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SAFETY DATA SHEET

YaraVita Hydrophos

Section 1. Identification

Product identifier : YaraVita Hydrophos
Product type : Liquid
Product code : PYP59M

Uses

Area of application : Professional applications
Material uses : Fertilizers.

Supplier

Supplier's details : Yara Canada Inc.

Address

Street : 1874 Scarth Street
Number : Ste 1800
Postal code : S4P 4B3
City : Regina
Country : Canada

Telephone number : +1 306 525 7600
Fax no. : +1 306 525 2942
e-mail address of person : yna-hesq@yara.com
responsible for this SDS

Emergency telephone number : US: Chemtrec 24-hours Emergency Response: 1-800-424-9300
(with hours of operation) : Canada: 24 Hour Emergency service, (Canutec 613-996-6666)

National advisory body/Poison Center


Name : Poisons and Drug Information Service
Telephone number : +1 403 944 1414, (800) 332 1414 (Alberta only)

Section 2. Hazards identification

Classification and labelling have been performed following the guidelines and recommendation of GHS and the intended use.

Classification of the substance or mixture : CORROSIVE TO METALS - Category 1
SKIN CORROSION - Category 1
SERIOUS EYE DAMAGE - Category 1

GHS label elements

Hazard pictograms	:	
Signal word	:	Danger
Hazard statements	:	H290 May be corrosive to metals. H314 Causes severe skin burns and eye damage.
<u>Precautionary statements</u>		
Prevention	:	P260-b Do not breathe gas or vapour. P280-d Wear protective gloves/clothing and eye/face protection.
Response	:	P305 IF IN EYES: P351 Rinse cautiously with water for several minutes. P338 Remove contact lenses, if present and easy to do. Continue rinsing. P310 Immediately call a POISON CENTER or doctor/physician. P303 IF ON SKIN (or hair): P361-a Take off immediately all contaminated clothing.
Storage	:	P353-a Rinse skin with water. P234 Keep only in original container.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	CAS number	% (w/w)
Phosphoric acid	7664-38-2	5.13

Any concentration shown as a range is to protect confidentiality or is due to batch variation.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact	:	Immediately flush eyes with plenty of water for at least 15 minutes, keeping eyelids open. Check for and remove any contact lenses. Get medical attention immediately.
Inhalation	:	Avoid inhalation of vapor, spray or mist. If inhaled, remove to fresh air. Get medical attention immediately. If it is suspected that fumes are still present, the rescuer should wear an

- Skin contact** : appropriate mask or self-contained breathing apparatus.
In case of contact, immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Chemical burns must be treated promptly by a physician.
- Ingestion** : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : Vapor is strongly irritating to the eyes and respiratory system.
- Skin contact** : Causes severe burns.
- Ingestion** : May cause burns to mouth, throat and stomach.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain
watering
redness
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:
pain or irritation
blistering may occur
- Ingestion** : May cause burns to mouth, throat and stomach.

Indication of immediate medical attention and special treatment needed, if necessary

- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (section 11)

Section 5. Firefighting measures

Extinguishing media

- Suitable extinguishing media** : Use an extinguishing agent suitable for the surrounding fire.
- Unsuitable extinguishing media** : None identified.
- Specific hazards arising from the chemical** : In a fire or if heated, a pressure increase will occur and the container may burst. Reacts violently with water. Attacks many metals producing extremely flammable hydrogen gas which

- Hazardous thermal decomposition products** : can form explosive mixtures with air. Acidic. In a fire, decomposition may produce toxic gases/fumes.
: Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
phosphorus oxides
halogenated compounds
metal oxide/oxides
Avoid breathing dusts, vapors or fumes from burning materials.
In case of inhalation of decomposition products in a fire, symptoms may be delayed.
- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.
- Special protective equipment for fire-fighters** : Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.
- Remark** : None.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

- For non-emergency personnel** : No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- For emergency responders** : If specialized clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".
- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air).

Methods and material for containment and cleaning up

- Small spill** : Stop leak if without risk. Move containers from spill area. Dilute with water and mop up if water-soluble. Alternatively, or if water-insoluble, absorb with an inert dry material and place in an appropriate waste disposal container. Absorb spillage to prevent material damage. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. Absorb spillage to prevent material damage. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Wash spillages into an effluent treatment plant or proceed as follows. Contain and collect

spillage with non-combustible, absorbent material e.g. sand, earth, vermiculite or diatomaceous earth and place in container for disposal according to local regulations (see section 13). The spilled material may be neutralized with sodium carbonate, sodium bicarbonate or sodium hydroxide. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilled product. Note: see section 1 for emergency contact information and section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures

- : Put on appropriate personal protective equipment (see Section 8).
Do not get in eyes or on skin or clothing. Do not breathe vapor or mist. Do not ingest. If during normal use the material presents a respiratory hazard, use only with adequate ventilation or wear appropriate respirator. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Keep away from alkalis. Empty containers retain product residue and can be hazardous. Do not reuse container. Spillages should be cleaned up promptly to avoid damage to surrounding materials.

Advice on general occupational hygiene

- : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

Conditions for safe storage, including any incompatibilities

- : Store in accordance with local regulations. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see section 10) and food and drink. Store in a corrosion resistant container with a resistant inner liner. Store locked up. Separate from alkalis. Keep container tightly closed and sealed until ready for use. Containers that have been opened must be carefully resealed and kept upright to prevent leakage. Do not store in unlabeled containers.
Use appropriate containment to avoid environmental contamination. Bund storage facilities to prevent soil and water pollution in the event of spillage.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Phosphoric acid	CA Alberta Provincial (2009-07-01) STEL 3 mg/m³ Notes: Occupational exposure limit is based on irritation effects and

	<p>its adjustment to compensate for unusual work schedules is not required.</p> <p>CA Alberta Provincial (2004-04-30) TWA 1 mg/m³</p> <p>Notes: Occupational exposure limit is based on irritation effects and its adjustment to compensate for unusual work schedules is not required.</p> <p>CA British Columbia Provincial (2004-08-01) TWA 1 mg/m³ STEL 3 mg/m³</p> <p>CA Ontario Provincial (1994-09-01) TWA 1 mg/m³ STEL 3 mg/m³</p> <p>CA Quebec Provincial (2000-01-12) TWA 1 mg/m³ STEL 3 mg/m³</p>
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Appropriate engineering controls

- : If user operations generate dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

Environmental exposure controls

- : Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures

- : A washing facility or water for eye and skin cleaning purposes should be present.

Eye/face protection

- : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts.
Recommended: Tightly-fitting goggles

Skin protection

Hand protection

- : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. For general applications, we recommend gloves with a thickness typically greater than 0.35 mm. It should be emphasised that glove thickness is not necessarily a good predictor of glove resistance to a specific chemical, as the permeation efficiency of the glove will be dependent on the exact composition of the glove material.
> 8 hours (breakthrough time): Protective gloves should be worn under normal conditions of use.

Body protection

- : Personal protective equipment for the body should be selected based on the task being performed and the risks involved.

Other skin protection

- : Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a

- Respiratory protection** : specialist before handling this product.
 In case of inadequate ventilation wear respiratory protection.
 Recommended: acid gas filter (Type E)

Personal protective equipment (Pictograms) :



Section 9. Physical and chemical properties

Appearance

- Physical state** : Liquid
Color : Red.
Odor : Not determined.
Odor threshold : Not determined.
pH : 1
- Melting/freezing point** : < -20 °C
- Boiling/condensation point** : Not determined.
Sublimation temperature : Not determined.
Flash point : Not determined.
Evaporation rate : Not determined.
Flammability (solid, gas) : Non-flammable.
- Lower and upper explosive (flammable) limits** : **Lower:** Not determined.
Upper: Not determined.
Vapor pressure : Not determined.
Relative density : 1.479
- Solubility** : Not determined.
Partition coefficient: n-octanol/water : Not determined.
Auto-ignition temperature : Not determined.
Decomposition temperature : Not determined.
Viscosity : **Dynamic:** < 100 mPa.s
- : **Kinematic:** Not determined.
Explosive properties : None.
Oxidizing properties : None.

Section 10. Stability and reactivity

- Reactivity** : May be corrosive to metals. Expert judgment.
- Chemical stability** : The product is stable.
- Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.
- Conditions to avoid** : Avoid contamination by any source including metals, dust and organic materials.
- Incompatible materials** : Attacks many metals producing extremely flammable hydrogen gas which can form explosive mixtures with air.

Reactive or incompatible with the following materials:
alkalis
metals

Hazardous decomposition products : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

Product / ingredient name	Result	Species	Dose	Exposure	References
Phosphoric acid	LD50 Oral	Rat	2,600 mg/kg OECD 423	Not applicable.	IUCLID5

Conclusion/Summary : No known significant effects or critical hazards.

Irritation/Corrosion

Conclusion/Summary

Skin : Corrosive to the skin.

Eyes : Causes serious eye damage.

Respiratory : May give off gas, vapour or dust that is very irritating or corrosive to the respiratory system.

Sensitization

Conclusion/Summary

Skin : No data available for this end-point, hence this classification is not considered to be applicable.

Respiratory : No data available for this end-point, hence this classification is not considered to be applicable.

Mutagenicity

Conclusion/Summary : No known significant effects or critical hazards.

Carcinogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Reproductive toxicity

Product / ingredient name	Maternal toxicity	Fertility	Development toxin	Species	Dose	Exposure	References
Phosphoric	Not applicable.	Negative	Not applicable.	Rat	Oral: > 500	54 days	IUCLID5

acid					mg/kg bw/day OECD 422		
Phosphoric acid	Negative	Not applicable.	Negative	Rat	Oral: > 410 mg/kg bw/day OECD 414	10 days	IUCLID5
Phosphoric acid	Negative	Not applicable.	Negative	Mouse	Oral: > 370 mg/kg bw/day OECD 414	10 days	IUCLID5

Conclusion/Summary : No known significant effects or critical hazards.

Teratogenicity

Conclusion/Summary : No known significant effects or critical hazards.

Specific target organ toxicity (single exposure)

No known significant effects or critical hazards.

Specific target organ toxicity (repeated exposure)

No known significant effects or critical hazards.

Aspiration hazard

No known significant effects or critical hazards.

Information on likely routes of exposure : Not available.

Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : Vapor is strongly irritating to the eyes and respiratory system.
- Skin contact** : Causes severe burns.
- Ingestion** : May cause burns to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
pain
watering
redness
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:
pain or irritation
blistering may occur
- Ingestion** : May cause burns to mouth, throat and stomach.

Delayed and immediate effects as well as chronic effects from short and long-term exposure**Short term exposure**

- Potential immediate effects** : Not available.
Potential delayed effects : Not available.

Long term exposure

- Potential immediate effects** : Not available.
Potential delayed effects : Not available.

Potential chronic health effects

Product / ingredient name	Result	Species	Dose	Exposure	References
Phosphoric acid	NOAEL Oral	Rat	250 mg/kg OECD 422	54days	IUCLID5

- Conclusion/Summary** : No known significant effects or critical hazards.
General : No known significant effects or critical hazards.
Carcinogenicity : No known significant effects or critical hazards.
Mutagenicity : No known significant effects or critical hazards.
Teratogenicity : No known significant effects or critical hazards.
Developmental effects : No known significant effects or critical hazards.
Fertility effects : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain
watering
redness
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:
pain or irritation
blistering may occur
- Ingestion** : May cause burns to mouth, throat and stomach.

Numerical measures of toxicity**Acute toxicity estimates**

Route	ATE value
Oral	24,680 mg/kg

Section 12. Ecological information**Toxicity**

Product / ingredient name	Result	Species	Exposure	References
Phosphoric acid	Acute EC50 > 100 mg/l Fresh water	Daphnia magna	48 h	IUCLID5

	OECD 202			
	Acute EC50 > 100 mg/l Fresh water OECD 201	Algae	72 h	IUCLID5

Conclusion/Summary : No known significant effects or critical hazards.

Persistence and degradability

Conclusion/Summary : No known significant effects or critical hazards.

Bioaccumulative potential

Conclusion/Summary : No known significant effects or critical hazards.

Mobility in soil

Soil/water partition coefficient (KOC) : Not available.

Mobility : Not available.

Other adverse effects : No known significant effects or critical hazards.


Section 13. Disposal considerations


Product


Methods of disposal : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.


Section 14. Transport information

Regulation: UN Class	
14.1 UN number	3264
14.2 UN proper shipping name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Phosphoric acid,)
14.3 Transport hazard class(es)	8


	
14.4 Packing group	III
14.5 Environmental hazards	No.
Additional information <u>Environmental hazards</u> : No.	

Regulation: IMDG	
14.1 UN number	3264
14.2 UN proper shipping name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Phosphoric acid,)
14.3 Transport hazard class(es)	8 
14.4 Packing group	III
14.5 Environmental hazards	No.
Additional information <u>Marine pollutant</u> : Not available. <u>IMDG Code Segregation group</u> : SG01 <u>Emergency schedules (EmS)</u> : F-A, S-B	

Regulation: IATA	
14.1 UN number	3264
14.2 UN proper shipping name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Phosphoric acid,)
14.3 Transport hazard class(es)	8 
14.4 Packing group	III
14.5 Environmental hazards	No.
Additional information <u>Marine pollutant</u> : No.	

Regulation: DOT Classification	
14.1 UN number	3264
14.2 UN proper shipping name	Corrosive liquid, acidic, inorganic, n.o.s. (Phosphoric acid,)
14.3 Transport hazard class(es)	8 

14.4 Packing group	III
14.5 Environmental hazards	No.
Additional information	
<u>Marine pollutant</u>	: Not available.

Regulation: TDG Class	
14.1 UN number	3264
14.2 UN proper shipping name	CORROSIVE LIQUID, ACIDIC, INORGANIC, N.O.S. (Phosphoric acid,)
14.3 Transport hazard class(es)	8 
14.4 Packing group	III
14.5 Environmental hazards	No.
Additional information	
Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.40-2.42 (Class 8)	
<u>Environmental hazards</u>	: No.

14.6 Special precautions for user : Transport within user's premises: Ensure that persons transporting the product know what to do in the event of an accident or spillage.

IMSBC : Not applicable.

Transport in bulk according to Annex II of MARPOL and the IBC Code : Not available.

Section 15. Regulatory information

Canadian lists

Canadian NPRI : None of the components are listed.

CEPA Toxic substances : None of the components are listed.

Inventory list

New Zealand Inventory of Chemicals (NZIoC): All components are listed or exempted.

Japan inventory: All components are listed or exempted.

China inventory (IECSC): All components are listed or exempted.

Australia inventory (AICS): All components are listed or exempted.

Canada inventory (DSL and NDSL): All components are listed or exempted.

United States inventory (TSCA 8b): All components are listed or exempted.

EC INVENTORY (EINECS/ELINCS): All components are listed or exempted.

Canada: All components are listed or exempted.

Section 16. Other information

Key to abbreviations	: ADN/ADNR = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor bw = Body weight GHS = Globally Harmonized System of Classification and Labelling of Chemicals IATA = International Air Transport Association IBC = Intermediate Bulk Container IMDG = International Maritime Dangerous Goods LogPow = logarithm of the octanol/water partition coefficient MARPOL = International Convention for the Prevention of Pollution From Ships, 1973 as modified by the Protocol of 1978. ("Marpol" = marine pollution) NOHSC - National Occupational Health and Safety Commission RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail SUSDP - Standard for the Uniform Scheduling of Drugs and Poisons UN = United Nations
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Procedure used to derive the classification

Classification	Justification
CORROSIVE TO METALS - Category 1	Expert judgment.
SKIN CORROSION - Category 1	On basis of test data.
SERIOUS EYE DAMAGE - Category 1	On basis of test data.

References	: EU REACH IUCLID5 CSR. National Institute for Occupational Safety and Health, U.S. Dept. of Health, Education, and Welfare, Reports and Memoranda Registry of Toxic Effects of Chemical Substances. Sphera Solutions Inc., 4777 Levy Street, St Laurent, Quebec HAR 2P9, Canada.
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History

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Prepared by	: Yara Chemical Compliance (YCC).

|| Indicates information that has changed from previously issued version.

Notice to reader

To the best of our knowledge, the information contained herein is accurate. However, neither the above-named supplier, nor any of its subsidiaries, assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.