer to Section 13 for disposal of contaminated material. Contact the proper local authorities.

Special spill response procedures

: For 24-hour emergency assistance, call: 1-613-996-6666 (CANUTEC). If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8802).

EPA/CERCLA Reportable quantity (RQ):
None known.

Potassium chloride

PP-016

SDS Preparation Date (mm/dd/yyyy): 05/23/2016

Page 4 of 10

SAFETY DATA SHEET

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

- : Avoid dust formation. Use in a well-ventilated area. Avoid breathing dust. Wear appropriate protective equipment. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Keep away from incompatibles. Solutions may be corrosive to metals. Keep away from extreme heat and flame. Keep containers closed when not in use. Empty containers retain residue and can be dangerous.

- Conditions for safe storage** : Store in a cool, dry, well ventilated area. Store away from incompatible materials. Keep containers dry and tightly closed to avoid moisture absorption and contamination. Material is hygroscopic and may absorb moisture from air. Solutions may be corrosive to metals. Keep away from heat and sources of ignition. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. No smoking. Inspect periodically for damage or leaks. Have appropriate fire extinguishers and spill clean-up equipment in or near storage area.

- Incompatible materials** : Acids, Nitrogen compounds, Bromine trifluoride, potassium permanganate.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits:

<u>Chemical Name</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>	
	<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>
Potassium chloride	N/Av	N/Av	N/Av	N/Av
Sodium chloride	N/Av	N/Av	N/Av	N/Av

Exposure controls

Ventilation and engineering measures

- : Use only in well-ventilated areas. Apply technical measures to comply with the occupational exposure limits. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. In case of insufficient ventilation wear suitable respiratory equipment.

- Respiratory protection** : If engineering controls and work practices are not effective in controlling exposure to this material, then wear suitable approved respiratory protection. Use a NIOSH approved dust respirator if dust levels exceed exposure limits. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134) or CSA Z94.4-02. Advice should be sought from respiratory protection specialists.

- Skin protection** : Wear protective gloves. The suitability for a specific workplace should be discussed with the producers of the protective gloves.

- Eye / face protection** : Chemical goggles should be worn if there is a potential for exposure to particles which could cause eye contact or injury.

- Other protective equipment** : Emergency showers and eyewash facilities should be nearby. Other equipment may be required depending on workplace standards.

General hygiene considerations

- : Avoid breathing dust. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. Wash hands thoroughly after using this product, and before eating, drinking or smoking. Remove and wash contaminated clothing before re-use. Handle in accordance with good industrial hygiene and safety practice.

Potassium chloride

PP-016

SDS Preparation Date (mm/dd/yyyy): 05/23/2016

Page 5 of 10

SAFETY DATA SHEET

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: Solid: white - reddish brown; granular - crystalline
Odour	: Odourless.
Odour threshold	: N/Ap
pH	: 5.4-10.0 (5% solution)
Melting/Freezing point	: 1423-1428°F / 772-776°C Melting point
Initial boiling point and boiling range	: 2732°F / 1500°C Sublimes
Flash point	: N/Ap
Flashpoint (Method)	: N/Ap
Evaporation rate (BuAe = 1)	: N/Ap
Flammability (solid, gas)	: Not considered flammable.
Lower flammable limit (% by vol.)	: N/Ap
Upper flammable limit (% by vol.)	: N/Ap
Oxidizing properties	: None known.
Explosive properties	: Not explosive
Vapour pressure	: N/Ap
Vapour density	: N/Ap
Relative density / Specific gravity	: 1.986-1.990
Solubility in water	: Soluble (34.2 g/100 mL@68°F (20°C))
Other solubility(ies)	: N/Av
Partition coefficient: n-octanol/water or Coefficient of water/oil distribution	: N/Av
Auto-ignition temperature	: N/Ap
Decomposition temperature	: N/Av
Viscosity	: N/Av
Volatiles (% by weight)	: N/Ap
Volatile organic Compounds (VOC's)	: N/Ap
Absolute pressure of container	: N/Ap
Flame projection length	: N/Ap
Other physical/chemical comments	: Not sensitive to static discharge or mechanical impact under normal conditions of use and handling.

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: Not normally reactive. Solutions may be corrosive to metals.
Chemical stability	: Stable under normal conditions. Material is hygroscopic and may absorb moisture from air.
Possibility of hazardous reactions	: Hazardous polymerization does not occur. No dangerous reaction known under conditions of normal use.
Conditions to avoid	: Moisture. High humidity. Extreme heat. Ensure adequate ventilation, especially in confined areas. Avoid contact with incompatible materials.
Incompatible materials	: Acids, Nitrogen compounds, Bromine trifluoride, potassium permanganate.

Potassium chloride

PP-016

SDS Preparation Date (mm/dd/yyyy): 05/23/2016

Page 6 of 10

SAFETY DATA SHEET

Hazardous decomposition products

: Hydrogen chloride gas, Chlorine, Dipotassium oxide.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

Routes of entry inhalation : YES

Routes of entry skin & eye : YES

Routes of entry Ingestion : YES

Routes of exposure skin absorption
: NO

Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation

: Inhalation of dusts may cause respiratory irritation. May cause coughing and breathing difficulties.

Sign and symptoms ingestion

: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Sign and symptoms skin

: Direct skin contact may cause temporary redness. Symptoms may include redness, itching and swelling.

Sign and symptoms eyes

: Direct eye contact may cause irritation. Symptoms may include redness, itching and swelling.

Potential Chronic Health Effects

: Prolonged inhalation may cause susceptibility to respiratory illness from continued irritation. Chronic skin contact with low concentrations may cause dermatitis.

Mutagenicity

: Not expected to be mutagenic in humans.

Carcinogenicity

: No component of this product present at levels greater than, or equal to, 0.1% is identified as a carcinogen or potential carcinogen by ACGIH, IARC, OSHA, or NTP.

Reproductive effects & Teratogenicity

: Not expected to cause reproductive effects.

Sensitization to material

: Not expected to be a skin or respiratory sensitizer.

Specific target organ effects

: Not classified as a specific target organ toxicity-single exposure.
Not classified as specific target organ toxicity-repeated exposure.

Medical conditions aggravated by overexposure

: Pre-existing skin, eye and respiratory disorders.

Synergistic materials

: No information available.

Toxicological data

: Not classified for acute toxicity based on available data. See below for toxicological data on the substance.

<u>Chemical name</u>	<u>LC₅₀(4hr)</u> <u>inh, rat</u>	<u>LD₅₀</u>	
		<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
Potassium chloride	N/Av	3020 mg/kg	N/Av
Sodium chloride	>10.5 mg/L (dust)	3000 mg/kg	>10000mg/kg

Other important toxicological hazards

: None reported by the manufacturer.

Potassium chloride

PP-016

SDS Preparation Date (mm/dd/yyyy): 05/23/2016

Page 7 of 10

SAFETY DATA SHEET

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity : Not expected to be harmful to aquatic organisms. The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters. See the following tables for the substance's ecotoxicity data.

Ecotoxicity data:

<u>Ingredients</u>	CAS No	Toxicity to Fish		
		LC50 / 96h	NOEC / 21 day	M Factor
Potassium chloride	7447-40-7	880mg/L Fathead minnow	N/Av	None.
Sodium chloride	7647-14-5	5480mg/L Bluegill sunfish	252 mg/L (33 days) Fathead minnow	None.

<u>Ingredients</u>	CAS No	Toxicity to Daphnia		
		EC50 / 48h	NOEC / 21 day	M Factor
Potassium chloride	7447-40-7	177mg/L Daphnia magna (Water flea)	130 mg/L	None.
Sodium chloride	7647-14-5	4136mg/L Daphnia magna (Water flea)	314mg/L Daphnia pulex (Water flea)	None.

<u>Ingredients</u>	CAS No	Toxicity to Algae		
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor
Potassium chloride	7447-40-7	>100mg/L (Green algae)	>100 mg/L	None.
Sodium chloride	7647-14-5	N/Av	N/Av	N/Av

Persistence and degradability

: Biodegradation is not applicable to inorganic substances.

Bioaccumulation potential

: Not expected to bioaccumulate.
See the following data for ingredient information.

<u>Components</u>	<u>Partition coefficient n-octanol/water (log Kow)</u>	<u>Bioconcentration factor (BCF)</u>
Potassium chloride (CAS 7447-40-7)	-0.46 (calculated)	N/Av
Sodium chloride (CAS 7647-14-5)	N/Av	N/Av

Mobility in soil

: There is no data available for this product.

Other Adverse Environmental effects

: No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

SECTION 13. DISPOSAL CONSIDERATIONS

Handling for Disposal

: Handle in accordance with good industrial hygiene and safety practice. Since emptied containers may retain product residue, follow label warnings even after container is emptied. Refer to protective measures listed in sections 7 and 8.

Potassium chloride

PP-016



SDS Preparation Date (mm/dd/yyyy): 05/23/2016

Page 8 of 10

SAFETY DATA SHEET

- Methods of Disposal** : Dispose in accordance with all applicable federal, state, provincial and local regulations.
- RCRA** : If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

SECTION 14. TRANSPORTATION INFORMATION

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
49CFR/DOT	None.	Not regulated.	not regulated	none	
49CFR/DOT Additional information	None.				
TDG	None.	Not regulated.	not regulated	none	
TDG Additional information	None.				

Special precautions for user : Keep away from extreme heat and flame. Appropriate advice on safety must accompany the package.

Environmental hazards : This substance does not meet the criteria for an environmentally hazardous substance according to the IMDG Code. See ECOLOGICAL INFORMATION, Section 12.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
: This information is not available.

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

Components listed below are present on the following U.S. Federal chemical lists:

<u>Ingredients</u>	CAS #	TSCA Inventory	CERCLA Reportable Quantity(RQ) (40 CFR 117.302):	SARA TITLE III: Sec. 302, Extremely Hazardous Substance, 40 CFR 355:	SARA TITLE III: Sec. 313, 40 CFR 372, Specific Toxic Chemical	
					Toxic Chemical	de minimus Concentration
Potassium chloride	7447-40-7	Yes	N/Ap	N/Ap	No	N/Ap
Sodium chloride	7647-14-5	Yes	N/Ap	N/Ap	No	N/Ap

SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes: None.

US State Right to Know Laws:

The following chemicals are specifically listed by individual States:

Potassium chloride

PP-016

SDS Preparation Date (mm/dd/yyyy): 05/23/2016

Page 9 of 10

SAFETY DATA SHEET

<u>Ingredients</u>	CAS #	California Proposition 65		State "Right to Know" Lists					
		Listed	Type of Toxicity	CA	MA	MN	NJ	PA	RI
Potassium chloride	7447-40-7	No	N/Ap	No	No	No	No	No	No
Sodium chloride	7647-14-5	No	N/Ap	No	No	No	No	No	No

Canadian Information:

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

WHMIS information: Refer to Section 2 for a WHMIS Classification for this product.

International Information:

Components listed below are present on the following International Inventory list:

<u>Ingredients</u>	CAS #	European EINECS	Australia AICS	Philippines PICCS	Japan ENCS	Korea KECI/KECL	China IECSC	NewZealand IOC
Potassium chloride	7447-40-7	231-211-8	Present	Present	(1)-228	KE-29086	Present	HSR003261
Sodium chloride	7647-14-5	231-598-3	Present	Present	(1)-236	KE-31387	Present	HSR002722

SECTION 16. OTHER INFORMATION

Legend

: ACGIH: American Conference of Governmental Industrial Hygienists
AICS: Australian Inventory of Chemical Substances
CA: California
CAS: Chemical Abstract Services
CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR: Code of Federal Regulations
CSA: Canadian Standards Association
EC50: Effective Concentration 50%.
EINECS: European Inventory of Existing Commercial chemical Substances
ENCS: Existing and New Chemical Substances
EPA: Environmental Protection Agency
IECSC: Inventory of Existing Chemical Substances
Inh: Inhalation
IOC: Inventory of Chemicals
KECI: Korean Existing Chemicals Inventory
KECL: Korean Existing Chemicals List
LC: Lethal Concentration
LD: Lethal Dose
MA: Massachusetts
MN: Minnesota
N/Ap: Not Applicable
N/Av: Not Available
NIOSH: National Institute of Occupational Safety and Health
NJ: New Jersey
NOEC: No observable effect concentration
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
PA: Pennsylvania
PEL: Permissible exposure limit

Potassium chloride

PP-016

SDS Preparation Date (mm/dd/yyyy): 05/23/2016

Page 10 of 10

SAFETY DATA SHEET

PICCS: Philippine Inventory of Chemicals and Chemical Substances
RCRA: Resource Conservation and Recovery Act
RI: Rhode Island
SARA: Superfund Amendments and Reauthorization Act
SDS: Safety Data Sheet / MSDS: Material Safety Data Sheet
STEL: Short Term Exposure Limit
TDG: Canadian Transportation of Dangerous Goods Act & Regulations
TLV: Threshold Limit Values
TSCA: Toxic Substance Control Act
TWA: Time Weighted Average
WHMIS: Workplace Hazardous Materials Identification System

References

- : 1. ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices (2015)
- 2. Canadian Centre for Occupational Health and Safety, CCHInfoWeb Databases, 2016 (Chempendium, RTECs, HSDB, INCHEM).
- 3. IARC Monographs. Overall Evaluation of Carcinogenicity
- 4. OECD - The Global Portal to Information on Chemical Substances - eChemPortal, 2016.
- 5. US EPA Title III List of Lists: March2015 Version
- 6. California Proposition 65 List: April 22, 2016 Version
- 7. European Chemicals Agency, Classification Legislation, 2015
- 8. Material Safety Data Sheet from manufacturer.

Preparation Date (mm/dd/yyyy)

: 05/23/2016

Other special considerations for handling

: Provide adequate information, instruction and training for operators.

<p><u>Prepared for:</u> Direct all enquiries to: Plant Products, Inc. 50 Hazelton Street PO BOX 33 Leamington, ON, Canada N8H 3W1</p>	 PLANTPRODUCTS®
<p><u>Prepared by:</u> ICC The Compliance Center Inc. Telephone: (888) 442-9628 (U.S.); (888) 977-4834 (Canada) http://www.thecompliancecenter.com</p>	

DISCLAIMER

This Safety Data Sheet was prepared by ICC The Compliance Center Inc. using information provided by / obtained from Plant Products, Inc. and CCOHS' Web Information Service. The information in the Safety Data Sheet is offered for your consideration and guidance when exposed to this product. ICC The Compliance Center Inc. and Plant Products, Inc. expressly disclaim all expressed or implied warranties and assume no responsibilities for the accuracy or completeness of the data contained herein. The data in this SDS does not apply to use with any other product or in any other process.

This Safety Data Sheet may not be changed, or altered in any way without the expressed knowledge and permission of ICC The Compliance Center Inc. and Plant Products, Inc.

END OF DOCUMENT

Potassium nitrate, Greenhouse Grade

PP-013

SDS Preparation Date (mm/dd/yyyy): 05/20/2016

Page 1 of 10

SAFETY DATA SHEET

SECTION 1. IDENTIFICATION

Product identifier used on the label

: **Potassium nitrate, Greenhouse Grade**

Product Code(s) : None reported.

Recommended use of the chemical and restrictions on use

: Fertilizer, horticultural chemical.
Use pattern: professional use
Restriction on use: None known.

Chemical family : Inorganic fertilizer

Name, address, and telephone number of the manufacturer:

Plant Products Inc.

50 Hazelton Street
PO BOX 33
Leamington, Ontario, Canada
N8H 3W1

Name, address, and telephone number of the supplier:

Plant Products Inc.

50 Hazelton Street
PO BOX 33
Leamington, Ontario, Canada
N8H 3W1

Supplier's Telephone # : 519-326-9037 (Monday - Friday, 8:00 am - 5:00 pm, Eastern Standard Time)

24 Hr. Emergency Tel # : CANUTEC: 1-888-CANUTEC (1-888-226-8832)

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

Appearance: Solid - hygroscopic, white prills / crystalline / powdered form.
Odour: odourless

Most important hazards: This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Hazard classification:
Oxidizing solids - Category 3

Label elements

Hazard pictogram(s)



Signal Word

WARNING!

Hazard statement(s)

May intensify fire; oxidizer.

Potassium nitrate, Greenhouse Grade

PP-013

SDS Preparation Date (mm/dd/yyyy): 05/20/2016

Page 2 of 10

SAFETY DATA SHEET

Precautionary statement(s)

Keep away from heat.
Keep/Store away from clothing and other combustible materials.
Take any precaution to avoid mixing with combustibles.
Wear protective gloves and eye/face protection.

In case of fire: Use water spray or fog to extinguish.

Dispose of contents/container in accordance with local/regional/national/international regulations.

Other hazards

No OSHA defined hazard classes.

Other hazards which do not result in classification:

Toxic fumes, gases or vapours may evolve on burning.

May cause mild skin and eye irritation.

Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough.

Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Prolonged inhalation may cause susceptibility to respiratory illness from continued irritation.

Ecological information:

Not expected to be harmful to aquatic organisms. Avoid release to the environment. See Section 12 for more environmental information.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance

<u>Chemical name</u>	<u>Common name and synonyms</u>	<u>CAS #</u>	<u>Concentration (% by weight)</u>
Potassium nitrate	Nitrate of potash	7757-79-1	100%

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

- Ingestion* : Rinse mouth thoroughly. Do not induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention if irritation develops and persists.
- Inhalation* : Remove exposed person to fresh air immediately. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. Get medical attention if irritation develops and persists.
- Skin contact* : Wash off with soap and plenty of water. Remove and wash contaminated clothing before re-use. Get medical attention if irritation develops and persists.
- Eye contact* : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical attention if irritation develops and persists.

Most important symptoms and effects, both acute and delayed

- : May cause mild skin and eye irritation. May cause mechanical irritation to the eyes and skin. Symptoms may include mild redness and swelling.
Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.
Ingestion of large amounts of nitrites or nitrates may affect oxygen transport in the blood and blood system, causing methemoglobinemia.
Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough. Prolonged inhalation may cause susceptibility to respiratory illness from continued irritation.

Indication of any immediate medical attention and special treatment needed

- : Provide general supportive measures and treat symptomatically.

Potassium nitrate, Greenhouse Grade

PP-013

SDS Preparation Date (mm/dd/yyyy): 05/20/2016

Page 3 of 10

SAFETY DATA SHEET

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

- : Water or fog spray.

Unsuitable extinguishing media

- : Do not use a solid water stream as it may scatter and spread the fire. Avoid using Carbon dioxide or other similar extinguishing agents as they are not effective in fires involving oxidizers.

Special hazards arising from the substance or mixture / Conditions of flammability

- : Not flammable. However, the product has oxidizing properties. Contact with combustible material may cause fire. Will support combustion in the absence of oxygen. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure.

Flammability classification (OSHA 29 CFR 1910.106)

- : Not flammable.

Hazardous combustion products

- : Potassium oxides, Nitrogen oxides (NO_x), Oxygen.
In addition, burining organic material may release carbon oxides.

Special protective equipment and precautions for firefighters

Protective equipment for fire-fighters

- : Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA.

Special fire-fighting procedures

- : Move containers from fire area if safe to do so. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses. Dike for water control.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

- : Ventilate the area. Remove all sources of ignition. Restrict access to area until completion of clean-up. Keep people away from and upwind of spill/leak. All persons dealing with the clean-up should wear the appropriate chemically protective equipment. Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Keep material, as well as water from fire-fighting efforts, from entering streams, drains and other water systems.

Methods and material for containment and cleaning up

- : Ventilate the area. Remove all sources of ignition. Prevent further leakage or spillage if safe to do so. Vacuum or sweep up spilled material using a method that does not generate airborne dust. Place in clean, dry and labeled containers. Keep in suitable, closed containers for disposal. Clean surface thoroughly to remove residual contamination. After cleaning, flush away traces with water. Do not flush into surface water or sanitary sewer system. Do not use combustible absorbents, such as sawdust.

Special spill response procedures

- : For 24-hour emergency assistance, call: 1-613-996-6666 (CANUTEC). If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8802).
EPA/CERCLA Reportable quantity (RQ):
None known.

Potassium nitrate, Greenhouse Grade

PP-013

SDS Preparation Date (mm/dd/yyyy): 05/20/2016

Page 4 of 10

SAFETY DATA SHEET

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

: Avoid dust formation. Use in a well-ventilated area. Avoid breathing dust. Wear appropriate personal protective equipment. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Minimize dust generation and accumulation. Material is hygroscopic and may absorb moisture from air. Keep away from heat and sources of ignition. Keep away from clothing and other combustible materials. Label containers appropriately. Keep container tightly closed when not in use. Empty containers retain residue and can be dangerous.

Conditions for safe storage : Keep in a cool, well-ventilated place. Keep containers dry and tightly closed to avoid moisture absorption and contamination. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Keep away from incompatibles. Keep away from heat and sources of ignition. Do not store around flammable or combustible materials. Do not store with or near organic materials, strong acids, or reducing agents.

Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. Inspect periodically for damage or leaks. No smoking in the area. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Have appropriate fire extinguishers and spill clean-up equipment in or near storage area.

Incompatible materials : Acids. Bases. Combustible materials. Reducing agents. Organic materials. Powdered metals. Moisture.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits:

<u>Chemical Name</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>	
	<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>
Potassium nitrate	N/Av	N/Av	N/Av	N/Av

Exposure controls

Ventilation and engineering measures

: Use only in well-ventilated areas. Apply technical measures to comply with the occupational exposure limits. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction.

Respiratory protection : If engineering controls and work practices are not effective in controlling exposure to this material, then wear suitable approved respiratory protection. Use a NIOSH approved dust respirator if dust levels exceed exposure limits. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134) or CSA Z94.4-02.

Skin protection : Wear protective gloves. The suitability for a specific workplace should be discussed with the producers of the protective gloves. Wear sufficient clothing to prevent skin contact.

Eye / face protection : Chemical goggles should be worn if there is a potential for exposure to particles which could cause eye contact or injury.

Other protective equipment : An eyewash station and safety shower should be made available in the immediate working area. Other equipment may be required depending on workplace standards.

Potassium nitrate, Greenhouse Grade

PP-013

SDS Preparation Date (mm/dd/yyyy): 05/20/2016

Page 5 of 10

SAFETY DATA SHEET

General hygiene considerations

- : Avoid breathing dust. Avoid contact with skin, eyes and clothing. Do not eat, drink, smoke or use cosmetics while working with this product. Wash hands thoroughly after using this product, and before eating, drinking or smoking. Remove and wash contaminated clothing before re-use. Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance : Solid - hygroscopic, white prills / crystalline/ powdered form

Odour : Odorless

Odour threshold : N/Ap

pH : 3-11

Melting/Freezing point : 633.2°F / 335°C Melting point

Initial boiling point and boiling range

: Decomposes on heating.

Flash point : N/Ap

Flashpoint (Method) : N/Ap

Evaporation rate (BuAe = 1) : Non volatile. (butyl acetate = 1)

Flammability (solid, gas) : The product is not flammable.

Lower flammable limit (% by vol.)

: N/Ap

Upper flammable limit (% by vol.)

: N/Ap

Oxidizing properties : May intensify fire; oxidizer.

Explosive properties : Not explosive

Vapour pressure : <0.001 kPa at 68°F / 20°C

Vapour density : Not volatile.

Relative density / Specific gravity

: 2.11 g/cm³

Solubility in water : Soluble. (100 g/l@ 77°F / 25°C)

Other solubility(ies) : N/Av

Partition coefficient: n-octanol/water or Coefficient of water/oil distribution

: <1

Auto-ignition temperature : N/Ap

Decomposition temperature : >752°F / >400°C

Viscosity : N/Ap

Volatiles (% by weight) : Not volatile.

Volatile organic Compounds (VOC's)

: N/Ap

Absolute pressure of container

: N/Ap

Flame projection length : N/Ap

Other physical/chemical comments

- : Not sensitive to static discharge or mechanical impact under normal conditions of use and handling.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not normally reactive. This material is an oxidizer and may react with organic materials.

Chemical stability : Stable under normal conditions. Decomposes on heating. Material is hygroscopic and may absorb moisture from air.

Potassium nitrate, Greenhouse Grade

PP-013

SDS Preparation Date (mm/dd/yyyy): 05/20/2016

Page 6 of 10

SAFETY DATA SHEET

Possibility of hazardous reactions

- : Contains oxidizers, which may increase the burning rate of combustible materials. Contact with combustible material may cause fire. Will support or initiate combustion or explosion of organic matter and other oxidizable material. Hazardous polymerization does not occur.

Conditions to avoid

- : Avoid conditions which create dust. Avoid contact with combustible material (paper, wool, oil). Avoid excessive moisture. Keep away from heat and sources of ignition. Avoid contact with incompatible materials. Do not use in areas without adequate ventilation.

Incompatible materials

- : Acids, Bases, Combustible material, Reducing agents, Organic materials, Powdered metals.

Hazardous decomposition products

- : Potassium oxides, Nitrogen oxides (NO_x), Oxygen.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

Routes of entry inhalation : YES

Routes of entry skin & eye : YES

Routes of entry Ingestion : YES

Routes of exposure skin absorption

: NO

Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation

- : Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough.

Sign and symptoms ingestion

- : Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Ingestion of large quantities of nitrates may affect oxygen transport in the blood and blood system, causing methemoglobinemia. Symptoms include: Dizziness, Drowsiness, Cyanosis, Unconsciousness.

Sign and symptoms skin

- : May cause mild skin irritation. May cause mechanical irritation. Symptoms may include mild redness and swelling.

Sign and symptoms eyes

- : May cause mild eye irritation. May cause mechanical irritation. Symptoms may include mild redness and swelling.

Potential Chronic Health Effects

- : Prolonged inhalation may cause susceptibility to respiratory illness from continued irritation.

Mutagenicity

- : Not expected to be mutagenic in humans.

Carcinogenicity

- : No component of this product present at levels greater than, or equal to, 0.1% is identified as a carcinogen or potential carcinogen by ACGIH, IARC, OSHA, or NTP.

Reproductive effects & Teratogenicity

- : Not expected to have other reproductive effects.

Sensitization to material

- : Not expected to be a skin or respiratory sensitizer.

Specific target organ effects

- : Not classified as a specific target organ toxicity-single exposure. Not classified as specific target organ toxicity-repeated exposure.

Medical conditions aggravated by overexposure

- : Pre-existing skin, eye and respiratory disorders.

Synergistic materials

- : No information available.

Potassium nitrate, Greenhouse Grade

PP-013

SDS Preparation Date (mm/dd/yyyy): 05/20/2016

Page 7 of 10

SAFETY DATA SHEET

Toxicological data : Not classified for acute toxicity based on available data. See below for toxicological data on the substance.

<u>Chemical name</u>	<u>LC₅₀(4hr)</u>	<u>LD₅₀</u>	
	<u>inh, rat</u>	<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
Potassium nitrate	N/Av	3540 mg/kg	> 5000 mg/kg

Other important toxicological hazards

: None reported by the manufacturer.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity : Not expected to be harmful to aquatic organisms. The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters. See the following tables for the substance's ecotoxicity data.

Ecotoxicity data:

<u>Ingredients</u>	<u>CAS No</u>	<u>Toxicity to Fish</u>		
		<u>LC₅₀ / 96h</u>	<u>NOEC / 21 day</u>	<u>M Factor</u>
Potassium nitrate	7757-79-1	3000 mg/L (Bluegill sunfish)	N/Av	None.

<u>Ingredients</u>	<u>CAS No</u>	<u>Toxicity to Daphnia</u>		
		<u>EC₅₀ / 48h</u>	<u>NOEC / 21 day</u>	<u>M Factor</u>
Potassium nitrate	7757-79-1	3581 mg/L (Daphnia magna)	N/Av	None.

<u>Ingredients</u>	<u>CAS No</u>	<u>Toxicity to Algae</u>		
		<u>EC₅₀ / 96h or 72h</u>	<u>NOEC / 96h or 72h</u>	<u>M Factor</u>
Potassium nitrate	7757-79-1	N/Av	N/Av	None.

Persistence and degradability

: Biodegradation is not applicable to inorganic materials.

Bioaccumulation potential

: No data is available on the product itself. See the following data for ingredient information.

<u>Components</u>	<u>Partition coefficient n-octanol/water (log K_{ow})</u>	<u>Bioconcentration factor (BCF)</u>
Potassium nitrate (CAS 7757-79-1)	<1	Not expected to bioaccumulate.

Mobility in soil

: No data is available on the product itself.

Other Adverse Environmental effects

: No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

Potassium nitrate, Greenhouse Grade

PP-013

SDS Preparation Date (mm/dd/yyyy): 05/20/2016



Page 8 of 10

SAFETY DATA SHEET

SECTION 13. DISPOSAL CONSIDERATIONS

- Handling for Disposal** : Handle in accordance with good industrial hygiene and safety practice. Since emptied containers may retain product residue, follow label warnings even after container is emptied. Refer to protective measures listed in sections 7 and 8.
- Methods of Disposal** : Dispose in accordance with all applicable federal, state, provincial and local regulations.
- RCRA** : If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

SECTION 14. TRANSPORTATION INFORMATION

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
TDG	UN1486	Potassium nitrate	5.1	III	
TDG Additional information	May be shipped as Limited Quantity when transported in containers no larger than 5.0 kg; in packages not exceeding 30 kg gross mass. Under the TDG, refer to Section 1.17 for additional exemption requirements, if shipping under this exemption.				
49CFR/DOT	UN1486	Potassium nitrate	5.1	III	
49CFR/DOT Additional information	May be shipped as Limited Quantity when transported in containers no larger than 5.0 kg; in packages not exceeding 30 kg gross mass. Refer to 49 CFR Section 173.152 for additional Limited quantity shipping requirements.				

Special precautions for user : Keep away from heat. Appropriate advice on safety must accompany the package.

Environmental hazards : This product does not meet the criteria for an environmentally hazardous mixture, according to the IMDG Code. See ECOLOGICAL INFORMATION, Section 12.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

: This information is not available.

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

Components listed below are present on the following U.S. Federal chemical lists:

<u>Ingredients</u>	CAS #	TSCA Inventory	CERCLA Reportable Quantity(RQ) (40 CFR 117.302):	SARA TITLE III: Sec. 302, Extremely Hazardous Substance, 40 CFR 355:	SARA TITLE III: Sec. 313, 40 CFR 372, Specific Toxic Chemical	
					Toxic Chemical	de minimus Concentration
Potassium nitrate	7757-79-1	Yes	N/Ap	N/Ap	No	N/Ap

SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes: Fire Hazard ;Acute Health Hazard Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds for the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

Potassium nitrate, Greenhouse Grade

PP-013

SDS Preparation Date (mm/dd/yyyy): 05/20/2016

Page 9 of 10

SAFETY DATA SHEET

US State Right to Know Laws:

The following chemicals are specifically listed by individual States:

<u>Ingredients</u>	CAS #	California Proposition 65		State "Right to Know" Lists					
		Listed	Type of Toxicity	CA	MA	MN	NJ	PA	RI
Potassium nitrate	7757-79-1	No	N/Ap	No	Yes	No	Yes	Yes	No

Canadian Information:

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

WHMIS information: Refer to Section 2 for a WHMIS Classification for this product.

International Information:

Components listed below are present on the following International Inventory list:

<u>Ingredients</u>	CAS #	European EINECS	Australia AICS	Philippines PICCS	Japan ENCS	Korea KECI/KECL	China IECSC	NewZealand IOC
Potassium nitrate	7757-79-1	231-818-8	Present	Present	(1)-449	KE-29163	Present	HSR001338

SECTION 16. OTHER INFORMATION

Legend

- : ACGIH: American Conference of Governmental Industrial Hygienists
- AICS: Australian Inventory of Chemical Substances
- CA: California
- CAS: Chemical Abstract Services
- CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
- CFR: Code of Federal Regulations
- CSA: Canadian Standards Association
- DOT: Department of Transportation
- EC50: Effective Concentration 50%.
- EINECS: European Inventory of Existing Commercial chemical Substances
- EPA: Environmental Protection Agency
- IARC: International Agency for Research on Cancer
- IECSC: Inventory of Existing Chemical Substances
- Inh: Inhalation
- IOC: Inventory of Chemicals
- KECI: Korean Existing Chemicals Inventory
- KECL: Korean Existing Chemicals List
- LC: Lethal Concentration
- LD: Lethal Dose
- MA: Massachusetts
- MN: Minnesota
- N/Ap: Not Applicable
- N/Av: Not Available
- NIOSH: National Institute of Occupational Safety and Health
- NJ: New Jersey
- NOEC: No observable effect concentration
- NTP: National Toxicology Program

Potassium nitrate, Greenhouse Grade

PP-013

SDS Preparation Date (mm/dd/yyyy): 05/20/2016

Page 10 of 10

SAFETY DATA SHEET

OSHA: Occupational Safety and Health Administration
PA: Pennsylvania
PEL: Permissible exposure limit
PICCS: Philippine Inventory of Chemicals and Chemical Substances
RCRA: Resource Conservation and Recovery Act
RTECS: Registry of Toxic Effects of Chemical Substances
SARA: Superfund Amendments and Reauthorization Act
STEL: Short Term Exposure Limit
TDG: Canadian Transportation of Dangerous Goods Act & Regulations
TLV: Threshold Limit Values
TSCA: Toxic Substance Control Act
TWA: Time Weighted Average
WHMIS: Workplace Hazardous Materials Identification System

References

- : 1. ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices (2015)
- 2. Canadian Centre for Occupational Health and Safety, CCInfoWeb Databases, 2016 (Chempendium, RTECs, HSDB, INCHEM).
- 3. IARC Monographs. Overall Evaluation of Carcinogenicity
- 4. OECD - The Global Portal to Information on Chemical Substances - eChemPortal, 2016.
- 5. US EPA Title III List of Lists: March 2015 Version
- 6. California Proposition 65 List: April 22, 2016 Version
- 7. European Chemicals Agency, Classification Legislation, 2015

Preparation Date (mm/dd/yyyy)

: 05/20/2016

Other special considerations for handling

: Provide adequate information, instruction and training for operators.

<p><u>Prepared for:</u> Direct all enquiries to: Plant Products, Inc. 50 Hazelton Street PO BOX 33 Leamington, ON, Canada N8H 3W1</p>	 <p>PLANTPRODUCTS®</p>
<p><u>Prepared by:</u> ICC The Compliance Center Inc. Telephone: (888) 442-9628 (U.S.): (888) 977-4834 (Canada) http://www.thecompliancecenter.com</p>	 <p>icc ComplianceCenter</p>

DISCLAIMER

This Safety Data Sheet was prepared by ICC The Compliance Center Inc. using information provided by / obtained from Plant Products, Inc. and CCOHS' Web Information Service. The information in the Safety Data Sheet is offered for your consideration and guidance when exposed to this product. ICC The Compliance Center Inc. and Plant Products, Inc. expressly disclaim all expressed or implied warranties and assume no responsibilities for the accuracy or completeness of the data contained herein. The data in this SDS does not apply to use with any other product or in any other process.

This Safety Data Sheet may not be changed, or altered in any way without the expressed knowledge and permission of ICC The Compliance Center Inc. and Plant Products, Inc.

END OF DOCUMENT

**Section 1: IDENTIFICATION**

Product Name: Potassium Nitrate

Synonyms: Not available.

Product Use: Fertilizer.

Restrictions on Use: Not available.

Manufacturer/Supplier: Plant Products Inc.
50 Hazelton Street
Leamington, Ontario N8H 1B8

Phone Number: 519-326-9037
Toll free number 1-800-387-2449 (English)
Toll free number 1-800-361-9184 (French)

Emergency Phone: 1-800-424-9300 (CHEMTREC, 24 hours)

Date of Preparation of SDS: December 19, 2018

Section 2: HAZARD(S) IDENTIFICATION**GHS INFORMATION**

Classification: Oxidizing Solids, Category 3

LABEL ELEMENTS

Hazard

Pictogram(s):



Signal Word: Warning

Hazard Statements: May intensify fire; oxidizer.

Precautionary Statements

Prevention: Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
Keep away from clothing and other combustible materials.
Wear protective gloves, protective clothing and eye protection.

Response: In case of fire use: Use water.

Storage: Not applicable.

Disposal: Dispose of contents/container in accordance with applicable regional, national and local laws and regulations.

Hazards Not Otherwise Classified: Not applicable.

Ingredients with Unknown Toxicity: None.

This material is considered hazardous by the OSHA Hazard Communication Standard, (29 CFR 1910.1200).



This material is considered hazardous by the Hazardous Products Regulations.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Ingredient(s)	Common name / Synonyms	CAS No.	% wt./wt.
Nitric acid potassium salt (1:1)	Potassium nitrate	7757-79-1	100

Impurities / Stabilizing additives: None known.

Section 4: FIRST-AID MEASURES

- Inhalation:** If inhaled: Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause respiratory irritation. Signs/symptoms may include burning pain in the nose and throat, coughing, wheezing, shortness of breath and pulmonary edema.
- Eye Contact:** If in eyes: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.
- Skin Contact:** If on skin: Wash with plenty of water. Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.
- Ingestion:** If swallowed: Call a poison center or doctor if you feel unwell. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.
Acute and delayed symptoms and effects: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.
- General Advice:** In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).
- Note to Physicians:** Symptoms may not appear immediately.

Section 5: FIRE-FIGHTING MEASURES

FLAMMABILITY AND EXPLOSION INFORMATION

May intensify fire; oxidizer. These substances will accelerate burning when involved in a fire. May ignite combustibles (wood, paper, oil, clothing, etc.). Containers may explode when heated. Runoff may create fire or explosion hazard.

If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

Fire involving Tanks or Car/Trailer Loads: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Cool containers with flooding quantities of water until well after



fire is out. ALWAYS stay away from tanks engulfed in fire. For massive fire, use unmanned hose holders or monitor nozzles; if this is impossible, withdraw from area and let fire burn.

Sensitivity to Mechanical Impact: This material is not sensitive to mechanical impact.

Sensitivity to Static Discharge: This material is not sensitive to static discharge.

MEANS OF EXTINCTION

Suitable Extinguishing Media: Small Fire: Use water.

Large Fire: Flood fire area with water from a distance. Do not move cargo or vehicle if cargo has been exposed to heat. Move containers from fire area if you can do it without risk.

Unsuitable Extinguishing Media: Do not use dry chemicals or foams. CO2 or Halon® may provide limited control.

Products of Combustion: Oxides of nitrogen. Ammonia.

Protection of Firefighters: Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may cause pollution. Wear positive pressure self-contained breathing apparatus (SCBA). Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection. Structural firefighters' protective clothing will only provide limited protection.

Section 6: ACCIDENTAL RELEASE MEASURES

Emergency Procedures: As an immediate precautionary measure, isolate spill or leak area in all directions for at least 25 meters (75 feet). Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering. Keep combustibles (wood, paper, oil, etc.) away from spilled material.

Personal Precautions: Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Use personal protection recommended in Section 8.

Environmental Precautions: Not normally required.

Methods for Containment: Stop leak if you can do it without risk. Do not get water inside containers.

Methods for Clean-Up: Sweep up and shovel into suitable containers for disposal.

Other Information: See Section 13 for disposal considerations.

Section 7: HANDLING AND STORAGE

Handling: Do not swallow. Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking. Keep away from clothing and other combustible materials. Wash thoroughly after handling. Do not eat, drink or smoke when using this product. See Section 8 for information on Personal Protective Equipment.



Storage:

Store away from incompatible materials. See Section 10 for information on Incompatible Materials. Keep out of the reach of children.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

Component

Potassium nitrate [CAS No. 7757-79-1]

ACGIH: 10 mg/m³ (TWA) (Inhalable.); 3 mg/m³ (TWA) (Respirable.); For Particles (Insoluble or Poorly Soluble) Not Otherwise Specified

OSHA: 15 mg/m³ (Total dust) (TWA), 5 mg/m³ (Respirable fraction) (TWA); For Particulates Not Otherwise Regulated (PNOR).

TWA: Time-Weighted Average

Engineering Controls:

Use explosion-proof electrical, ventilating, and lighting equipment.

PERSONAL PROTECTIVE EQUIPMENT (PPE)



Eye/Face Protection:

Wear chemical safety goggles. Indirect vented, dust-tight goggles are required if dust is generated when handling this product. Ensure that eyewash stations are close to the workstation location. Use equipment for eye protection that meets the standards referenced by CSA Standard CAN/CSA-Z94.3-92 and OSHA regulations in 29 CFR 1910.133 for Personal Protective Equipment.

Hand Protection:

Wear protective gloves. Consult manufacturer specifications for further information.

Skin and Body Protection:

Wear protective clothing. Flame resistant clothing that meets the NFPA 2112 and CAN/CGSB 155.20 standards is recommended in areas where material is stored or handled.

Respiratory Protection:

If engineering controls and ventilation are not sufficient to control exposure to below the allowable limits then an appropriate NIOSH/MSHA approved air-purifying respirator that meets the requirements of CSA Standard CAN/CSA-Z94.4-11, with particulate filter, or self-contained breathing apparatus must be used.

General Hygiene Considerations:

Handle according to established industrial hygiene and safety practices. Consult a competent industrial hygienist to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.

**Section 9: PHYSICAL AND CHEMICAL PROPERTIES**

Appearance:	Crystalline/powder/prills.
Colour:	White.
Odour:	Odourless.
Odour Threshold:	Not available.
Physical State:	Solid.
pH (1% solution in water):	3 to 11
Melting Point / Freezing Point:	335 °C (635 °F)
Initial Boiling Point:	Not available.
Boiling Range:	Not available.
Flash Point:	Not available.
Evaporation Rate:	Not available.
Flammability (solid, gas):	See Section 5.
Lower Flammability Limit:	Not available.
Upper Flammability Limit:	Not available.
Vapor Pressure:	< 0.001 kPa at 20 °C (68 °F)
Vapor Density:	Not available.
Relative Density:	2.11 (Water = 1)
Solubilities:	Water solubility: 100 g/L at 25 °C (77 °F).
Partition Coefficient: n-Octanol/Water:	The product is more soluble in water, log (octanol/water) < 1.
Auto-ignition Temperature:	Not available.
Decomposition Temperature:	400 °C (752 °F)
Viscosity:	Not available.
Percent Volatile, wt. %:	Not available.
VOC content, wt. %:	Not available.
Density:	Not available.
Coefficient of Water/Oil Distribution:	Not available.

Section 10: STABILITY AND REACTIVITY

Reactivity:	Contact with incompatible materials. Sources of ignition. Exposure to heat.
Chemical Stability:	Stable under normal storage conditions.



Possibility of Hazardous Reactions: None known.

Conditions to Avoid: Contact with incompatible materials. Sources of ignition. Exposure to heat.

Incompatible Materials: Reducers. Metals. Hydrocarbons. Combustible materials.

Hazardous Decomposition Products: Not available.

Section 11: TOXICOLOGICAL INFORMATION

EFFECTS OF ACUTE EXPOSURE

Product Toxicity

Oral: Not available.

Dermal: Not available.

Inhalation: Not available.

Component Toxicity

Component	CAS No.	LD ₅₀ oral	LD ₅₀ dermal	LC ₅₀
Potassium nitrate	7757-79-1	1901 mg/kg (rabbit)	Not available.	Not available.

Likely Routes of Exposure: Eye contact. Skin contact. Inhalation. Ingestion.

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system. Blood.

Symptoms (including delayed and immediate effects)

Inhalation: May cause respiratory irritation. Signs/symptoms may include burning pain in the nose and throat, coughing, wheezing, shortness of breath and pulmonary edema.

Eye: May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Skin: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

Ingestion: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Skin Sensitization: Not available.

Respiratory Sensitization: Not available.

Medical Conditions Aggravated By Exposure: Not available.

EFFECTS OF CHRONIC EXPOSURE (from short and long-term exposure)

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system. Blood.

Chronic Effects: Prolonged or repeated contact may dry skin and cause irritation.

Carcinogenicity: This product does not contain any carcinogens or potential carcinogens above reportable thresholds as listed by ACGIH, IARC, OSHA, or NTP.



Mutagenicity: Not available.

Reproductive Effects: Not available.

Developmental Effects

Teratogenicity: Not available.

Embryotoxicity: Not available.

Toxicologically Synergistic Materials: Not available.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity: Not available.

Persistence / Degradability: Not available.

Bioaccumulation / Accumulation: Potassium nitrate (CAS No. 7757-79-1): log Pow: -3.1 at 25 °C (77 °F)

Mobility in Environment: Not available.

Other Adverse Effects: Not available.

Section 13: DISPOSAL CONSIDERATIONS

Disposal Instructions: Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

Section 14: TRANSPORT INFORMATION

U.S. Department of Transportation (DOT)

Proper Shipping Name: UN1486, POTASSIUM NITRATE, 5.1, PG III

Class: 5.1

UN Number: UN1486

Packing Group: III

Label Code:



Canada Transportation of Dangerous Goods (TDG)

Proper Shipping Name: UN1486, POTASSIUM NITRATE, 5.1, PG III

Class: 5.1

UN Number: UN1486

Packing Group: III

Label Code:



Section 15: REGULATORY INFORMATION

Chemical Inventories

US (TSCA)

The components of this product are in compliance with the chemical notification requirements of TSCA.

Canada (DSL)

The components of this product are in compliance with the chemical notification requirements of the NSN Regulations under CEPA, 1999.

Federal Regulations

United States

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SARA Title III

No components are listed.

State Regulations

Massachusetts

US Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

Component	CAS No.	RTK List
Potassium nitrate	7757-79-1	Listed.

New Jersey

US New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

Component	CAS No.	RTK List
Potassium nitrate	7757-79-1	Listed.

Pennsylvania

US Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

Component	CAS No.	RTK List
Potassium nitrate	7757-79-1	Listed.

California

California Prop 65: This product does not contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Section 16: OTHER INFORMATION

Disclaimer:

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for their own particular use.

Date of Preparation of SDS: December 19, 2018

Version: 1.0

GHS SDS Prepared by: **Aegis Regulatory Inc.**

Phone: (519) 488-0351

www.aegisreg.com



Plant Products Inc.
50 Hazelton Street
PO BOX 33
Leamington, Ontario N8H 3W1
Canada

Potassium Sulphate

PP-012

SDS Preparation Date (mm/dd/yyyy): 05/20/2016

Page 1 of 10

SAFETY DATA SHEET

SECTION 1. IDENTIFICATION

Product identifier used on the label

: **Potassium Sulphate**

Product Code(s) : None assigned.

Recommended use of the chemical and restrictions on use

: Fertilizer, horticultural chemical.
Use pattern: professional use
Recommended restrictions: None known.

Chemical family : Inorganic fertilizer

Name, address, and telephone number of the manufacturer:

Plant Products Inc.

50 Hazelton Street
PO BOX 33
Leamington, Ontario, Canada
N8H 3W1

Name, address, and telephone number of the supplier:

Plant Products Inc.

50 Hazelton Street
PO BOX 33
Leamington, Ontario, Canada
N8H 3W1

Supplier's Telephone # : 519-326-9037 (Monday - Friday, 8:00 am - 5:00 pm, Eastern Standard Time)

24 Hr. Emergency Tel # : CANUTEC: 1-888-CANUTEC (1-888-226-8832)

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

Appearance: solid, crystalline - granular

Odour: Odourless.

This material is not classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Label elements

Signal Word

Not applicable.

Hazard statement(s)

Not applicable.

Precautionary statement(s)

Not applicable.

Potassium Sulphate

PP-012

SDS Preparation Date (mm/dd/yyyy): 05/20/2016

Page 2 of 10

SAFETY DATA SHEET

Other hazards

No OSHA defined hazard classes.

Other hazards which do not result in classification:

Toxic fumes, gases or vapours may evolve on burning.

Product dust may be irritating to eyes, skin and respiratory system.

Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Chronic skin contact with low concentrations may cause dermatitis.

Ecological information:

Harmful to aquatic life. Avoid release to the environment.

See Section 12 for more environmental information.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance

<u>Chemical name</u>	<u>Common name and synonyms</u>	<u>CAS #</u>	<u>Concentration (% by weight)</u>
Potassium Sulphate	Sulfuric acid, Potassium Salt	7778-80-5	100%

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

- Ingestion* : Rinse mouth thoroughly. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.
- Inhalation* : Remove exposed person to fresh air immediately. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. Get medical advice/attention if you feel unwell.
- Skin contact* : Wash off with soap and plenty of water. Remove and wash contaminated clothing before re-use. Get medical attention if irritation develops and persists.
- Eye contact* : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Remove contact lenses, if present and easy to do. Get medical attention if irritation develops and persists.

Most important symptoms and effects, both acute and delayed

- : Product dust may be irritating to eyes, skin and respiratory system.
- Direct contact with eyes may cause temporary irritation. Symptoms may include tearing, redness and discomfort.
- Direct skin contact may cause temporary redness. Symptoms may include redness, itching and swelling.
- Inhalation of dusts may cause respiratory irritation. May cause coughing and breathing difficulties.
- Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.
- Chronic skin contact with low concentrations may cause dermatitis.

Indication of any immediate medical attention and special treatment needed

- : Provide general supportive measures and treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

- : Use media suitable for the surrounding area.

Unsuitable extinguishing media

- : Do not use a solid water stream as it may scatter and spread fire.

Potassium Sulphate

PP-012

SDS Preparation Date (mm/dd/yyyy): 05/20/2016

Page 3 of 10

SAFETY DATA SHEET

Special hazards arising from the substance or mixture / Conditions of flammability

- : Not considered flammable. Toxic fumes, gases or vapours may evolve on burning. This product may form a corrosive fog, if involved in a fire. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure.

Flammability classification (OSHA 29 CFR 1910.106)

- : Not flammable.

Hazardous combustion products

- : Sulfur oxides, Potassium oxides.

Special protective equipment and precautions for firefighters

Protective equipment for fire-fighters

- : Firefighters must use standard protective equipment including flame retardant coat, helmet with face shield, gloves, rubber boots, and in enclosed spaces, SCBA. Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. Normal protective clothing (bunker gear) may not be adequate. A full-body encapsulating chemical protective suit may be necessary.

Special fire-fighting procedures

- : Move containers from fire area if safe to do so. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses. Dike for water control.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

- : Restrict access to area until completion of clean-up. Keep people away from and upwind of spill/leak. All persons dealing with the clean-up should wear the appropriate chemically protective equipment. Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Keep material, as well as water from fire-fighting efforts, from entering streams, drains and other water systems.

Methods and material for containment and cleaning up

- : Ventilate the area. Remove all sources of ignition. Prevent further leakage or spillage if safe to do so. Vacuum or sweep up spilled material using a method that does not generate airborne dust. Place in clean, dry and labeled containers. Clean surface thoroughly to remove residual contamination. After cleaning, flush away traces with water. Do not flush into surface water or sanitary sewer system. Refer to Section 13 for disposal of contaminated material. Contact the proper local authorities.

Special spill response procedures

- : For 24-hour emergency assistance, call: 1-613-996-6666 (CANUTEC). If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8802).

EPA/CERCLA Reportable quantity (RQ):
None known.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

- : Avoid dust formation. Use in a well-ventilated area. Avoid breathing dust. Wear appropriate protective equipment. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling. Keep away from incompatibles. Keep away from extreme heat and flame. Keep containers closed when not in use. Empty containers retain residue and can be dangerous.

Potassium Sulphate

PP-012

SDS Preparation Date (mm/dd/yyyy): 05/20/2016

Page 4 of 10

SAFETY DATA SHEET

- Conditions for safe storage** : Store in a cool, dry, well ventilated area. Store away from incompatible materials. Keep containers tightly closed when not in use. Keep away from heat and sources of ignition. Containers which are opened must be carefully resealed and kept upright to prevent leakage.
Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. No smoking. Inspect periodically for damage or leaks. Have appropriate fire extinguishers and spill clean-up equipment in or near storage area.
- Incompatible materials** : Strong oxidizing agents, Reducing agents, Metals.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<u>Exposure Limits:</u>				
<u>Chemical Name</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>	
	<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>
Potassium Sulphate	N/Av	N/Av	N/Av	N/Av

Exposure controls

Ventilation and engineering measures

- : Use only in well-ventilated areas. Apply technical measures to comply with the occupational exposure limits. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. In case of insufficient ventilation wear suitable respiratory equipment.

Respiratory protection

- : If engineering controls and work practices are not effective in controlling exposure to this material, then wear suitable approved respiratory protection. Use a NIOSH approved dust respirator if dust levels exceed exposure limits. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134) or CSA Z94.4-02. Advice should be sought from respiratory protection specialists.

Skin protection

- : Wear protective gloves. The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye / face protection

- : Chemical goggles should be worn if there is a potential for exposure to particles which could cause eye contact or injury.

Other protective equipment

- : Emergency showers and eyewash facilities should be nearby. Other equipment may be required depending on workplace standards.

General hygiene considerations

- : Avoid breathing dust. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. Wash hands thoroughly after using this product, and before eating, drinking or smoking. Remove and wash contaminated clothing before re-use. Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance** : solid, crystalline - granular
- Odour** : Odourless.
- Odour threshold** : N/Av
- pH** : 4.5 - 7.5 (5% solution)
- Melting/Freezing point** : 1960°F / 1069°C Melting point
- Initial boiling point and boiling range** : 3610°F / 1989°C
- Flash point** : N/Av
- Flashpoint (Method)** : N/Av

Potassium Sulphate

PP-012

SDS Preparation Date (mm/dd/yyyy): 05/20/2016

Page 5 of 10

SAFETY DATA SHEET

Evaporation rate (BuAe = 1) : N/Ap
Flammability (solid, gas) : Not considered flammable.
Lower flammable limit (% by vol.) : N/Ap
Upper flammable limit (% by vol.) : N/Ap
Oxidizing properties : None known.
Explosive properties : Not explosive
Vapour pressure : N/Ap
Vapour density : N/Ap
Relative density / Specific gravity : 2.66
Solubility in water : Soluble (111 g/l@68°F (20°C))
Other solubility(ies) : Insoluble in organic solvents.
Partition coefficient: n-octanol/water or Coefficient of water/oil distribution : N/Ap
Auto-ignition temperature : N/Ap
Decomposition temperature : N/Av
Viscosity : N/Ap
Volatiles (% by weight) : N/Ap
Volatile organic Compounds (VOC's) : N/Ap
Absolute pressure of container : N/Ap
Flame projection length : N/Ap
Other physical/chemical comments : Not sensitive to static discharge or mechanical impact under normal conditions of use and handling.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not normally reactive.
Chemical stability : Stable under normal conditions.
Possibility of hazardous reactions : Hazardous polymerization does not occur. No dangerous reaction known under conditions of normal use.
Conditions to avoid : Moisture. High humidity. Extreme heat.
Ensure adequate ventilation, especially in confined areas. Avoid contact with incompatible materials.
Incompatible materials : Strong oxidizing agents, Reducing agents, Metals.
Hazardous decomposition products : Sulfur oxides, Potassium oxides.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

Routes of entry inhalation : YES
Routes of entry skin & eye : YES
Routes of entry Ingestion : YES

Potassium Sulphate

PP-012

SDS Preparation Date (mm/dd/yyyy): 05/20/2016

Page 6 of 10

SAFETY DATA SHEET

Routes of exposure skin absorption

: NO

Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation

: Inhalation of dusts may cause respiratory irritation. May cause coughing and breathing difficulties.

Sign and symptoms ingestion

: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Sign and symptoms skin

: Direct skin contact may cause temporary redness. Symptoms may include redness, itching and swelling.

Sign and symptoms eyes

: Direct eye contact may cause irritation. Symptoms may include redness, itching and swelling.

Potential Chronic Health Effects

: Chronic skin contact with low concentrations may cause dermatitis.

Mutagenicity

: Not expected to be mutagenic in humans.

Carcinogenicity

: No component of this product present at levels greater than, or equal to, 0.1% is identified as a carcinogen or potential carcinogen by ACGIH, IARC, OSHA, or NTP.

Reproductive effects & Teratogenicity

: Not expected to cause reproductive effects.

Sensitization to material

: Not expected to be a skin or respiratory sensitizer.

Specific target organ effects

: Not classified as a specific target organ toxicity-single exposure.
Not classified as specific target organ toxicity-repeated exposure.

Medical conditions aggravated by overexposure

: Pre-existing skin, eye and respiratory disorders.

Synergistic materials

: No information available.

Toxicological data

: Not classified for acute toxicity based on available data. See below for toxicological data on the substance.

<u>Chemical name</u>	<u>LC₅₀(4hr)</u>	<u>LD₅₀</u>	
	<u>inh, rat</u>	<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
Potassium Sulphate	n/av	6600 mg/kg	>2000 mg/kg (No mortality)

Other important toxicological hazards

: None reported by the manufacturer.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

: Not expected to be harmful to aquatic organisms. The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters. See the following tables for the substance's ecotoxicity data.

Ecotoxicity data:

<u>Ingredients</u>	CAS No	<u>Toxicity to Fish</u>		
		<u>LC50 / 96h</u>	<u>NOEC / 21 day</u>	<u>M Factor</u>
Potassium Sulphate	7778-80-5	680 mg/L Fathead minnow	N/Av	None.

Potassium Sulphate

PP-012

SDS Preparation Date (mm/dd/yyyy): 05/20/2016

Page 7 of 10

SAFETY DATA SHEET

<u>Ingredients</u>	CAS No	Toxicity to Daphnia		
		EC50 / 48h	NOEC / 21 day	M Factor
Potassium Sulphate	7778-80-5	720 mg/L Daphnia magna (Water flea)	N/Av	None.

<u>Ingredients</u>	CAS No	Toxicity to Algae		
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor
Potassium Sulphate	7778-80-5	N/Av	N/Av	N/Av

Persistence and degradability

: Biodegradation is not applicable to inorganic substances.

Bioaccumulation potential

: Not expected to bioaccumulate.
See the following data for ingredient information.

<u>Components</u>	<u>Partition coefficient n-octanol/water (log Kow)</u>	<u>Bioconcentration factor (BCF)</u>
Potassium Sulphate (CAS 7778-80-5)	N/Av	Not expected to bioaccumulate.

Mobility in soil

: There is no data available for this product.

Other Adverse Environmental effects

: No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

SECTION 13. DISPOSAL CONSIDERATIONS

Handling for Disposal

: Handle in accordance with good industrial hygiene and safety practice. Since emptied containers may retain product residue, follow label warnings even after container is emptied. Refer to protective measures listed in sections 7 and 8.


Methods of Disposal

: Dispose in accordance with all applicable federal, state, provincial and local regulations.

RCRA

: If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

SECTION 14. TRANSPORTATION INFORMATION

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
49CFR/DOT	None.	Not regulated.	not regulated	none	
49CFR/DOT Additional information	None.				


Potassium Sulphate

PP-012

SDS Preparation Date (mm/dd/yyyy): 05/20/2016

Page 8 of 10

SAFETY DATA SHEET

TDG	None.	Not regulated.	not regulated	none	
TDG Additional information	None.				

Special precautions for user : Keep away from extreme heat and flame. Appropriate advice on safety must accompany the package.

Environmental hazards : This substance does not meet the criteria for an environmentally hazardous substance according to the IMDG Code. See ECOLOGICAL INFORMATION, Section 12.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
: This information is not available.

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

Components listed below are present on the following U.S. Federal chemical lists:

<u>Ingredients</u>	CAS #	TSCA Inventory	CERCLA Reportable Quantity(RQ) (40 CFR 117.302):	SARA TITLE III: Sec. 302, Extremely Hazardous Substance, 40 CFR 355:	SARA TITLE III: Sec. 313, 40 CFR 372, Specific Toxic Chemical	
					Toxic Chemical	de minimus Concentration
Potassium Sulphate	7778-80-5	Yes	N/Ap	N/Ap	No	N/Ap

SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes: None.

US State Right to Know Laws:

The following chemicals are specifically listed by individual States:

<u>Ingredients</u>	CAS #	California Proposition 65		State "Right to Know" Lists					
		Listed	Type of Toxicity	CA	MA	MN	NJ	PA	RI
Potassium Sulphate	7778-80-5	No	N/Ap	No	No	No	No	No	No

Canadian Information:

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

WHMIS information: Refer to Section 2 for a WHMIS Classification for this product.

International Information:

Components listed below are present on the following International Inventory list:

<u>Ingredients</u>	CAS #	European EINECS	Australia AICS	Philippines PICCS	Japan ENCS	Korea KECI/KECL	China IECSC	NewZealand IOC
Potassium Sulphate	7778-80-5	231-915-5	Present	Present	(1)-454	KE-29200	Present	HSR002794

Potassium Sulphate

PP-012

SDS Preparation Date (mm/dd/yyyy): 05/20/2016

Page 9 of 10

SAFETY DATA SHEET

SECTION 16. OTHER INFORMATION

Legend

: ACGIH: American Conference of Governmental Industrial Hygienists
AICS: Australian Inventory of Chemical Substances
CA: California
CAS: Chemical Abstract Services
CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR: Code of Federal Regulations
CSA: Canadian Standards Association
EC50: Effective Concentration 50%.
EINECS: European Inventory of Existing Commercial chemical Substances
ENCS: Existing and New Chemical Substances
EPA: Environmental Protection Agency
IECSC: Inventory of Existing Chemical Substances
Inh: Inhalation
IOC: Inventory of Chemicals
KECI: Korean Existing Chemicals Inventory
KECL: Korean Existing Chemicals List
LC: Lethal Concentration
LD: Lethal Dose
MA: Massachusetts
MN: Minnesota
N/Ap: Not Applicable
N/Av: Not Available
NIOSH: National Institute of Occupational Safety and Health
NJ: New Jersey
NOEC: No observable effect concentration
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
PA: Pennsylvania
PEL: Permissible exposure limit
PICCS: Philippine Inventory of Chemicals and Chemical Substances
RCRA: Resource Conservation and Recovery Act
RI: Rhode Island
SARA: Superfund Amendments and Reauthorization Act
SDS: Safety Data Sheet / MSDS: Material Safety Data Sheet
STEL: Short Term Exposure Limit
TDG: Canadian Transportation of Dangerous Goods Act & Regulations
TLV: Threshold Limit Values
TSCA: Toxic Substance Control Act
TWA: Time Weighted Average
WHMIS: Workplace Hazardous Materials Identification System

References

- : 1. ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices (2015)
2. Canadian Centre for Occupational Health and Safety, CCInfoWeb Databases, 2016 (Chempendium, RTECs, HSDB, INCHEM).
3. IARC Monographs. Overall Evaluation of Carcinogenicity
4. OECD - The Global Portal to Information on Chemical Substances - eChemPortal, 2016.
5. US EPA Title III List of Lists: March2015 Version
6. California Proposition 65 List: April 22, 2016 Version
7. European Chemicals Agency, Classification Legislation, 2015
8. Material Safety Data Sheet from manufacturer.

Preparation Date (mm/dd/yyyy)

: 05/20/2016

Potassium Sulphate

PP-012

SDS Preparation Date (mm/dd/yyyy): 05/20/2016

Page 10 of 10

SAFETY DATA SHEET

Other special considerations for handling

: Provide adequate information, instruction and training for operators.

<p><u>Prepared for:</u> Direct all enquiries to: Plant Products, Inc. 50 Hazelton Street PO BOX 33 Leamington, ON, Canada N8H 3W1</p>	 PLANTPRODUCTS®
<p><u>Prepared by:</u> ICC The Compliance Center Inc. Telephone: (888) 442-9628 (U.S.): (888) 977-4834 (Canada) http://www.thecompliancecenter.com</p>	

DISCLAIMER

This Safety Data Sheet was prepared by ICC The Compliance Center Inc. using information provided by / obtained from Plant Products, Inc. and CCOHS' Web Information Service. The information in the Safety Data Sheet is offered for your consideration and guidance when exposed to this product. ICC The Compliance Center Inc. and Plant Products, Inc. expressly disclaim all expressed or implied warranties and assume no responsibilities for the accuracy or completeness of the data contained herein. The data in this SDS does not apply to use with any other product or in any other process.

This Safety Data Sheet may not be changed, or altered in any way without the expressed knowledge and permission of ICC The Compliance Center Inc. and Plant Products, Inc.

END OF DOCUMENT

Sodium molybdate - Anhydrous

PP-015

SDS Preparation Date (mm/dd/yyyy): 06/07/2016

Page 1 of 10

SAFETY DATA SHEET

SECTION 1. IDENTIFICATION

Product identifier used on the label

: **Sodium molybdate - Anhydrous**

Product Code(s) : None assigned.

Recommended use of the chemical and restrictions on use

: Fertilizer, horticultural chemical
Use pattern: professional use
Recommended restrictions: None known.

Chemical family : Inorganic fertilizer

Name, address, and telephone number of the manufacturer:

Plant Products Inc.

50 Hazelton Street
PO BOX 33
Leamington, Ontario, Canada N8H 3W1
Manufacturer's Telephone # : 519-326-9037 (Monday - Friday, 8:00 am - 5:00 pm, Eastern Standard Time)

Name, address, and telephone number of the supplier:

Plant Products Inc.

50 Hazelton Street
PO BOX 33
Leamington, Ontario, Canada N8H 3W1
Supplier's Telephone # : 519-326-9037 (Monday - Friday, 8:00 am - 5:00 pm, Eastern Standard Time) :

24 Hr. Emergency Tel # CHEMTREC 1-800-424-9300

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

Appearance: Powder; white, opaque.
Odour: Odourless.

Most important hazards: This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Hazard classification:
Acute toxicity, Inhalation - Category 4

Label elements

Hazard pictogram(s)



Signal Word

WARNING!

Hazard statement(s)

Harmful if inhaled.

Sodium molybdate - Anhydrous

PP-015

SDS Preparation Date (mm/dd/yyyy): 06/07/2016

Page 2 of 10

SAFETY DATA SHEET

Precautionary statement(s)

Avoid breathing dust.
Use only outdoors or in a well-ventilated area.

If inhaled: Remove person to fresh air and keep comfortable for breathing.

Other hazards

No OSHA defined hazard classes.

Other hazards which do not result in classification:

Toxic fumes, gases or vapours may evolve on burning.

May cause mild skin and eye irritation.

Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Prolonged overexposure may cause liver and kidney effects.

Ecological information:

Not expected to be harmful to aquatic organisms. Avoid release to the environment. See Section 12 for more environmental information.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance

<u>Chemical name</u>	<u>Common name and synonyms</u>	<u>CAS #</u>	<u>Concentration (% by weight)</u>
Sodium molybdate	Molybdic acid, disodium salt	7631-95-0	100%

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

- Ingestion* : Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Get medical attention if irritation develops and persists.
- Inhalation* : Remove exposed person to fresh air immediately. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. Get medical attention if irritation develops and persists.
- Skin contact* : Wash off with soap and plenty of water. Remove and wash contaminated clothing before re-use. Get medical attention if irritation develops and persists.
- Eye contact* : Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Do not rub eyes. Remove contact lenses if present and easy to do. Get medical attention if irritation develops and persists.

Most important symptoms and effects, both acute and delayed

- : Harmful if inhaled. Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough. Inhalation of dusts may cause respiratory irritation. May cause mild skin and eye irritation. May cause mechanical irritation to the eyes and skin. Symptoms may include mild redness and swelling. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. Prolonged overexposure may cause liver and kidney effects.

Indication of any immediate medical attention and special treatment needed

- : Provide general supportive measures and treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

- : Use media suitable for the surrounding area.

Sodium molybdate - Anhydrous

PP-015

SDS Preparation Date (mm/dd/yyyy): 06/07/2016

Page 3 of 10

SAFETY DATA SHEET

Unsuitable extinguishing media

- : Do not use a solid water stream as it may scatter and spread the fire.

Special hazards arising from the substance or mixture / Conditions of flammability

- : Not considered flammable. Toxic fumes, gases or vapours may evolve on burning. Decomposes at high temperatures. This product has the potential to act as an oxidizer; however, no reports of oxidizing reactions were located. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure.

Flammability classification (OSHA 29 CFR 1910.106)

- : Not flammable.

Hazardous combustion products

- : Oxides of Molybdenum, Sodium.

Special protective equipment and precautions for firefighters

Protective equipment for fire-fighters

- : Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. Firefighters should wear an approved full-face, self-contained breathing apparatus (SCBA) and impervious clothing.

Special fire-fighting procedures

- : Move containers from fire area if safe to do so. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses. Dike for water control.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

- : Restrict access to area until completion of clean-up. Keep people away from and upwind of spill/leak. All persons dealing with clean-up should wear the appropriate protective equipment including self-contained breathing apparatus. Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Do not allow material to contaminate ground water system. Prevent product from entering drains, sewers, waterways and soil.

Methods and material for containment and cleaning up

- : Ventilate the area. Remove all sources of ignition. Prevent further leakage or spillage if safe to do so. Avoid dust formation. Vacuum or sweep up spilled material using a method that does not generate airborne dust. Place in clean, dry and labeled containers. Clean surface thoroughly to remove residual contamination. After cleaning, flush away traces with water. Do not flush into surface water or sanitary sewer system. Refer to Section 13 for disposal of contaminated material. Contact the proper local authorities.

Special spill response procedures

- : For 24-hour emergency assistance, call: 1-613-996-6666 (CANUTEC). If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8802).

EPA/CERCLA Reportable quantity (RQ):
None known.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

- : Avoid dust formation. Use in a well-ventilated area. Keep container tightly closed when not in use. Wear appropriate protective equipment. Avoid breathing dust. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. Do not ingest. Wash thoroughly after handling. Keep away from incompatibles. Keep away from extreme heat and flame. Empty containers retain residue and can be dangerous.

Sodium molybdate - Anhydrous

PP-015

SDS Preparation Date (mm/dd/yyyy): 06/07/2016

Page 4 of 10

SAFETY DATA SHEET

- Conditions for safe storage** : Store in a cool, dry, well ventilated area. Store away from incompatible materials. Keep away from heat and sources of ignition. Keep away from direct sunlight. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Do not store in open or unlabelled containers. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. No smoking. Inspect periodically for damage or leaks. Have appropriate fire extinguishers and spill clean-up equipment in or near storage area.
- Incompatible materials** : Strong oxidizing agents. Halogens. Nitrobenzene. Hydrochloric acid. Sodium Hydroxide.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

<u>Exposure Limits:</u>				
<u>Chemical Name</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>	
	<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>
Sodium molybdate	10 mg/m ³ (inhalable); 3 mg/m ³ (respirable) (soluble Molybdenum compounds)	N/Av	15 mg/m ³ (total dust); 5mg/m ³ (as 'Molybdenum compounds, soluble')	N/Av

Exposure controls

Ventilation and engineering measures

- : Use only in well-ventilated areas. Apply technical measures to comply with the occupational exposure limits. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. In case of insufficient ventilation wear suitable respiratory equipment.

Respiratory protection

- : If airborne concentrations are above the permissible exposure limit or are not known, use NIOSH-approved respirators. Use a NIOSH approved dust respirator if dust levels exceed exposure limits. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134) or CSA Z94.4-02. Advice should be sought from respiratory protection specialists.

Skin protection

- : Wear protective gloves. The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye / face protection

- : Chemical goggles must be worn to prevent dusts from entering the eyes. A full face shield may also be necessary.

Other protective equipment

- : Emergency showers and eyewash facilities should be nearby. Other equipment may be required depending on workplace standards.

General hygiene considerations

- : Avoid breathing dust. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. Wash hands thoroughly after using this product, and before eating, drinking or smoking. Remove and wash contaminated clothing before re-use. Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance** : Powder; white, opaque
- Odour** : Odourless.
- Odour threshold** : N/Av
- pH** : 7-10
- Melting/Freezing point** : 1268.6°F / 687°C Melting point
- Initial boiling point and boiling range** : Decomposes on heating.

Sodium molybdate - Anhydrous

PP-015

SDS Preparation Date (mm/dd/yyyy): 06/07/2016

Page 5 of 10

SAFETY DATA SHEET

Flash point : N/Ap
Flashpoint (Method) : N/Ap
Evaporation rate (BuAe = 1) : N/Ap
Flammability (solid, gas) : Not considered flammable.
Lower flammable limit (% by vol.)
: N/Ap
Upper flammable limit (% by vol.)
: N/Ap
Oxidizing properties : This product has the potential to act as an oxidizer; however, no reports of oxidizing reactions were located
Explosive properties : Not explosive
Vapour pressure : negligible
Vapour density : N/Ap
Relative density / Specific gravity
: 2.59 @ 20°C / 68°F
Solubility in water : Soluble: 840 g/l@ 20°C / 68°F
Other solubility(ies) : N/Av
Partition coefficient: n-octanol/water or Coefficient of water/oil distribution
: N/Av
Auto-ignition temperature : N/Ap
Decomposition temperature : 100°C / 212°F
Viscosity : N/Ap
Volatiles (% by weight) : N/Av
Volatile organic Compounds (VOC's)
: N/Av
Absolute pressure of container
: N/Ap
Flame projection length : N/Ap
Other physical/chemical comments
: Not sensitive to static discharge or mechanical impact under normal conditions of use and handling.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not normally reactive. This product has the potential to act as an oxidizer; however, no reports of oxidizing reactions were located
Chemical stability : Stable under normal conditions. Decomposes on heating.
Possibility of hazardous reactions
: Hazardous polymerization does not occur. No dangerous reaction known under conditions of normal use.
Conditions to avoid : Avoid dust formation. Avoid contact with incompatible materials. Do not use in areas without adequate ventilation. Keep away from extreme heat and flame.
Incompatible materials : Strong oxidizing agents. Halogens. Nitrobenzene. Hydrochloric acid. Sodium Hydroxide.
Hazardous decomposition products
: Oxides of Molybdenum, Sodium.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

Routes of entry inhalation : YES
Routes of entry skin & eye : YES

Sodium molybdate - Anhydrous

PP-015

SDS Preparation Date (mm/dd/yyyy): 06/07/2016

Page 6 of 10

SAFETY DATA SHEET

Routes of entry Ingestion : YES

Routes of exposure skin absorption
: NO

Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation

: Harmful if inhaled. Inhalation of dust may cause shortness of breath, tightness of the chest, a sore throat and cough. Inhalation of dusts may cause respiratory irritation.

Sign and symptoms ingestion

: Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Sign and symptoms skin

: May cause mild skin irritation. Contact with dust can cause mechanical irritation or drying of the skin. Symptoms may include mild redness and swelling.

Sign and symptoms eyes

: May cause mild eye irritation. Dust contact with the eyes can lead to mechanical irritation. Symptoms may include mild redness and swelling.

Potential Chronic Health Effects

: Prolonged overexposure may cause liver and kidney effects.

Mutagenicity

: Not expected to be mutagenic in humans.

Carcinogenicity

: No component of this product present at levels greater than, or equal to, 0.1% is identified as a carcinogen or potential carcinogen by ACGIH, IARC, OSHA, or NTP.

Reproductive effects & Teratogenicity

: Not expected to cause reproductive effects.

Sensitization to material

: Not expected to be a skin or respiratory sensitizer.

Specific target organ effects

: Not classified as a specific target organ toxicity-single exposure.
Not classified as specific target organ toxicity-repeated exposure.

Medical conditions aggravated by overexposure

: Pre-existing skin, eye and respiratory disorders.

Synergistic materials

: No information available.

Toxicological data

: This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015). Classification:

Acute toxicity (Inhalation) - Category 4. Harmful if inhaled.

See below for toxicological data on the substance.

<u>Chemical name</u>	<u>LC₅₀(4hr)</u> <u>inh, rat</u>	<u>LD₅₀</u>	
		<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
Sodium molybdate	> 1.93 mg/L (dust) (No mortality)	4233 mg/kg	> 2000 mg/kg (No mortality)

Other important toxicological hazards

: None reported by the manufacturer.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity

: Not expected to be harmful to aquatic organisms. The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters. See the following tables for the substance's ecotoxicity data.

Sodium molybdate - Anhydrous

PP-015

SDS Preparation Date (mm/dd/yyyy): 06/07/2016

Page 7 of 10

SAFETY DATA SHEET

Ecotoxicity data:

<u>Ingredients</u>	CAS No	Toxicity to Fish		
		LC50 / 96h	NOEC / 21 day	M Factor
Sodium molybdate	7631-95-0	609.1 mg/L (Rainbow trout) (Read-across)	200 mg/L/32-day	None.

<u>Ingredients</u>	CAS No	Toxicity to Daphnia		
		EC50 / 48h	NOEC / 21 day	M Factor
Sodium molybdate	7631-95-0	130.9 mg/L (Daphnia magna)	368.3 mg/L (Read-across)	None.

<u>Ingredients</u>	CAS No	Toxicity to Algae		
		EC50 / 96h or 72h	NOEC / 96h or 72h	M Factor
Sodium molybdate	7631-95-0	362.9 mg/L/72hr (Green algae)	27 mg/L/72hr (Read-across)	None.

Persistence and degradability

: Biodegradation is not applicable to inorganic substances.

Bioaccumulation potential

: See the following data for ingredient information.

<u>Components</u>	<u>Partition coefficient n-octanol/water (log Kow)</u>	<u>Bioconcentration factor (BCF)</u>
Sodium molybdate (CAS 7631-95-0)	N/Ap	N/Ap

Mobility in soil

: There is no data available for this product.

Other Adverse Environmental effects

: No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

SECTION 13. DISPOSAL CONSIDERATIONS

Handling for Disposal

: Handle in accordance with good industrial hygiene and safety practice. Since emptied containers may retain product residue, follow label warnings even after container is emptied. Refer to protective measures listed in sections 7 and 8.

Methods of Disposal

: Dispose in accordance with all applicable federal, state, provincial and local regulations.

RCRA

: If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

Sodium molybdate - Anhydrous

PP-015

SDS Preparation Date (mm/dd/yyyy): 06/07/2016

Page 8 of 10

SAFETY DATA SHEET

SECTION 14. TRANSPORTATION INFORMATION

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
49CFR/DOT	None.	Not regulated.	not regulated	none	
49CFR/DOT Additional information	None.				
TDG	None.	Not regulated.	not regulated	none	
TDG Additional information	None.				

Special precautions for user : Keep away from extreme heat and flame. Appropriate advice on safety must accompany the package.

Environmental hazards : This substance does not meet the criteria for an environmentally hazardous substance according to the IMDG Code. See ECOLOGICAL INFORMATION, Section 12.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code
: This information is not available.

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

Components listed below are present on the following U.S. Federal chemical lists:

<u>Ingredients</u>	CAS #	TSCA Inventory	CERCLA Reportable Quantity(RQ) (40 CFR 117.302):	SARA TITLE III: Sec. 302, Extremely Hazardous Substance, 40 CFR 355:	SARA TITLE III: Sec. 313, 40 CFR 372, Specific Toxic Chemical	
					Toxic Chemical	de minimus Concentration
Sodium molybdate	7631-95-0	Yes	N/Ap	N/Ap	No	N/Ap

SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes: Immediate (Acute) health hazard. Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds for the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

US State Right to Know Laws:

The following chemicals are specifically listed by individual States:

<u>Ingredients</u>	CAS #	California Proposition 65		State "Right to Know" Lists					
		Listed	Type of Toxicity	CA	MA	MN	NJ	PA	RI
Sodium molybdate	7631-95-0	No	N/Ap	No	No	No	No	No	No

Sodium molybdate - Anhydrous

PP-015

SDS Preparation Date (mm/dd/yyyy): 06/07/2016

Page 9 of 10

SAFETY DATA SHEET

Canadian Information:

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

WHMIS information: Refer to Section 2 for a WHMIS Classification for this product.

International Information:

Components listed below are present on the following International Inventory list:

<u>Ingredients</u>	<u>CAS #</u>	<u>European EINECS</u>	<u>Australia AICS</u>	<u>Philippines PICCS</u>	<u>Japan ENCS</u>	<u>Korea KECI/KECL</u>	<u>China IECSC</u>	<u>NewZealand IOC</u>
Sodium molybdate	7631-95-0	231-551-7	Present	Present	(1)-478	KE-12357	Present	HSR004007

SECTION 16. OTHER INFORMATION

Legend

: ACGIH: American Conference of Governmental Industrial Hygienists
AICS: Australian Inventory of Chemical Substances
CA: California
CAS: Chemical Abstract Services
CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
CFR: Code of Federal Regulations
CSA: Canadian Standards Association
EC50: Effective Concentration 50%.
EINECS: European Inventory of Existing Commercial chemical Substances
ENCS: Existing and New Chemical Substances
EPA: Environmental Protection Agency
IECSC: Inventory of Existing Chemical Substances
Inh: Inhalation
IOC: Inventory of Chemicals
KECI: Korean Existing Chemicals Inventory
KECL: Korean Existing Chemicals List
LC: Lethal Concentration
LD: Lethal Dose
MA: Massachusetts
MN: Minnesota
N/Ap: Not Applicable
N/Av: Not Available
NIOSH: National Institute of Occupational Safety and Health
NJ: New Jersey
NOEC: No observable effect concentration
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
PA: Pennsylvania
PEL: Permissible exposure limit
PICCS: Philippine Inventory of Chemicals and Chemical Substances
RCRA: Resource Conservation and Recovery Act
RI: Rhode Island
SARA: Superfund Amendments and Reauthorization Act
SDS: Safety Data Sheet / MSDS: Material Safety Data Sheet
STEL: Short Term Exposure Limit
TDG: Canadian Transportation of Dangerous Goods Act & Regulations
TLV: Threshold Limit Values
TSCA: Toxic Substance Control Act
TWA: Time Weighted Average

Sodium molybdate - Anhydrous

PP-015

SDS Preparation Date (mm/dd/yyyy): 06/07/2016

Page 10 of 10

SAFETY DATA SHEET

- References** :
- WHMIS: Workplace Hazardous Materials Identification System
1. ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices (2015)
 2. Canadian Centre for Occupational Health and Safety, CCHInfoWeb Databases, 2016 (Chempendium, RTECs, HSDB, INCHEM).
 3. European Chemicals Agency, Classification Legislation, 2016.
 4. OECD - The Global Portal to Information on Chemical Substances - eChemPortal, 2016.
 5. US EPA Title III List of Lists: March2015 Version
 6. California Proposition 65 List: May20, 2016 Version
 7. Safety Data Sheet from manufacturer.

Preparation Date (mm/dd/yyyy)

: 06/07/2016

Other special considerations for handling

: Provide adequate information, instruction and training for operators.

<p><u>Prepared for:</u> Direct all enquiries to: Plant Products, Inc. 50 Hazelton Street PO BOX 33 Leamington, ON, Canada N8H 3W1</p>	 PLANTPRODUCTS®
<p><u>Prepared by:</u> ICC The Compliance Center Inc. Telephone: (888) 442-9628 (U.S.): (888) 977-4834 (Canada) http://www.thecompliancecenter.com</p>	 icc ComplianceCenter

DISCLAIMER

This Safety Data Sheet was prepared by ICC The Compliance Center Inc. using information provided by / obtained from Plant Products, Inc. and CCOHS' Web Information Service. The information in the Safety Data Sheet is offered for your consideration and guidance when exposed to this product. ICC The Compliance Center Inc. and Plant Products, Inc. expressly disclaim all expressed or implied warranties and assume no responsibilities for the accuracy or completeness of the data contained herein. The data in this SDS does not apply to use with any other product or in any other process.

This Safety Data Sheet may not be changed, or altered in any way without the expressed knowledge and permission of ICC The Compliance Center Inc. and Plant Products, Inc.

END OF DOCUMENT



Section 1: IDENTIFICATION

Product Name: Solupotasse

Synonyms: Not available.

Product Use: Fertilizer.

Restrictions on Use: Not available.

Manufacturer/Supplier: Plant Products Inc.
50 Hazelton Street
Leamington, Ontario N8H 1B8

Phone Number: 519-326-9037
Toll free number 1-800-387-2449 (English)
Toll free number 1-800-361-9184 (French)

Emergency Phone: 1-800-424-9300 (CHEMTREC, 24 hours)

Date of Preparation of SDS: December 19, 2018

Section 2: HAZARD(S) IDENTIFICATION

GHS INFORMATION

Classification: Eye Damage, Category 1

LABEL ELEMENTS

Hazard

Pictogram(s):



Signal Word: Danger

Hazard Statements: Causes serious eye damage.

Precautionary Statements

Prevention: Wear protective gloves, protective clothing, eye protection and face protection.

Response: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.

Storage: Not applicable.

Disposal: Not applicable.

Hazards Not Otherwise Classified: Not applicable.

Ingredients with Unknown Toxicity: None.

This material is considered hazardous by the OSHA Hazard Communication Standard, (29 CFR 1910.1200).

This material is considered hazardous by the Hazardous Products Regulations.



Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Ingredient(s)	Common name / Synonyms	CAS No.	% wt./wt.
Sulfuric acid potassium salt (1:2)	Potassium sulfate	7778-80-5	85 - 90
Sulfuric acid, potassium salt (1:1)	Potassium bisulfate	7646-93-7	10 - 15

Section 4: FIRST-AID MEASURES

Inhalation: If inhaled: Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Eye Contact: If in eyes: Rinse cautiously with water for at least 30 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor.
Acute and delayed symptoms and effects: Causes serious eye damage. Signs/symptoms may include cloudy appearance of the cornea, chemical burns, severe pain, tearing, ulcerations, significantly impaired vision or complete loss of vision.

Skin Contact: If on skin: Wash with plenty of water. Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

Ingestion: If swallowed: Call a poison center or doctor if you feel unwell. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.
Acute and delayed symptoms and effects: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

General Advice: In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

Note to Physicians: Symptoms may not appear immediately.

Section 5: FIRE-FIGHTING MEASURES

FLAMMABILITY AND EXPLOSION INFORMATION

Not flammable or combustible by OSHA/WHMIS criteria.

Sensitivity to Mechanical Impact: This material is not sensitive to mechanical impact.

Sensitivity to Static Discharge: This material is not sensitive to static discharge.

MEANS OF EXTINCTION

Suitable Extinguishing Media: Small Fire: Dry chemical, CO2, water spray or regular foam.
Large Fire: Water spray, fog or regular foam. Move containers from fire area if you can do it without risk.



Unsuitable Extinguishing Media: Not available.

Products of Combustion: Oxides of sulphur. Potassium oxide. Potassium oxide.

Protection of Firefighters: Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may cause pollution. Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

Section 6: ACCIDENTAL RELEASE MEASURES

Emergency Procedures: Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering.

Personal Precautions: Do not touch or walk through spilled material. Use personal protection recommended in Section 8.

Environmental Precautions: Keep out of drains, sewers, ditches, and waterways.

Methods for Containment: Do not flush to sewer or allow to enter waterways.

Methods for Clean-Up: Sweep up and shovel into suitable containers for disposal.

Other Information: See Section 13 for disposal considerations.

Section 7: HANDLING AND STORAGE

Handling:
Do not swallow. Wash thoroughly after handling. See Section 8 for information on Personal Protective Equipment.

Storage:
Store away from incompatible materials. See Section 10 for information on Incompatible Materials. Keep out of the reach of children.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

**Exposure Guidelines
Component**

Potassium sulfate [CAS No. 7778-80-5]
ACGIH: 10 mg/m³ (TWA) (Inhalable.); 3 mg/m³ (TWA) (Respirable.); For Particles (Insoluble or Poorly Soluble) Not Otherwise Specified
OSHA: 15 mg/m³ (Total dust) (TWA), 5 mg/m³ (Respirable fraction) (TWA); For Particulates Not Otherwise Regulated (PNOR).

Potassium bisulfate [CAS No. 7646-93-7]
ACGIH: 10 mg/m³ (TWA) (Inhalable.); 3 mg/m³ (TWA) (Respirable.); For Particles (Insoluble or Poorly Soluble) Not Otherwise Specified
OSHA: 15 mg/m³ (Total dust) (TWA), 5 mg/m³ (Respirable fraction) (TWA); For Particulates Not Otherwise Regulated (PNOR).

TWA: Time-Weighted Average

Engineering Controls: Not normally required.

PERSONAL PROTECTIVE EQUIPMENT (PPE)



- Eye/Face Protection:** Wear chemical safety goggles. Indirect vented, dust-tight goggles are required if dust is generated when handling this product. Ensure that eyewash stations and safety showers are close to the workstation location. Use equipment for eye protection that meets the standards referenced by CSA Standard CAN/CSA-Z94.3-92 and OSHA regulations in 29 CFR 1910.133 for Personal Protective Equipment.
- Hand Protection:** Wear protective gloves. Consult manufacturer specifications for further information.
- Skin and Body Protection:** Wear protective clothing.
- Respiratory Protection:** If engineering controls and ventilation are not sufficient to control exposure to below the allowable limits then an appropriate NIOSH/MSHA approved air-purifying respirator that meets the requirements of CSA Standard CAN/CSA-Z94.4-11, with particulate filter, or self-contained breathing apparatus must be used.
- General Hygiene Considerations:** Handle according to established industrial hygiene and safety practices. Consult a competent industrial hygienist to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Crystalline solid, powder.
Colour:	Colourless to white.
Odour:	Odourless.
Odour Threshold:	Not available.
Physical State:	Solid.
pH:	Not available.
Melting Point / Freezing Point:	1067 °C (1952.6 °F)
Initial Boiling Point:	1689 °C (3072.2 °F)
Boiling Range:	Not available.
Flash Point:	Not available.
Evaporation Rate:	Not available.
Flammability (solid, gas):	See Section 5.



Lower Flammability Limit: Not available.
Upper Flammability Limit: Not available.
Vapor Pressure: Not available.
Vapor Density: Not available.
Relative Density: Not available.
Solubilities: Soluble in water.
Partition Coefficient: n-Octanol/Water: Not available.
Auto-ignition Temperature: Not available.
Decomposition Temperature: Not available.
Viscosity: Not available.
Percent Volatile, wt. %: Not available.
VOC content, wt. %: Not available.
Density: 1210 kg/m³
Coefficient of Water/Oil Distribution: Not available.

Section 10: STABILITY AND REACTIVITY

Reactivity: Contact with incompatible materials. Exposure to heat.
Chemical Stability: Stable under normal storage conditions.
Possibility of Hazardous Reactions: None known.
Conditions to Avoid: Contact with incompatible materials. Exposure to heat.
Incompatible Materials: Strong bases. Strong oxidizers. Alcohols. Aluminum. Metals.
Hazardous Decomposition Products: Not available.

Section 11: TOXICOLOGICAL INFORMATION

EFFECTS OF ACUTE EXPOSURE

Product Toxicity

Oral: Not available.
Dermal: Not available.
Inhalation: Not available.

Component Toxicity

Component	CAS No.	LD ₅₀ oral	LD ₅₀ dermal	LC ₅₀
Potassium sulfate	7778-80-5	6600 mg/kg (rat)	Not available.	Not available.
Potassium bisulfate	7646-93-7	2340 mg/kg (rat)	Not available.	Not available.



Likely Routes of Exposure: Eye contact. Skin contact. Inhalation. Ingestion.

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system.

Symptoms (including delayed and immediate effects)

Inhalation: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Eye: Causes serious eye damage. Signs/symptoms may include cloudy appearance of the cornea, chemical burns, severe pain, tearing, ulcerations, significantly impaired vision or complete loss of vision.

Skin: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

Ingestion: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Skin Sensitization: **Potassium sulphate:**
Mouse (female) (OECD 429): Not sensitizing.

Respiratory Sensitization: Not available.

Medical Conditions Aggravated By Exposure: Not available.

EFFECTS OF CHRONIC EXPOSURE (from short and long-term exposure)

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system.

Chronic Effects: Prolonged or repeated contact may dry skin and cause irritation.

Potassium sulphate:
NOAEL ≥ 1500 mg/kg bw/day, 28 day(s), rat (male/female) (OECD 422) - No adverse systemic effects;
NOAEL = 256 mg/kg bw/day, 52 day(s), rat (male) (OECD 453) - No adverse systemic effects;
NOAEL = 284 mg/kg bw/day, 52 day(s), rat (female) (OECD 453) - No adverse systemic effects.

Carcinogenicity: This product does not contain any carcinogens or potential carcinogens above reportable thresholds as listed by ACGIH, IARC, OSHA, or NTP.

Potassium sulphate:
Carcinogenicity:
Oral: 104 week(s), rat (male/female) (Equivalent to OECD 453) - No adverse systemic effects.

Mutagenicity: **Potassium sulphate:**
Mutagenicity (in vivo):
Bacteria (*S.typhimurium*): Negative (OECD 471);
Bacteria (*E. coli*): Negative (OECD 471).

Mutagenicity (in vitro):
Chinese hamster ovary (CHO): Negative (OECD 473);
Mouse (lymphoma L5178Y cells): Negative (OECD 476).



Reproductive Effects: **Potassium sulphate:**
Developmental toxicity:
 NOAEL ≥ 1500 mg/kg bw/day, 28 day(s), rat (male) (OECD 422) - No adverse systemic effects;
 NOAEL ≥ 1500 mg/kg bw/day, 53 day(s), rat (female) (OECD 422) - No adverse systemic effects.
Effects on fertility:
 NOAEL ≥ 1500 mg/kg bw/day, 28 day(s), rat (male/female) (OECD 422) - No adverse systemic effects.

Developmental Effects
Teratogenicity: Not available.
Embryotoxicity: Not available.

Toxicologically Synergistic Materials: Not available.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity: **Potassium sulphate:**
 Pimephales promelas: LC50 = 680 mg/L, 96 hr, static, fresh water (EPA 600/4-90/027);
 Daphnia magna: LC50 = 720 mg/L, 48 hr, static, fresh water (EPA 600/4-90/027);
 Chlorella vulgaris: EC50 = 2700 mg/L, 18 d, static, fresh water;
 Bacteria: EC50 > 100 mg/L;
 Bacteria: NOEC = 100 mg/L.
Potassium bisulfate:
 Leuciscus idus: LC50 = 3500 mg/L.

Persistence / Degradability: Not available.
Bioaccumulation / Accumulation: Not available.
Mobility in Environment: Low potential for absorption in soil.
Other Adverse Effects: Not available.

Section 13: DISPOSAL CONSIDERATIONS

Disposal Instructions: Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

Section 14: TRANSPORT INFORMATION

U.S. Department of Transportation (DOT)
Proper Shipping Name: Not regulated.
Class: Not applicable.
UN Number: Not applicable.
Packing Group: Not applicable.
Label Code: Not applicable.



Canada Transportation of Dangerous Goods (TDG)

Proper Shipping Name: Not regulated.

Class: Not applicable.

UN Number: Not applicable.

Packing Group: Not applicable.

Label Code: Not applicable.

Section 15: REGULATORY INFORMATION

Chemical Inventories

US (TSCA)

The components of this product are in compliance with the chemical notification requirements of TSCA.

Canada (DSL)

The components of this product are in compliance with the chemical notification requirements of the NSN Regulations under CEPA, 1999.

Federal Regulations

United States

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SARA Title III

No components are listed.

State Regulations

Massachusetts

US Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

No components are listed.

New Jersey

US New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

Component	CAS No.	RTK List
Potassium bisulfate	7646-93-7	SHHS

Note: SHHS = Special Health Hazard Substance

Pennsylvania

US Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

No components are listed.

California

California Prop 65: This product does not contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Section 16: OTHER INFORMATION

Disclaimer:

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for their own particular use.

Date of Preparation of SDS: December 19, 2018

Version: 1.0

GHS SDS Prepared by: **Aegis Regulatory Inc.**

Phone: (519) 488-0351

www.aegisreg.com



Section 1: IDENTIFICATION

Product Name: Urea

Synonyms: Not available.

Product Use: Fertilizer.

Restrictions on Use: Not available.

Manufacturer/Supplier: Plant Products Inc.
50 Hazelton Street
Leamington, Ontario N8H 1B8

Phone Number: 519-326-9037
Toll free number 1-800-387-2449 (English)
Toll free number 1-800-361-9184 (French)

Emergency Phone: 1-800-424-9300 (CHEMTREC, 24 hours)

Date of Preparation of SDS: December 19, 2018

Section 2: HAZARD(S) IDENTIFICATION

GHS INFORMATION

Classification: Skin Irritation, Category 2
Eye Irritation, Category 2A
Specific Target Organ Toxicity (Single Exposure), Category 3 - Respiratory Irritation

LABEL ELEMENTS

Hazard

Pictogram(s):



Signal Word: Warning

Hazard Statements: Causes skin irritation.
Causes serious eye irritation.
May cause respiratory irritation.

Precautionary Statements

Prevention: Avoid breathing dust.
Wash thoroughly after handling.
Use only outdoors or in a well-ventilated area.
Wear protective gloves, protective clothing and eye protection.

Response: IF ON SKIN: Wash with plenty of water.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Call a POISON CENTER or doctor if you feel unwell.
If skin irritation occurs: Get medical advice/attention.
If eye irritation persists: Get medical advice/attention.
Take off contaminated clothing and wash it before reuse.



Storage: Store in a well-ventilated place. Keep container tightly closed. Store locked up.

Disposal: Dispose of contents/container in accordance with applicable regional, national and local laws and regulations.

Hazards Not Otherwise Classified: Not applicable.

Ingredients with Unknown Toxicity: 4% of this product mixture consists of ingredient(s) of unknown acute toxicity.

This material is considered hazardous by the OSHA Hazard Communication Standard, (29 CFR 1910.1200).

This material is considered hazardous by the Hazardous Products Regulations.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Ingredient(s)	Common name / Synonyms	CAS No.	% wt./wt.
Urea	Not available.	57-13-6	97.5 - 99.7
Methylenediurea	Not available.	13547-17-6	0.1 - 2.5
Imidodicarbonic diamide	Not available.	108-19-0	0.1 - 1.5

Section 4: FIRST-AID MEASURES

Inhalation: If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center or doctor if you feel unwell.

Acute and delayed symptoms and effects: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Eye Contact: If in eyes: Rinse cautiously with water for at least 20 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Acute and delayed symptoms and effects: Causes serious eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Skin Contact: If on skin: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash it before reuse.

Acute and delayed symptoms and effects: Causes skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

Ingestion: If swallowed: Call a poison center or doctor if you feel unwell. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.

Acute and delayed symptoms and effects: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.



General Advice: In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

Note to Physicians: Symptoms may not appear immediately.

Section 5: FIRE-FIGHTING MEASURES

FLAMMABILITY AND EXPLOSION INFORMATION

Not flammable or combustible by OSHA/WHMIS criteria. Material will burn at high temperatures.

Sensitivity to Mechanical Impact: This material is not sensitive to mechanical impact.

Sensitivity to Static Discharge: This material is not sensitive to static discharge.

MEANS OF EXTINCTION

Suitable Extinguishing Media: Small Fire: Dry chemical, CO2, water spray or regular foam.

Large Fire: Water spray, fog or regular foam. Move containers from fire area if you can do it without risk.

Unsuitable Extinguishing Media: Not available.

Products of Combustion: Oxides of carbon. Oxides of nitrogen. Ammonia. Biuret.

Protection of Firefighters: Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may cause pollution. Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

Section 6: ACCIDENTAL RELEASE MEASURES

Emergency Procedures: Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering.

Personal Precautions: Do not touch or walk through spilled material. Use personal protection recommended in Section 8.

Environmental Precautions: Keep out of drains, sewers, ditches, and waterways.

Methods for Containment: Do not flush to sewer or allow to enter waterways.

Methods for Clean-Up: Sweep up and shovel into suitable containers for disposal.

Other Information: See Section 13 for disposal considerations.

Section 7: HANDLING AND STORAGE

Handling:

Do not swallow. Avoid breathing dust. Wash thoroughly after handling. Use only outdoors or in a well-ventilated area. See Section 8 for information on Personal Protective Equipment.

Storage:

Store in a well-ventilated place. Keep container tightly closed. Store locked up. Store away from incompatible materials. See Section 10 for information on Incompatible Materials. Keep out of the reach of children.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

**Exposure Guidelines
Component**

Urea [CAS No. 57-13-6]

ACGIH: 10 mg/m³ (TWA) (Inhalable.); 3 mg/m³ (TWA) (Respirable.); For Particles (Insoluble or Poorly Soluble) Not Otherwise Specified

OSHA: 15 mg/m³ (Total dust) (TWA), 5 mg/m³ (Respirable fraction) (TWA); For Particulates Not Otherwise Regulated (PNOR).

Methylenediurea [CAS No. 13547-17-6]

ACGIH: No TLV established.

OSHA: No PEL established.

Biuret [CAS No. 108-19-0]

ACGIH: No TLV established.

OSHA: No PEL established.

PEL: Permissible Exposure Limit

TLV: Threshold Limit Value

TWA: Time-Weighted Average

Engineering Controls: Not normally required.

PERSONAL PROTECTIVE EQUIPMENT (PPE)



Eye/Face Protection: Wear chemical safety goggles. Indirect vented, dust-tight goggles are required if dust is generated when handling this product. Ensure that eyewash stations are close to the workstation location. Use equipment for eye protection that meets the standards referenced by CSA Standard CAN/CSA-Z94.3-92 and OSHA regulations in 29 CFR 1910.133 for Personal Protective Equipment.

Hand Protection: Wear protective gloves. Consult manufacturer specifications for further information.

Skin and Body Protection: Wear protective clothing.

Respiratory Protection: If engineering controls and ventilation are not sufficient to control exposure to below the allowable limits then an appropriate NIOSH/MSHA approved air-purifying respirator that meets the requirements of CSA Standard CAN/CSA-Z94.4-11, with particulate filter, or self-contained breathing apparatus must be used.

General Hygiene Considerations: Handle according to established industrial hygiene and safety practices. Consult a competent industrial hygienist to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.

**Section 9: PHYSICAL AND CHEMICAL PROPERTIES**

Appearance:	White granules.
Colour:	White.
Odour:	Slight ammonia.
Odour Threshold:	Not available.
Physical State:	Solid.
pH (100 g/L):	7.2
Melting Point / Freezing Point:	Not available.
Initial Boiling Point:	Not available.
Boiling Range:	Not available.
Flash Point:	Not available.
Evaporation Rate:	Not available.
Flammability (solid, gas):	See Section 5.
Lower Flammability Limit:	Not available.
Upper Flammability Limit:	Not available.
Vapor Pressure:	80 Pa at 20 °C (68 °F)
Vapor Density:	Not available.
Relative Density:	Not available.
Solubilities:	Water solubility: 1,193 g/L at 25 °C (77 °F).
Partition Coefficient: n-Octanol/Water:	log Pow -1.59 @ 20 °C (68 °F)
Auto-ignition Temperature:	Not available.
Decomposition Temperature:	> 132.6 °C (270.7 °F)
Viscosity:	Not available.
Percent Volatile, wt. %:	Not available.
VOC content, wt. %:	Not available.
Bulk Density:	750 kg/m ³
Coefficient of Water/Oil Distribution:	Not available.

Section 10: STABILITY AND REACTIVITY

Reactivity:	Contact with incompatible materials. Exposure to heat.
Chemical Stability:	Stable under normal storage conditions.
Possibility of Hazardous Reactions:	None known.



Conditions to Avoid: Contact with incompatible materials. Exposure to heat.

Incompatible Materials: Strong acids. Strong bases. Strong oxidizers. Nitrates. Hypochlorites.

Hazardous Decomposition Products: Not available.

Section 11: TOXICOLOGICAL INFORMATION

EFFECTS OF ACUTE EXPOSURE

Product Toxicity

Oral: Not available.

Dermal: Not available.

Inhalation: Not available.

Component Toxicity

Component	CAS No.	LD ₅₀ oral	LD ₅₀ dermal	LC ₅₀
Urea	57-13-6	8471 mg/kg (rat)	Not available.	Not available.
Methylenediurea	13547-17-6	Not available.	Not available.	Not available.
Biuret	108-19-0	Not available.	Not available.	Not available.

Likely Routes of Exposure: Eye contact. Skin contact. Inhalation. Ingestion.

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system.

Symptoms (including delayed and immediate effects)

Inhalation: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Eye: Causes serious eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Skin: Causes skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

Ingestion: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Skin Sensitization: Not available.

Respiratory Sensitization: Not available.

Medical Conditions Aggravated By Exposure: Not available.

EFFECTS OF CHRONIC EXPOSURE (from short and long-term exposure)

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system.

Chronic Effects: Prolonged or repeated contact may dry skin and cause irritation.

Carcinogenicity: This product does not contain any carcinogens or potential carcinogens above reportable thresholds as listed by ACGIH, IARC, OSHA, or NTP.



Mutagenicity: *Salmonella typhimurium* - Bacterial reverse mutation assay: Negative.
 Chinese Hamster – Chromosomal aberration test: Positive (very high dose);
 Mouse: Positive (very high dose).
 Non-Bacterial Genetic Toxicity In-Vitro: Chromosomal Aberration:
 Mouse – Bone Marrow Cytogenetic test: Positive (extremely high dose).

Reproductive Effects: No toxic effects on mouse gonads up to 6,750 mg/kg/day.
 No toxic effects on rat gonads up to 2,250 mg/kg/day.

Developmental Effects
Teratogenicity: Not teratogenic.

Embryotoxicity: Not available.

Toxicologically Synergistic Materials: Not available.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity: *Barillius barna*: LC50 = > 9,100 mg/L, 96 hr;
Daphnia magna: EC50: > 10,000 mg/L, 24 hr;
Scenadesmus quadricauda: 192-hr cell multiplication inhibition test-TT > 10,000 mg/L.

Persistence / Degradability: Ultimately biodegradable (OECDTG 302B) 93-98% (SCAS 24 hr).

Bioaccumulation / Accumulation: Not available.

Mobility in Environment: Stability in Water: T1/2 > 1 year.
 Stability in Soil: No data available
 Transport and Distribution: 0.16% in air; 99.84% in water (calculated (Fugacity Level I)).

Other Adverse Effects: Not available.

Section 13: DISPOSAL CONSIDERATIONS

Disposal Instructions: Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

Section 14: TRANSPORT INFORMATION

U.S. Department of Transportation (DOT)

Proper Shipping Name: Not regulated.

Class: Not applicable.

UN Number: Not applicable.

Packing Group: Not applicable.

Label Code: Not applicable.



PLANT PRODUCTS

SAFETY DATA SHEET

Urea

Date of Preparation: December 19, 2018

Canada Transportation of Dangerous Goods (TDG)

Proper Shipping Name: Not regulated.

Class: Not applicable.

UN Number: Not applicable.

Packing Group: Not applicable.

Label Code: Not applicable.

Section 15: REGULATORY INFORMATION

Federal Regulations

United States

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SARA Title III

No components are listed.

State Regulations

Massachusetts

US Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

No components are listed.

New Jersey

US New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

No components are listed.

Pennsylvania

US Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

No components are listed.

California

California Prop 65: This product does not contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Section 16: OTHER INFORMATION

Disclaimer:

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for their own particular use.

Date of Preparation of SDS: December 19, 2018

Version: 1.0

GHS SDS Prepared by: **Aegis Regulatory Inc.**

Phone: (519) 488-0351

www.aegisreg.com



Section 1: IDENTIFICATION

Product Name: Urea Phosphate

Synonyms: Not available.

Product Use: Fertilizer.

Restrictions on Use: Not available.

Manufacturer/Supplier: Plant Products Inc.
50 Hazelton Street
Leamington, Ontario N8H 1B8

Phone Number: 519-326-9037
Toll free number 1-800-387-2449 (English)
Toll free number 1-800-361-9184 (French)

Emergency Phone: 1-800-424-9300 (CHEMTREC, 24 hours)

Date of Preparation of SDS: December 19, 2018

Section 2: HAZARD(S) IDENTIFICATION

GHS INFORMATION

Classification: Skin Corrosion, Category 1B
Eye Damage, Category 1

LABEL ELEMENTS

Hazard

Pictogram(s):



Signal Word: Danger

Hazard Statements: Causes severe skin burns and eye damage.

Precautionary Statements

Prevention: Do not breathe dust or fumes.
Wash thoroughly after handling.
Wear protective gloves, protective clothing, eye protection and face protection.

Response: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
IF INHALED: Remove person to fresh air and keep comfortable for breathing.
IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTER or doctor.
Wash contaminated clothing before reuse.

Storage: Store locked up.

Disposal: Dispose of contents/container in accordance with applicable regional, national and local laws and regulations.



Hazards Not Otherwise Classified: Not applicable.

Ingredients with Unknown Toxicity: None.

This material is considered hazardous by the OSHA Hazard Communication Standard, (29 CFR 1910.1200).

This material is considered hazardous by the Hazardous Products Regulations.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Ingredient(s)	Common name / Synonyms	CAS No.	% wt./wt.
Urea, phosphate (1:1)	Urea phosphate	4861-19-2	80 - 100

Impurities / Stabilizing additives: None known.

Section 4: FIRST-AID MEASURES

Inhalation: If inhaled: Remove person to fresh air and keep comfortable for breathing.

Acute and delayed symptoms and effects: May cause respiratory irritation. Signs/symptoms may include burning pain in the nose and throat, coughing, wheezing, shortness of breath and pulmonary edema.

Eye Contact: If in eyes: Rinse cautiously with water for at least 30 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor.

Acute and delayed symptoms and effects: Causes serious eye damage. Signs/symptoms may include cloudy appearance of the cornea, chemical burns, severe pain, tearing, ulcerations, significantly impaired vision or complete loss of vision.

Skin Contact: If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower. Immediately call a poison center or doctor. Wash contaminated clothing before reuse.

Acute and delayed symptoms and effects: Causes severe skin burns. Signs/symptoms may include localized redness, swelling, itching, intense pain, blistering, ulceration, and tissue destruction.

Ingestion: If swallowed: Rinse mouth. Do NOT induce vomiting. Immediately call a poison center or doctor. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Never give anything by mouth to an unconscious person.

Acute and delayed symptoms and effects: Causes burns to nose, mouth, throat, and digestive tract. Signs/symptoms may include severe mouth, throat and abdominal pain, nausea, vomiting, and diarrhea, blood in the feces and/or vomitus may also be seen.

General Advice: In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

Note to Physicians: Symptoms may not appear immediately.



Section 5: FIRE-FIGHTING MEASURES

FLAMMABILITY AND EXPLOSION INFORMATION

Non-combustible, substance itself does not burn but may decompose upon heating to produce corrosive and/or toxic fumes. Contact with metals may evolve flammable hydrogen gas.

If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions; also, consider initial evacuation for 800 meters (1/2 mile) in all directions.

Fire involving Tanks or Car/Trailer Loads: Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Do not get water inside containers. Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. ALWAYS stay away from tanks engulfed in fire.

Sensitivity to Mechanical Impact: This material is not sensitive to mechanical impact.

Sensitivity to Static Discharge: This material is not sensitive to static discharge.

MEANS OF EXTINCTION

Suitable Extinguishing Media: Small Fire: Dry chemical, CO2 or water spray.

Large Fire: Dry chemical, CO2, alcohol-resistant foam or water spray. Move containers from fire area if you can do it without risk. Dike fire-control water for later disposal; do not scatter the material.

Unsuitable Extinguishing Media: Not available.

Products of Combustion: Oxides of carbon. Oxides of nitrogen. Oxides of phosphorus.

Protection of Firefighters: Avoid any skin contact. Effects of contact or inhalation may be delayed. Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may be corrosive and/or toxic and cause pollution. Wear positive pressure self-contained breathing apparatus (SCBA). Wear chemical protective clothing that is specifically recommended by the manufacturer. It may provide little or no thermal protection. Structural firefighters' protective clothing provides limited protection in fire situations ONLY; it is not effective in spill situations where direct contact with the substance is possible.

Section 6: ACCIDENTAL RELEASE MEASURES

Emergency Procedures: As an immediate precautionary measure, isolate spill or leak area in all directions for at least 25 meters (75 feet). Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate enclosed areas.

Personal Precautions: Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Use personal protection recommended in Section 8.

Environmental Precautions: Prevent entry into waterways, sewers, basements or confined areas.



Methods for Containment: Stop leak if you can do it without risk.

Methods for Clean-Up: Absorb or cover with dry earth, sand or other non-combustible material and transfer to containers.

Other Information: See Section 13 for disposal considerations.

Section 7: HANDLING AND STORAGE

Handling:
Do not swallow. Do not breathe dust or fumes. Wash thoroughly after handling. See Section 8 for information on Personal Protective Equipment.

Storage:
Store locked up. Store away from incompatible materials. See Section 10 for information on Incompatible Materials. Keep out of the reach of children.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines Component

Urea phosphate [CAS No. 4861-19-2]
ACGIH: 10 mg/m³ (TWA) (Inhalable.); 3 mg/m³ (TWA) (Respirable.); For Particles (Insoluble or Poorly Soluble) Not Otherwise Specified
OSHA: 15 mg/m³ (Total dust) (TWA), 5 mg/m³ (Respirable fraction) (TWA); For Particulates Not Otherwise Regulated (PNOR).

TWA: Time-Weighted Average

Engineering Controls: Not normally required.

PERSONAL PROTECTIVE EQUIPMENT (PPE)



Eye/Face Protection: Wear chemical safety goggles, and full face shield. Indirect vented, dust-tight goggles are required if dust is generated when handling this product. Ensure that eyewash stations and safety showers are close to the workstation location. Use equipment for eye protection that meets the standards referenced by CSA Standard CAN/CSA-Z94.3-92 and OSHA regulations in 29 CFR 1910.133 for Personal Protective Equipment.

Hand Protection: Wear protective gloves. Consult manufacturer specifications for further information.

Skin and Body Protection: Wear protective clothing. Clothing with full length sleeves and pants should be worn.

Respiratory Protection: If engineering controls and ventilation are not sufficient to control exposure to below the allowable limits then an appropriate NIOSH/MSHA approved air-purifying respirator

that meets the requirements of CSA Standard CAN/CSA-Z94.4-11, with organic vapor/acid gas cartridge and particulate filter, or self-contained breathing apparatus must be used.

General Hygiene Considerations: Handle according to established industrial hygiene and safety practices. Consult a competent industrial hygienist to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES
--

Appearance:	White crystalline powder.
Colour:	White.
Odour:	Odourless.
Odour Threshold:	Not available.
Physical State:	Solid.
pH (0.05% solution in water):	2.75
Melting Point / Freezing Point:	> 200 °C (392 °F) (OECD 102)
Initial Boiling Point:	> 200 °C (392 °F)
Boiling Range:	Not available.
Flash Point:	Not available.
Evaporation Rate:	Not available.
Flammability (solid, gas):	See Section 5.
Lower Flammability Limit:	Not available.
Upper Flammability Limit:	Not available.
Vapor Pressure:	Not available.
Vapor Density:	Not available.
Relative Density:	Not available.
Solubilities:	Water solubility: > 100 g/L at 20 °C (68 °F).
Partition Coefficient: n-Octanol/Water:	log Pow -1.73 at 20 °C (68 °F) (Urea)
Auto-ignition Temperature:	Not available.
Decomposition Temperature:	Not available.
Viscosity:	Not available.
Percent Volatile, wt. %:	Not available.



VOC content, wt. %: Not available.
 Density: 1.77 g/cm³ at 20 °C (68 °F)
 Coefficient of Water/Oil Distribution: Not available.

Section 10: STABILITY AND REACTIVITY

Reactivity: Contact with incompatible materials. Exposure to heat.
 Chemical Stability: Stable under normal storage conditions.
 Possibility of Hazardous Reactions: None known.
 Conditions to Avoid: Contact with incompatible materials. Exposure to heat.
 Incompatible Materials: Strong bases. Strong reducers. Strong oxidizers.
 Hazardous Decomposition Products: Not available.

Section 11: TOXICOLOGICAL INFORMATION

EFFECTS OF ACUTE EXPOSURE

Product Toxicity

Oral: Not available.
 Dermal: Not available.
 Inhalation: Not available.

Component Toxicity

Component	CAS No.	LD ₅₀ oral	LD ₅₀ dermal	LC ₅₀
Urea phosphate	4861-19-2	2600 mg/kg (rat)	Not available.	Not available.

Likely Routes of Exposure: Eye contact. Skin contact. Inhalation. Ingestion.

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system.

Symptoms (including delayed and immediate effects)

Inhalation: May cause respiratory irritation. Signs/symptoms may include burning pain in the nose and throat, coughing, wheezing, shortness of breath and pulmonary edema.
Eye: Causes serious eye damage. Signs/symptoms may include cloudy appearance of the cornea, chemical burns, severe pain, tearing, ulcerations, significantly impaired vision or complete loss of vision.
Skin: Causes severe skin burns. Signs/symptoms may include localized redness, swelling, itching, intense pain, blistering, ulceration, and tissue destruction.
Ingestion: Causes burns to nose, mouth, throat, and digestive tract. Signs/symptoms may include severe mouth, throat and abdominal pain, nausea, vomiting, and diarrhea, blood in the feces and/or vomitus may also be seen.

Skin Sensitization: Not available.

Respiratory Sensitization: Not available.



Medical Conditions Aggravated By Exposure: Not available.

EFFECTS OF CHRONIC EXPOSURE (from short and long-term exposure)

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system.
Chronic Effects: Prolonged or repeated contact may dry skin and cause irritation.
Carcinogenicity: This product does not contain any carcinogens or potential carcinogens above reportable thresholds as listed by ACGIH, IARC, OSHA, or NTP.
Mutagenicity: Not available.
Reproductive Effects: Not available.
Developmental Effects Teratogenicity: Not available. Embryotoxicity: Not available.
Toxicologically Synergistic Materials: Not available.

Section 12: ECOLOGICAL INFORMATION

Ecotoxicity: Not available.
Persistence / Degradability: Not available.
Bioaccumulation / Accumulation: Not available.
Mobility in Environment: Not available.
Other Adverse Effects: Not available.

Section 13: DISPOSAL CONSIDERATIONS

Disposal Instructions: Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

Section 14: TRANSPORT INFORMATION

U.S. Department of Transportation (DOT)

Proper Shipping Name: UN1759, CORROSIVE SOLIDS, N.O.S. (Urea phosphate), 8, PG II
Class: 8
UN Number: UN1759
Packing Group: II
Label Code:





PLANTPRODUCTS®

SAFETY DATA SHEET

Urea Phosphate

Date of Preparation: December 19, 2018

Canada Transportation of Dangerous Goods (TDG)

Proper Shipping Name: UN1759, CORROSIVE SOLIDS, N.O.S. (Urea phosphate), 8, PG II

Class: 8

UN Number: UN1759

Packing Group: II

Label Code:



Section 15: REGULATORY INFORMATION

Chemical Inventories

US (TSCA)

The components of this product are in compliance with the chemical notification requirements of TSCA.

Canada (DSL)

The substance is specified on the Non-Domestic Substance list and is subject to the requirements of the NSN Regulations under CEPA, 1999.

Federal Regulations

United States

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SARA Title III

No components are listed.

State Regulations

Massachusetts

US Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

No components are listed.

New Jersey

US New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

No components are listed.

Pennsylvania

US Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

No components are listed.



PLANTPRODUCTS®

SAFETY DATA SHEET

Urea Phosphate

Date of Preparation: December 19, 2018

California

California Prop 65: This product does not contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Section 16: OTHER INFORMATION

Disclaimer:

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for their own particular use.

Date of Preparation of SDS: December 19, 2018

Version: 1.0

GHS SDS Prepared by: **Aegis Regulatory Inc.**

Phone: (519) 488-0351

www.aegisreg.com

Section 1: IDENTIFICATION

Product Name: Zinc Chelate 15 EDTA
Synonyms: Not available.
Product Use: Fertilizer.
Restrictions on Use: Not available.
Manufacturer/Supplier: Plant Products Inc.
50 Hazelton Street
Leamington, Ontario N8H 1B8
Phone Number: 519-326-9037
Toll free number 1-800-387-2449 (English)
Toll free number 1-800-361-9184 (French)
Emergency Phone: 1-800-424-9300 (CHEMTREC, 24 hours)
Date of Preparation of SDS: December 19, 2018

Section 2: HAZARD(S) IDENTIFICATION

GHS INFORMATION

Classification: Combustible Dust, Category 1

LABEL ELEMENTS

Hazard None.

Pictogram(s):

Signal Word: Warning

Hazard Statements: May form combustible dust concentrations in air.

Precautionary Statements

Prevention: Not applicable.

Response: Not applicable.

Storage: Not applicable.

Disposal: Not applicable.

Hazards Not Otherwise Classified: Not applicable.

Ingredients with Unknown Toxicity: None.

This material is considered hazardous by the OSHA Hazard Communication Standard, (29 CFR 1910.1200).

This material is considered hazardous by the Hazardous Products Regulations.

Section 3: COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient(s)	Common name / Synonyms	CAS No.	% wt./wt.
---------------	---------------------------	---------	-----------

No hazardous ingredients are present at or above reportable levels.

Section 4: FIRST-AID MEASURES

Inhalation: If inhaled: Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Eye Contact: If in eyes: Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Skin Contact: If on skin: Wash with plenty of water. Call a poison center or doctor if you feel unwell.
Acute and delayed symptoms and effects: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

Ingestion: If swallowed: Call a poison center or doctor if you feel unwell. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person.
Acute and delayed symptoms and effects: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

General Advice: In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

Note to Physicians: Symptoms may not appear immediately.

Section 5: FIRE-FIGHTING MEASURES

FLAMMABILITY AND EXPLOSION INFORMATION

May form combustible dust concentrations in air.

Sensitivity to Mechanical Impact: This material is not sensitive to mechanical impact.

Sensitivity to Static Discharge: In the form of dust, this material is sensitive to static discharge and may form explosive mixtures with air.

MEANS OF EXTINCTION

Suitable Extinguishing Media: Use appropriate extinguishing media for surrounding fire. Move containers from fire area if you can do it without risk.

Unsuitable Extinguishing Media: Not available.



Products of Combustion: Oxides of carbon. Oxides of nitrogen.

Protection of Firefighters: Fire may produce irritating, corrosive and/or toxic gases. Runoff from fire control or dilution water may cause pollution. Wear positive pressure self-contained breathing apparatus (SCBA). Structural firefighters' protective clothing will only provide limited protection.

Section 6: ACCIDENTAL RELEASE MEASURES

Emergency Procedures: Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering.

Personal Precautions: Do not touch or walk through spilled material. Use personal protection recommended in Section 8.

Environmental Precautions: Keep out of drains, sewers, ditches, and waterways.

Methods for Containment: Do not flush to sewer or allow to enter waterways.

Methods for Clean-Up: Use explosion-proof equipment. Dust can be a fire or explosion hazard. Sweep up and shovel into suitable containers for disposal. Cleaning methods (e.g. compressed air) which can generate potentially combustible dust clouds should not be used.

Other Information: See Section 13 for disposal considerations.

Section 7: HANDLING AND STORAGE

Handling:
Do not swallow. Minimize dust generation and accumulation. Airborne dusts are potentially explosive. Avoid significant deposits of material, especially on horizontal surfaces, which may become airborne and form combustible dust clouds and may contribute to secondary explosions. Handling and processing operations should be conducted in accordance with 'best practices' (e.g. NFPA-654). Dry powders can build static electricity charges when subjected to the friction of transfer and mixing operations. To avoid fire or explosion, ground and bond container and receiving equipment (and ground personnel) before transferring material. See Section 8 for information on Personal Protective Equipment.

Storage:
Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Store away from incompatible materials. See Section 10 for information on Incompatible Materials. Keep out of the reach of children.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines Component

Dust [CAS No. Not applicable]
ACGIH: 10 mg/m³ (TWA) (Inhalable.); 3 mg/m³ (TWA) (Respirable.); For Particles (Insoluble or Poorly Soluble) Not Otherwise Specified
OSHA: 15 mg/m³ (Total dust) (TWA), 5 mg/m³ (Respirable fraction) (TWA); For Particulates Not Otherwise Regulated (PNOR).

TWA: Time-Weighted Average



Engineering Controls:

It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product contain explosion relief vents or an explosion suppression system or an oxygen-deficient environment. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). Use explosion-proof electrical, ventilating, and lighting equipment.

PERSONAL PROTECTIVE EQUIPMENT (PPE)



Eye/Face Protection:

Wear safety glasses. Indirect vented, dust-tight goggles are required if dust is generated when handling this product. Use equipment for eye protection that meets the standards referenced by CSA Standard CAN/CSA-Z94.3-92 and OSHA regulations in 29 CFR 1910.133 for Personal Protective Equipment.

Hand Protection:

Wear protective gloves. Consult manufacturer specifications for further information.

Skin and Body Protection:

Wear protective clothing.

Respiratory Protection:

If engineering controls and ventilation are not sufficient to control exposure to below the allowable limits then an appropriate NIOSH/MSHA approved air-purifying respirator that meets the requirements of CSA Standard CAN/CSA-Z94.4-11, with particulate filter, or self-contained breathing apparatus must be used.

General Hygiene Considerations:

Handle according to established industrial hygiene and safety practices. Consult a competent industrial hygienist to determine hazard potential and/or the PPE manufacturers to ensure adequate protection.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	White granular solid.
Colour:	White.
Odour:	Odourless.
Odour Threshold:	Not available.
Physical State:	Solid.
pH (1% solution in water):	6 to 7
Melting Point / Freezing Point:	Decomposes before melting.



Initial Boiling Point:	Not available.
Boiling Range:	Not available.
Flash Point:	Not available.
Evaporation Rate:	Not available.
Flammability (solid, gas):	See Section 5.
Lower Flammability Limit:	≥ 40 g/m ³
Upper Flammability Limit:	Not available.
Vapor Pressure:	Not available.
Vapor Density:	Not available.
Relative Density:	Not available.
Solubilities:	Water solubility: ~ 1000 g/L.
Partition Coefficient: n-Octanol/Water:	log Pow < 0
Auto-ignition Temperature:	≥ 200 °C (392 °F) (Method: Auto-ignition of a 5 mm dust layer according to EN 50281-2-1)
Decomposition Temperature:	Not available.
Viscosity:	Not available.
Percent Volatile, wt. %:	Not available.
VOC content, wt. %:	Not available.
Bulk Density:	800 to 1000 kg/m ³
Coefficient of Water/Oil Distribution:	Not available.

Section 10: STABILITY AND REACTIVITY

Reactivity:	Contact with incompatible materials. Exposure to heat.
Chemical Stability:	Stable under normal storage conditions.
Possibility of Hazardous Reactions:	None known.
Conditions to Avoid:	Contact with incompatible materials. Exposure to heat.
Incompatible Materials:	None known.
Hazardous Decomposition Products:	Not available.

Section 11: TOXICOLOGICAL INFORMATION

EFFECTS OF ACUTE EXPOSURE

Product Toxicity

Oral: Not available.

Dermal: Not available.

Inhalation: Not available.

Component Toxicity

No LC50 or LD50 listed for the components of this product.

Likely Routes of Exposure: Eye contact. Skin contact. Inhalation. Ingestion.

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system.

Symptoms (including delayed and immediate effects)

Inhalation: May cause respiratory irritation. Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

Eye: May cause eye irritation. Signs/symptoms may include redness, swelling, pain, tearing, and blurred or hazy vision.

Skin: May cause skin irritation. Signs/symptoms may include localized redness, swelling, and itching.

Ingestion: May cause gastrointestinal irritation. Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

Skin Sensitization: Not available.

Respiratory Sensitization: Not available.

Medical Conditions Not available.

Aggravated By Exposure:

EFFECTS OF CHRONIC EXPOSURE (from short and long-term exposure)

Target Organs: Skin. Eyes. Gastrointestinal tract. Respiratory system.

Chronic Effects: Prolonged or repeated contact may dry skin and cause irritation.

Carcinogenicity: This product does not contain any carcinogens or potential carcinogens above reportable thresholds as listed by ACGIH, IARC, OSHA, or NTP.

Mutagenicity: Not available.

Reproductive Effects: Not available.

Developmental Effects

Teratogenicity: Not available.

Embryotoxicity: Not available.

Toxicologically Synergistic Materials: Not available.

**Section 12: ECOLOGICAL INFORMATION**

Ecotoxicity:	Not available.
Persistence / Degradability:	Not available.
Bioaccumulation / Accumulation:	Not available.
Mobility in Environment:	Not available.
Other Adverse Effects:	Not available.

Section 13: DISPOSAL CONSIDERATIONS

Disposal Instructions: Disposal should be in accordance with applicable regional, national and local laws and regulations. Local regulations may be more stringent than regional or national requirements.

Section 14: TRANSPORT INFORMATION**U.S. Department of Transportation (DOT)**

Proper Shipping Name:	Not regulated.
Class:	Not applicable.
UN Number:	Not applicable.
Packing Group:	Not applicable.
Label Code:	Not applicable.

Canada Transportation of Dangerous Goods (TDG)

Proper Shipping Name:	Not regulated.
Class:	Not applicable.
UN Number:	Not applicable.
Packing Group:	Not applicable.
Label Code:	Not applicable.

Section 15: REGULATORY INFORMATION**Chemical Inventories****US (TSCA)**

The components of this product are in compliance with the chemical notification requirements of TSCA.

Canada (DSL)

The components of this product are in compliance with the chemical notification requirements of the NSN Regulations under CEPA, 1999.

Federal Regulations**United States**

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.



PLANTPRODUCTS®

SAFETY DATA SHEET

SARA Title III

No components are listed.

State Regulations

Massachusetts

US Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

No components are listed.

New Jersey

US New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

No components are listed.

Pennsylvania

US Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

No components are listed.

California

California Prop 65: This product does not contain chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Section 16: OTHER INFORMATION

Disclaimer:

The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for their own particular use.

Date of Preparation of SDS: December 19, 2018

Version: 1.0

GHS SDS Prepared by: Aegis Regulatory Inc.

Phone: (519) 488-0351

www.aegisreg.com

Zinc Sulphate Monohydrate

PP-014

SDS Preparation Date (mm/dd/yyyy): 06/03/2016

Page 1 of 11

SAFETY DATA SHEET

SECTION 1. IDENTIFICATION

Product identifier used on the label

: **Zinc Sulphate Monohydrate**

Product Code(s) : None assigned.

Recommended use of the chemical and restrictions on use

: Fertilizer, horticultural chemical
Use pattern: professional use
Recommended restrictions: None known.

Chemical family : Inorganic fertilizer

Name, address, and telephone number of the manufacturer:

Plant Products Inc.

50 Hazelton Street
PO BOX 33
Leamington, Ontario, Canada N8H 3W1
Manufacturer's Telephone # : 519-326-9037 (Monday - Friday, 8:00 am - 5:00 pm, Eastern Standard Time)

Name, address, and telephone number of the supplier:

Plant Products Inc.

50 Hazelton Street
PO BOX 33
Leamington, Ontario, Canada N8H 3W1
Supplier's Telephone # : 519-326-9037 (Monday - Friday, 8:00 am - 5:00 pm, Eastern Standard Time) :

24 Hr. Emergency Tel # CHEMTREC 1-800-424-9300

SECTION 2. HAZARDS IDENTIFICATION

Classification of the chemical

Appearance: White crystals or powder.
Odour: Odourless.

Most important hazards: This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015).

Hazard classification:

Acute toxicity, Oral - Category 4
Eye damage/irritation - Category 1

Label elements

Hazard pictogram(s)



Signal Word

DANGER!

Hazard statement(s)

Harmful if swallowed.
Causes serious eye damage.

Zinc Sulphate Monohydrate

PP-014

SDS Preparation Date (mm/dd/yyyy): 06/03/2016

Page 2 of 11

SAFETY DATA SHEET

Precautionary statement(s)

Wear eye/face protection.
Do not eat, drink or smoke when using this product.
Wash hands thoroughly after handling.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
Immediately call a POISON CENTRE or doctor/physician.
IF SWALLOWED: Call a POISON CENTRE or doctor/physician if you feel unwell.
Rinse mouth.

Dispose of contents/container in accordance with local/regional/national/international regulations.

Other hazards

No OSHA defined hazard classes.

Other hazards which do not result in classification:

Toxic fumes, gases or vapours may evolve on burning.
Direct skin contact may cause slight or mild, transient irritation.
Dust contact with the eyes can lead to mechanical irritation.
Dusts may cause irritation of the mucous membranes and respiratory tract.
Prolonged or repeated exposure may cause anemia, leukopenia, headache, stomach symptoms, and copper deficiency.

Ecological information:

Very toxic to aquatic life. Avoid release to the environment. See Section 12 for more environmental information.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Pure substance

<u>Chemical name</u>	<u>Common name and synonyms</u>	<u>CAS #</u>	<u>Concentration (% by weight)</u>
Zinc sulphate, monohydrate	Sulfuric acid, Zinc salt (1:1) monohydrate	7446-19-7	100%

SECTION 4. FIRST-AID MEASURES

Description of first aid measures

- Ingestion* : Rinse mouth thoroughly. Do NOT induce vomiting. Never give anything by mouth to an unconscious person. If vomiting occurs spontaneously, keep victim's head lowered (forward) to reduce the risk of aspiration. Call a POISON CENTRE or doctor/physician if you feel unwell.
- Inhalation* : Remove exposed person to fresh air immediately. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen by qualified medical personnel only. Get medical attention if irritation develops and persists.
- Skin contact* : Wash off with soap and plenty of water. Remove and wash contaminated clothing before re-use. Get medical attention if irritation develops and persists.
- Eye contact* : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Do not rub eyes. If contact lens is present, DO NOT delay flushing or attempt to remove the lens until flushing is done. Get medical attention immediately.

Zinc Sulphate Monohydrate

PP-014

SDS Preparation Date (mm/dd/yyyy): 06/03/2016

Page 3 of 11

SAFETY DATA SHEET

Most important symptoms and effects, both acute and delayed

- : Harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.
- : Causes serious eye damage. Symptoms may include a burning sensation, pain, watering, and/or changes in vision (blurred vision). Dust contact with the eyes can lead to mechanical irritation.
- : Direct skin contact may cause slight or mild, transient irritation. Contact with dust can cause mechanical irritation or drying of the skin.
- : Dusts may cause irritation of the mucous membranes and respiratory tract.
- : Symptoms may include coughing, mucous production and difficulty breathing.
- : Prolonged or repeated exposure may cause anemia, leukopenia, headache, stomach symptoms, and copper deficiency.

Indication of any immediate medical attention and special treatment needed

- : Provide general supportive measures and treat symptomatically.

SECTION 5. FIRE-FIGHTING MEASURES

Extinguishing media

Suitable extinguishing media

- : Use media suitable for the surrounding area.

Unsuitable extinguishing media

- : Do not use a solid water stream as it may scatter and spread the fire.

Special hazards arising from the substance or mixture / Conditions of flammability

- : Not considered flammable. Toxic fumes, gases or vapours may evolve on burning. May decompose to form toxic/corrosive gasses if exposed to high heat. Closed containers may rupture if exposed to excess heat or flame due to a build-up of internal pressure.

Flammability classification (OSHA 29 CFR 1910.106)

- : Not flammable.

Hazardous combustion products

- : Nitrogen oxides (NOx); Sulfur oxides.

Special protective equipment and precautions for firefighters

Protective equipment for fire-fighters

- : Firefighters should wear proper protective equipment and self-contained breathing apparatus with full face piece operated in positive pressure mode. Firefighters should wear an approved full-face, self-contained breathing apparatus (SCBA) and impervious clothing.

Special fire-fighting procedures

- : Move containers from fire area if safe to do so. Contaminated surfaces may be slippery. Cool closed containers exposed to fire with water spray. Do not allow run-off from fire fighting to enter drains or water courses. Dike for water control.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

- : Restrict access to area until completion of clean-up. Keep people away from and upwind of spill/leak. All persons dealing with clean-up should wear the appropriate protective equipment including self-contained breathing apparatus. Refer to protective measures listed in sections 7 and 8.

Environmental precautions : Do not allow material to contaminate ground water system. Prevent product from entering drains, sewers, waterways and soil.

Zinc Sulphate Monohydrate

PP-014

SDS Preparation Date (mm/dd/yyyy): 06/03/2016

Page 4 of 11

SAFETY DATA SHEET

Methods and material for containment and cleaning up

- : Ventilate the area. Remove all sources of ignition. Prevent further leakage or spillage if safe to do so. Do not touch or walk through spilled material. Avoid dust formation. Vacuum or sweep up spilled material using a method that does not generate airborne dust. Place in clean, dry and labeled containers. Clean surface thoroughly to remove residual contamination. After cleaning, flush away traces with water. Do not flush into surface water or sanitary sewer system. Refer to Section 13 for disposal of contaminated material. Contact the proper local authorities.

Special spill response procedures

- : For 24-hour emergency assistance, call: 1-613-996-6666 (CANUTEC). If a spill/release in excess of the EPA reportable quantity is made into the environment, immediately notify the national response center in the United States (phone: 1-800-424-8802).

EPA/CERCLA Reportable quantity (RQ):
None known.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling

- : Avoid dust formation. Use in a well-ventilated area. Keep container tightly closed when not in use. Wear appropriate protective equipment. Avoid breathing dust. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. Do not ingest. Wash thoroughly after handling. Keep away from incompatibles. Keep away from extreme heat and flame. Empty containers retain residue and can be dangerous.

- Conditions for safe storage** : Store in a cool, dry, well ventilated area. Store away from incompatible materials. Keep away from heat and sources of ignition. Keep away from direct sunlight. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Do not store in open or unlabelled containers. Storage area should be clearly identified, clear of obstruction and accessible only to trained and authorized personnel. No smoking. Inspect periodically for damage or leaks. Have appropriate fire extinguishers and spill clean-up equipment in or near storage area.

- Incompatible materials** : Bases; Reducing agents; Oxidizing agents.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Limits:

<u>Chemical Name</u>	<u>ACGIH TLV</u>		<u>OSHA PEL</u>	
	<u>TWA</u>	<u>STEL</u>	<u>PEL</u>	<u>STEL</u>
Zinc sulphate, monohydrate	N/Av	N/Av	N/Av	N/Av

Exposure controls

Ventilation and engineering measures

- : Use only in well-ventilated areas. Apply technical measures to comply with the occupational exposure limits. Where reasonably practicable this should be achieved by the use of local exhaust ventilation and good general extraction. In case of insufficient ventilation wear suitable respiratory equipment.

Zinc Sulphate Monohydrate

PP-014

SDS Preparation Date (mm/dd/yyyy): 06/03/2016

Page 5 of 11

SAFETY DATA SHEET

- Respiratory protection** : If airborne concentrations are above the permissible exposure limit or are not known, use NIOSH-approved respirators. Use a NIOSH approved dust respirator if dust levels exceed exposure limits. Respirators should be selected based on the form and concentration of contaminants in air, and in accordance with OSHA (29 CFR 1910.134) or CSA Z94.4-02. Advice should be sought from respiratory protection specialists.
- Skin protection** : Wear protective gloves. The suitability for a specific workplace should be discussed with the producers of the protective gloves.
- Eye / face protection** : Chemical goggles must be worn to prevent dusts from entering the eyes. A full face shield may also be necessary.
- Other protective equipment** : Emergency showers and eyewash facilities should be nearby. Other equipment may be required depending on workplace standards.
- General hygiene considerations** : Avoid breathing dust. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. Wash hands thoroughly after using this product, and before eating, drinking or smoking. Remove and wash contaminated clothing before re-use. Handle in accordance with good industrial hygiene and safety practice.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

- Appearance** : White crystals or powder.
- Odour** : Odourless.
- Odour threshold** : N/Ap
- pH** : 5-6.5 (diluted solution); 4.5 (saturated solution)
- Melting/Freezing point** : 1256°F / 680°C Melting point
- Initial boiling point and boiling range** : Decomposes on heating.
- Flash point** : N/Ap
- Flashpoint (Method)** : N/Ap
- Evaporation rate (BuAe = 1)** : N/Ap
- Flammability (solid, gas)** : Not considered flammable.
- Lower flammable limit (% by vol.)** : N/Ap
- Upper flammable limit (% by vol.)** : N/Ap
- Oxidizing properties** : None known.
- Explosive properties** : Not explosive
- Vapour pressure** : N/Ap
- Vapour density** : N/Ap
- Relative density / Specific gravity** : N/Av
- Solubility in water** : Soluble
- Other solubility(ies)** : insoluble: Ethanol
- Partition coefficient: n-octanol/water or Coefficient of water/oil distribution** : Log P(oct) = -0.07 (estimated)
- Auto-ignition temperature** : N/Ap
- Decomposition temperature** : N/Av
- Viscosity** : N/Ap
- Volatiles (% by weight)** : N/Av
- Volatile organic Compounds (VOC's)** : N/Av
- Absolute pressure of container** : N/Ap

Zinc Sulphate Monohydrate

PP-014

SDS Preparation Date (mm/dd/yyyy): 06/03/2016

Page 6 of 11

SAFETY DATA SHEET

Flame projection length : N/Ap

Other physical/chemical comments

: Not sensitive to static discharge or mechanical impact under normal conditions of use and handling.

SECTION 10. STABILITY AND REACTIVITY

Reactivity : Not normally reactive.

Chemical stability : Stable under normal conditions. Decomposes on heating.

Possibility of hazardous reactions

: Hazardous polymerization does not occur. No dangerous reaction known under conditions of normal use.

Conditions to avoid : Avoid dust formation. Avoid contact with incompatible materials. Do not use in areas without adequate ventilation. Keep away from extreme heat and flame.

Incompatible materials : Bases; Reducing agents; Oxidizing agents.

Hazardous decomposition products

: Nitrogen oxides (NO_x); Sulphur oxides.

SECTION 11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure:

Routes of entry inhalation : YES

Routes of entry skin & eye : YES

Routes of entry Ingestion : YES

Routes of exposure skin absorption

: NO

Potential Health Effects:

Signs and symptoms of short-term (acute) exposure

Sign and symptoms Inhalation

: Dusts may cause irritation of the mucous membranes and respiratory tract. Symptoms may include coughing, mucous production and difficulty breathing.

Sign and symptoms ingestion

: Harmful if swallowed. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Sign and symptoms skin

: Direct skin contact may cause slight or mild, transient irritation. Contact with dust can cause mechanical irritation or drying of the skin.

Sign and symptoms eyes

: Causes serious eye damage. Symptoms may include a burning sensation, pain, watering, and/or changes in vision (blurred vision). Dust contact with the eyes can lead to mechanical irritation.

Potential Chronic Health Effects

: Prolonged or repeated exposure may cause anemia, leukopenia, headache, stomach symptoms, and copper deficiency.

Mutagenicity

: Not expected to be mutagenic in humans.

Carcinogenicity

: No component of this product present at levels greater than, or equal to, 0.1% is identified as a carcinogen or potential carcinogen by ACGIH, IARC, OSHA, or NTP.

Reproductive effects & Teratogenicity

: Not expected to cause reproductive effects.

Sensitization to material

: Not expected to be a skin or respiratory sensitizer.

Specific target organ effects

: Not classified as a specific target organ toxicity-single exposure.
Not classified as specific target organ toxicity-repeated exposure.

Zinc Sulphate Monohydrate

PP-014

SDS Preparation Date (mm/dd/yyyy): 06/03/2016

Page 7 of 11

SAFETY DATA SHEET

Medical conditions aggravated by overexposure

: Pre-existing skin, eye and respiratory disorders.

Synergistic materials

: No information available.

Toxicological data

: This material is classified as hazardous under U.S. OSHA regulations (29CFR 1910.1200) (Hazcom 2012) and Canadian WHMIS regulations (Hazardous Products Regulations) (WHMIS 2015). Classification:

Acute toxicity (Oral) - Category 4. Harmful if swallowed.

See below for toxicological data on the substance.

<u>Chemical name</u>	<u>LC₅₀(4hr)</u> <u>inh, rat</u>	<u>LD₅₀</u>	
		<u>(Oral, rat)</u>	<u>(Rabbit, dermal)</u>
Zinc sulphate, monohydrate	N/Av	>1000 - <2000 mg/kg	>2000 mg/kg (no deaths)

Other important toxicological hazards

: None reported by the manufacturer.

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity : Very toxic to aquatic life. The product should not be allowed to enter drains or water courses, or be deposited where it can affect ground or surface waters. See the following tables for the substance's ecotoxicity data.

Ecotoxicity data:

<u>Ingredients</u>	<u>CAS No</u>	<u>Toxicity to Fish</u>		
		<u>LC50 / 96h</u>	<u>NOEC / 21 day</u>	<u>M Factor</u>
Zinc sulphate, monohydrate	7446-19-7	0.33 - 0.78 mg/L (Fathead minnow) (anhydrous)	0.129 mg/L (32 days) (heptahydrate)	None.

<u>Ingredients</u>	<u>CAS No</u>	<u>Toxicity to Daphnia</u>		
		<u>EC50 / 48h</u>	<u>NOEC / 21 day</u>	<u>M Factor</u>
Zinc sulphate, monohydrate	7446-19-7	0.28 mg/L (Daphnia magna (Water flea)) (anhydrous)	0.031 mg/L (50 days) (heptahydrate)	None.

<u>Ingredients</u>	<u>CAS No</u>	<u>Toxicity to Algae</u>		
		<u>EC50 / 96h or 72h</u>	<u>NOEC / 96h or 72h</u>	<u>M Factor</u>
Zinc sulphate, monohydrate	7446-19-7	N/Av	0.05 mg/L/72hr (Green algae) (Zinc)	None.

Persistence and degradability

: Biodegradation is not applicable to inorganic substances.

Bioaccumulation potential

: Not expected to bioaccumulate.
See the following data for ingredient information.

Zinc Sulphate Monohydrate

PP-014

SDS Preparation Date (mm/dd/yyyy): 06/03/2016

Page 8 of 11

SAFETY DATA SHEET

<u>Components</u>	<u>Partition coefficient n-octanol/water (log Kow)</u>	<u>Bioconcentration factor (BCF)</u>
Zinc sulphate, monohydrate (CAS 7446-19-7)	Log P(oct) = -0.7 (estimated)	N/Ap

Mobility in soil : There is no data available for this product.

Other Adverse Environmental effects

: No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.



SECTION 13. DISPOSAL CONSIDERATIONS

Handling for Disposal : Handle in accordance with good industrial hygiene and safety practice. Since emptied containers may retain product residue, follow label warnings even after container is emptied. Refer to protective measures listed in sections 7 and 8.

Methods of Disposal : Dispose in accordance with all applicable federal, state, provincial and local regulations.

RCRA : If this product, as supplied, becomes a waste in the United States, it may meet the criteria of a hazardous waste as defined under RCRA, Title 40 CFR 261. It is the responsibility of the waste generator to determine the proper waste identification and disposal method. For disposal of unused or waste material, check with local, state and federal environmental agencies.

SECTION 14. TRANSPORTATION INFORMATION

Regulatory Information	UN Number	UN proper shipping name	Transport hazard class(es)	Packing Group	Label
49CFR/DOT	None.	Not regulated.	not regulated	none	
49CFR/DOT Additional information	None.				
TDG	UN3077	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (Zinc Sulphate Monohydrate)	9	III	
TDG Additional information	May be shipped as Limited Quantity when transported in containers no larger than 5.0 kg; in packages not exceeding 30 kg gross mass. Under the TDG, refer to Section 1.17 for additional exemption requirements, if shipping under this exemption. This product contains marine pollutants. The 'Environmentally hazardous' mark must appear on packagings holding more than 5 kg of the material. This material may be shipped as an exempted marine pollutant in accordance with TDG Section 1.45.1 and Special Provision 99.				

Special precautions for user : Keep away from extreme heat and flame. Appropriate advice on safety must accompany the package.

Environmental hazards : This substance meets the criteria for an environmentally hazardous substance according to the IMDG Code. See ECOLOGICAL INFORMATION, Section 12.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

: This information is not available.

SECTION 15 - REGULATORY INFORMATION

US Federal Information:

Components listed below are present on the following U.S. Federal chemical lists:

Zinc Sulphate Monohydrate

PP-014

SDS Preparation Date (mm/dd/yyyy): 06/03/2016

Page 9 of 11

SAFETY DATA SHEET

<u>Ingredients</u>	CAS #	TSCA Inventory	CERCLA Reportable Quantity(RQ) (40 CFR 117.302):	SARA TITLE III: Sec. 302, Extremely Hazardous Substance, 40 CFR 355:	SARA TITLE III: Sec. 313, 40 CFR 372, Specific Toxic Chemical	
					Toxic Chemical	de minimus Concentration
Zinc sulphate, monohydrate	7446-19-7	NL	N/Ap	N/Ap	No	N/Ap

SARA TITLE III: Sec. 311 and 312, SDS Requirements, 40 CFR 370 Hazard Classes: Immediate (Acute) health hazard. Under SARA Sections 311 and 312, the EPA has established threshold quantities for the reporting of hazardous chemicals. The current thresholds are 500 pounds for the threshold planning quantity (TPQ), whichever is lower, for extremely hazardous substances and 10,000 pounds for all other hazardous chemicals.

US State Right to Know Laws:

The following chemicals are specifically listed by individual States:

<u>Ingredients</u>	CAS #	California Proposition 65		State "Right to Know" Lists					
		Listed	Type of Toxicity	CA	MA	MN	NJ	PA	RI
Zinc sulphate, monohydrate	7446-19-7	No	N/Ap	No	No	No	No	No	No

Canadian Information:

Canadian Environmental Protection Act (CEPA) information: All ingredients listed appear on the Domestic Substances List (DSL).

WHMIS information: Refer to Section 2 for a WHMIS Classification for this product.

International Information:

Components listed below are present on the following International Inventory list:

<u>Ingredients</u>	CAS #	European EINECS	Australia AICS	Philippines PICCS	Japan ENCS	Korea KECI/KECL	China IECSC	NewZealand IOC
Zinc sulphate, monohydrate	7446-19-7	231-793-3 (anhydrous)	Present	Present	(1)-542 (anhydrous)	KE-35582 (anhydrous)	Present	HSR003733

SECTION 16. OTHER INFORMATION

Legend

- : ACGIH: American Conference of Governmental Industrial Hygienists
- AICS: Australian Inventory of Chemical Substances
- CA: California
- CAS: Chemical Abstract Services
- CERCLA: Comprehensive Environmental Response, Compensation, and Liability Act of 1980
- CFR: Code of Federal Regulations
- CSA: Canadian Standards Association
- EC50: Effective Concentration 50%.
- EINECS: European Inventory of Existing Commercial chemical Substances
- ENCS: Existing and New Chemical Substances
- EPA: Environmental Protection Agency
- IECSC: Inventory of Existing Chemical Substances
- Inh: Inhalation

Zinc Sulphate Monohydrate

PP-014

SDS Preparation Date (mm/dd/yyyy): 06/03/2016

Page 10 of 11

SAFETY DATA SHEET

IOC: Inventory of Chemicals
KECI: Korean Existing Chemicals Inventory
KECL: Korean Existing Chemicals List
LC: Lethal Concentration
LD: Lethal Dose
MA: Massachusetts
MN: Minnesota
N/Av: Not Applicable
N/Av: Not Available
NIOSH: National Institute of Occupational Safety and Health
NJ: New Jersey
NOEC: No observable effect concentration
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration
PA: Pennsylvania
PEL: Permissible exposure limit
PICCS: Philippine Inventory of Chemicals and Chemical Substances
RCRA: Resource Conservation and Recovery Act
RI: Rhode Island
SARA: Superfund Amendments and Reauthorization Act
SDS: Safety Data Sheet / MSDS: Material Safety Data Sheet
STEL: Short Term Exposure Limit
TDG: Canadian Transportation of Dangerous Goods Act & Regulations
TLV: Threshold Limit Values
TSCA: Toxic Substance Control Act
TWA: Time Weighted Average
WHMIS: Workplace Hazardous Materials Identification System

References

- : 1. ACGIH Documentation of the Threshold Limit Values and Biological Exposure Indices (2015)
- 2. Canadian Centre for Occupational Health and Safety, CCIInfoWeb Databases, 2016 (Chempendium, RTECs, HSDB, INCHEM).
- 3. European Chemicals Agency, Classification Legislation, 2016.
- 4. OECD - The Global Portal to Information on Chemical Substances - eChemPortal, 2016.
- 5. US EPA Title III List of Lists: March2015 Version
- 6. California Proposition 65 List: May20, 2016 Version
- 7. Safety Data Sheet from manufacturer.

Preparation Date (mm/dd/yyyy)

: 06/03/2016

Other special considerations for handling

: Provide adequate information, instruction and training for operators.

<p><u>Prepared for:</u> Direct all enquiries to: Plant Products, Inc. 50 Hazelton Street PO BOX 33 Leamington, ON, Canada N8H 3W1</p>	 <p>PLANTPRODUCTS®</p>
<p><u>Prepared by:</u> ICC The Compliance Center Inc. Telephone: (888) 442-9628 (U.S.): (888) 977-4834 (Canada) http://www.thecompliancecenter.com</p>	



Plant Products Inc.
50 Hazelton Street
PO BOX 33
Leamington, Ontario N8H 3W1
Canada

Zinc Sulphate Monohydrate

PP-014

SDS Preparation Date (mm/dd/yyyy): 06/03/2016

Page 11 of 11

SAFETY DATA SHEET

DISCLAIMER

This Safety Data Sheet was prepared by ICC The Compliance Center Inc. using information provided by / obtained from Plant Products, Inc. and CCOHS' Web Information Service. The information in the Safety Data Sheet is offered for your consideration and guidance when exposed to this product. ICC The Compliance Center Inc. and Plant Products, Inc. expressly disclaim all expressed or implied warranties and assume no responsibilities for the accuracy or completeness of the data contained herein. The data in this SDS does not apply to use with any other product or in any other process.

This Safety Data Sheet may not be changed, or altered in any way without the expressed knowledge and permission of ICC The Compliance Center Inc. and Plant Products, Inc.

END OF DOCUMENT