

Conforms: GHS (rev 7) (2017)

(This Safety Data Sheet conforms to the requirements of the Hazard Communication Standard (HCS) (29 CFR 1910.1200(g)), revised in 2012.) - United States

Date of issue/ Date of revision : 08/15/2022
Date of previous issue : 08/07/2020
Version : 6.0



SAFETY DATA SHEET

YaraVita Mangazin

Section 1. Identification

GHS product identifier : YaraVita Mangazin
Product type : Liquid (Suspension)
Product code : PYP05M

Uses

Area of application : Professional applications
Material uses : Fertilizers.

Supplier

Supplier's details : Yara North America, Inc.

Address

Street : 100 North Tampa Street, Suite 3200
Postal code : 33602
City : TAMPA
Country : United States

Telephone number : +1 813 222 5700
Fax no. : +1 813 875 5735
e-mail address of person responsible for this SDS : yna-hesq@yara.com

Emergency telephone number (with hours of operation) : US: Chemtrec 24-hours Emergency Response: 1-800-424-9300
Canada: 24 Hour Emergency Service, CHEMTREC 1-800-424-9300

Section 1. National advisory body/Poison Center

Name : The National Poisons Emergency number
Telephone number : 1 800 222 1222

Section 2. Hazards identification

OSHA/HCS status : This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Classification of the substance or mixture. : SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2
AQUATIC HAZARD (ACUTE) - Category 1
AQUATIC HAZARD (LONG-TERM) - Category 2

GHS label elements

Hazard pictograms



Signal word : Warning

Hazard statements : H373 May cause damage to organs through prolonged or repeated exposure.
H400 Very toxic to aquatic life.
H411 Toxic to aquatic life with long lasting effects.

Precautionary statements

Prevention : P260 Do not breathe gas or vapour.
P273 Avoid release to the environment.
Response : P314-a Get medical attention if you feel unwell.
P391 Collect spillage.

Hazards not otherwise classified : None known.

Additional information : None.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Ingredient name	CAS number	%
Zinc oxide (ZnO)	1314-13-2	>= 20 - < 25
1,2-Ethanediol	107-21-1	>= 2.5 - <= 3
2-Pyridinethiol, 1-oxide, sodium salt (1:1)	3811-73-2	>= 0.001 - < 0.01

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 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

Date of issue : 08/15/2022

Page:2/17

- Eye contact** : Rinse with plenty of running water. Check for and remove any contact lenses. Get medical attention following exposure or if feeling unwell.
- Inhalation** : Avoid inhalation of vapor, spray or mist. If inhaled, remove to fresh air. Get medical attention following exposure or if feeling unwell.
- Skin contact** : Wash with soap and water. Continue to rinse for at least 10 minutes. Get medical attention if irritation develops. Get medical attention following exposure or if feeling unwell.
- Ingestion** : Wash out mouth with water. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Get medical attention following exposure or if feeling unwell.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
- Inhalation** : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : No known significant effects or critical hazards.

Over-exposure signs/symptoms

- Eye contact** : No specific data.
- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

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. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training.

See toxicological information (Section 11)

Section 5. Fire-fighting 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. This material is very toxic to aquatic life. This material is toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials: nitrogen oxides, metal oxide/oxides, ammonia, 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** : Non-flammable.
- Remark** : Non-explosive.

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. Avoid breathing vapor or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment (see Section 8).
- 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). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

Methods and materials 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. Dispose of via a licensed waste disposal contractor.
- Large spill** : Stop leak if without risk. Move containers from spill area. 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). 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

Not for human or animal consumption.

- Protective measures** :
- Put on appropriate personal protective equipment (see Section 8). Do not breathe vapor or mist. Do not ingest. Avoid contact with eyes, skin and clothing. Avoid release to the environment. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
- 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. 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
Zinc oxide (ZnO)	<p>ACGIH TLV (2003-01-01). TWA 2 mg/m³ Form: Respirable fraction STEL 10 mg/m³ Form: Respirable fraction OSHA PEL 1989 (1989-03-01). TWA 5 mg/m³ Form: Fume STEL 10 mg/m³ Form: Fume TWA 10 mg/m³ Form: Total dust TWA 5 mg/m³ Form: Respirable fraction OSHA PEL (1993-06-30). TWA 15 mg/m³ Form: Total dust TWA 5 mg/m³ Form: Respirable fraction TWA 5 mg/m³ Form: Fume NIOSH REL (1994-06-01). TWA 5 mg/m³ Form: Dust and fumes STEL 10 mg/m³ Form: Fume</p>

	CEIL 15 mg/m ³ Form: Dust
1,2-Ethanediol	ACGIH TLV (2017-03-01). STEL 10 mg/m ³ Form: Inhalable fraction. Aerosol only. STEL 50 ppm Form: Vapor fraction TWA 25 ppm Form: Vapor fraction OSHA PEL 1989 (1989-03-01). CEIL 125 mg/m ³ 50 ppm
2-Pyridinethiol, 1-oxide, sodium salt (1:1)	None.

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. Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Wash contaminated clothing before reusing.

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.

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.

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 specialist before handling this product.

Respiratory protection

- : Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

Section 9. Physical and chemical properties and safety characteristics

The conditions of measurement of all properties are at standard temperature and pressure unless otherwise indicated.

Appearance

Physical state	: Liquid [Suspension]
Color	: Pink,
Odor	: Odorless.
Odor threshold	: Not relevant/applicable due to nature of the product.

pH : 9

Melting point/freezing point : < -5 °C (< 23 °F)

Boiling point, initial boiling point, and boiling range : 100 °C (212 °F)

Flash point : Not applicable.

Evaporation rate : Not determined.

Flammability : Non-flammable.

Lower and upper explosion limit/flammability limit : **Lower:** Not determined.

Upper: Not determined.

Vapor pressure : Not determined.

Relative density : Not determined.

Bulk density : Not applicable.

Density : 1.777 g/cm³

Solubility : Not applicable.

Solubility in water : Not relevant/applicable due to nature of the product.

Miscibility with water : Miscible in water.

Partition coefficient: n-octanol/water : Not determined.

Auto-ignition temperature : Not determined.

Decomposition temperature : Not determined.

Viscosity : **Dynamic:** 1,500 - 2,500 mPa.s
Kinematic: Not determined

Explosive properties : Non-explosive.

Oxidizing properties : None

Particle characteristics

Median particle size : Not determined.

Section 10. Stability and reactivity

Reactivity : No specific test data related to reactivity available for this product or its ingredients.

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** : Urea reacts with calcium hypochlorite or sodium hypochlorite to form the explosive nitrogen trichloride.
- 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	Method	Species	Result	Exposure
Zinc oxide (ZnO)				
	LD50 Oral	Rat	> 5,000 mg/kg	Not applicable.
	LC50 Inhalation Dusts and mists	Rat	> 5.7 mg/l	4 h
	OECD 402 LD50 Dermal	Rat	> 5,000 mg/kg	Not applicable.
1,2-Ethanediol				
	LD50 Oral	Rat	7,712 mg/kg	Not applicable.
2-Pyridinethiol, 1-oxide, sodium salt (1:1)				
	OECD 401 LD50 Oral	Rat	1,208 mg/kg	Not applicable.
	LC50 Inhalation Dusts and mists	Rat	1.08 mg/l	4 h
	LD50 Dermal	Rabbit	720 mg/kg	Not applicable.

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

Irritation/Corrosion

Product/ingredient name	Method	Species	Result	Exposure
2-Pyridinethiol, 1-oxide, sodium salt (1:1)				
	Eyes	Rabbit	Irritant	
	OECD 404 Skin	Rabbit	Irritant	

Conclusion/Summary

- Skin** : No known significant effects or critical hazards.
- Eyes** : No known significant effects or critical hazards.
- Respiratory** : No known significant effects or critical hazards.

Sensitization

Conclusion/Summary

- Skin** : No known significant effects or critical hazards.
Respiratory : No known significant effects or critical hazards.

Mutagenicity

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

Carcinogenicity

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

Reproductive toxicity

- 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)

Product/ingredient name	Category	Route of exposure	Target organs
1,2-Ethanediol	Category 2	oral	-

Aspiration hazard

No known significant effects or critical hazards.

- Information on the likely routes of exposure:** : Not available.

Potential acute health effects

- Eye contact** : No known significant effects or critical hazards.
Inhalation : Exposure to decomposition products may cause a health hazard. Serious effects may be delayed following exposure.
Skin contact : No known significant effects or critical hazards.
Ingestion : No known significant effects or critical hazards.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : No specific data.
Inhalation : No specific data.
Skin contact : No specific data.
Ingestion : No specific data.

Delayed and immediate effects and also 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

- Carcinogenicity** : No known significant effects or critical hazards.
- Mutagenicity** : No known significant effects or critical hazards.
- Reproductive toxicity** : No known significant effects or critical hazards.
- Effects on or via lactation** : No known significant effects or critical hazards.
- Other effects** : May cause damage to organs through prolonged or repeated exposure.

Over-exposure signs/symptoms

- Eye contact** : No specific data.
- Inhalation** : No specific data.
- Skin contact** : No specific data.
- Ingestion** : No specific data.

Numerical measures of toxicity**Acute toxicity estimates**

Product/ingredient name	Oral	Dermal	Inhalation (gases)	Inhalation (vapors)	Inhalation (dusts and mists)
YaraVita Mangazin	17,871.2 mg/kg	N/A	N/A	N/A	N/A
1,2-Ethanediol	500 mg/kg	N/A	N/A	N/A	N/A
2-Pyridinethiol, 1-oxide, sodium salt (1:1)	1,208 mg/kg	720 mg/kg	N/A	N/A	1.08 mg/l

Section 12. Ecological information**Toxicity**

Product/ingredient name	Method	Species	Result	Exposure
Zinc oxide (ZnO)				
	OECD 203 Acute LC50 Fresh water	Fish	0.1 - 1 mg/l	96 h
	OECD 202 Acute EC50 Fresh water	Daphnia	0.1 - 1 mg/l	48 h
	OECD 201 Acute IC50 Fresh water	Algae	0.136 mg/l	72 h
1,2-Ethanediol				
	Acute LC50 Fresh water	Fish	> 72,860 mg/l	96 h
2-Pyridinethiol, 1-oxide, sodium salt (1:1)				
	OECD 203 Acute LC50 Fresh water	Fish	0.0066 mg/l	96 h

	Acute EC50 Fresh water	Daphnia	0.022 mg/l	48 h
	Acute EC50 Fresh water	Algae	0.46 mg/l	96 h

Conclusion/Summary : Very toxic to aquatic life. Toxic to aquatic life with long lasting effects.

Persistence and degradability

Conclusion/Summary : Readily biodegradable in plants and soils.

Bioaccumulative potential

Product/ingredient name	LogPow	BCF	Potential
Zinc oxide (ZnO)	Not applicable.	28,960.00	Not applicable.
1,2-Ethanediol	-1.36-1.36	Not applicable.	low

Conclusion/Summary : The product does not show any bioaccumulation phenomena.

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.

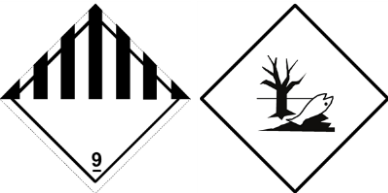
Section 14. Transport information


Regulation: UN Class


14.1 UN number | 3082

Date of issue : 08/15/2022

Page:11/17

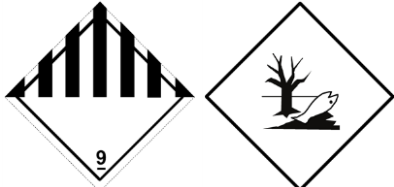
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
14.3 Transport hazard class(es)	9 
14.4 Packing group	III
14.5 Environmental hazards	Yes.
Additional information <u>Environmental hazards</u> : Yes.	

Regulation: IMDG	
14.1 UN number	3082
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
14.3 Transport hazard class(es)	9 
14.4 Packing group	III
14.5 Environmental hazards	Yes.
Additional information <u>Marine pollutant</u> : Yes. <u>Emergency schedules (EmS)</u> : F-A, S-F	

Regulation: IATA	
14.1 UN number	3082
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
14.3 Transport hazard class(es)	9 
14.4 Packing group	III
14.5 Environmental hazards	Yes.
Additional information <u>Marine pollutant</u> : Yes.	

Regulation: DOT Classification	
14.1 UN number	Not applicable

14.2 UN proper shipping name	
14.3 Transport hazard class(es)	
14.4 Packing group	
14.5 Environmental hazards	
Additional information Not a DOT controlled material (United States)., This product is not regulated by HMR.	
<u>Marine pollutant</u>	: Not available.

Regulation: TDG Class	
14.1 UN number	3082
14.2 UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.
14.3 Transport hazard class(es)	9 
14.4 Packing group	III
14.5 Environmental hazards	Yes.
Additional information Product classified as per the following sections of the Transportation of Dangerous Goods Regulations: 2.43-2.45 (Class 9), 2.7 (Marine pollutant mark)	
<u>Environmental hazards</u>	: Yes.

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 IMO instruments : Not available.

Section 15. Regulatory information

United States

U.S. Federal regulations : TSCA 8(a) CDR Exempt/Partial exemption: Not determined
United States - EPA Clean water act (CWA) section 307 - Priority pollutants: Zinc oxide (ZnO);
United States - EPA Clean water act (CWA) section 311 - Hazardous substances: Potassium hydroxide;

Clean Air Act Section 112(b) : Listed

Date of issue : 08/15/2022

Page:13/17

Hazardous Air Pollutants (HAPs)

Clean Air Act Section 602 Class I Substances	:	Not listed
Clean Air Act Section 602 Class II Substances	:	Not listed
DEA List I Chemicals (Precursor Chemicals)	:	Not listed
DEA List II Chemicals (Essential Chemicals)	:	Not listed

SARA 302/304**Composition/information on ingredients**

No products were found.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2

Composition/information on ingredients

Name	%	Classification
1,2-Ethanediol	>= 2.5 - <= 3	SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - oral - Category 2 ACUTE TOXICITY - oral - Category 4

Form R - Reporting requirements

Product name	CAS number	%
Carbonic acid, manganese(2+) salt (1:1)	598-62-9	>= 25 - <= 35
Zinc oxide (ZnO)	1314-13-2	>= 20 - < 25
1,2-Ethanediol	107-21-1	>= 2.5 - <= 3

Supplier notification

Product name	CAS number	%
Carbonic acid, manganese(2+) salt (1:1)	598-62-9	>= 25 - <= 35
Zinc oxide (ZnO)	1314-13-2	>= 20 - < 25
1,2-Ethanediol	107-21-1	>= 2.5 - <= 3

SARA 313 notifications must not be detached from the SDS and any copying and redistribution of the SDS shall include copying and redistribution of the notice attached to copies of the SDS subsequently redistributed.

State regulations

Massachusetts : The following components are listed:
Zinc oxide (ZnO)
1,2-Ethanediol
1,2,3-Propanetriol

- New York** : The following components are listed:
1,2-Ethanediol
- New Jersey** : The following components are listed:
Zinc oxide (ZnO)
1,2-Ethanediol
1,2,3-Propanetriol
- Pennsylvania** : The following components are listed:
Carbonic acid, manganese(2+) salt (1:1)
Zinc oxide (ZnO)
1,2-Ethanediol
1,2,3-Propanetriol

California Prop. 65

⚠ WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov.

Inventory list

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

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

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

Canada: All components are listed or exempted.

Section 16. Other information**Hazardous Material Information System (U.S.A.)**

Health	*	2
Flammability		0
Physical hazards		0

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings and the associated label are not required on MSDSs or products leaving a facility under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered trademark and service mark of the American Coatings Association, Inc.

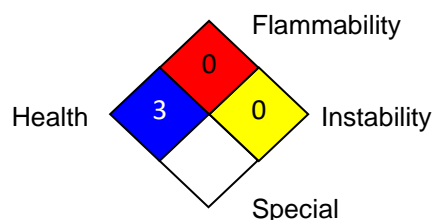
The customer is responsible for determining the PPE code for this material. For more information on HMIS® Personal Protective Equipment (PPE) codes, consult the HMIS® Implementation Manual.

Chronic toxicity:

- : No data available.

* : Carcinogen, Target organs, Reproductive effects, Sensitizer to lungs

National Fire Protection Association (U.S.A.)



Procedure used to derive the classification

Classification	Justification
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2	Calculation method
AQUATIC HAZARD (ACUTE) - Category 1	Calculation method
AQUATIC HAZARD (LONG-TERM) - Category 2	Calculation method

History

Date of printing	: 08/16/2022
Date of issue/Date of revision	: 08/15/2022
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Revision comments	: Section 2. Classification

Version	: 6.0
Prepared by	: Product Stewardship and Compliance (PSC).
Key to abbreviations	: ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor 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) N/A = Not available SGG = Segregation Group UN = United Nations
Key data sources	: EU REACH ECHA/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.

|| 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.