

Conforms: GHS (rev 3)(2009)

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

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Version : 1.1



SAFETY DATA SHEET

Odorlos Liquid

Section 1. Identification

Product name : Odorlos Liquid
Product type : Liquid
Product code : PYN40L

Uses

Area of application : Industrial applications

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, (Canutec 613-996-6666)

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

Classification of the substance or mixture : ACUTE TOXICITY (oral) - Category 4
SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 1

GHS label elements

- Hazard pictograms** : 
- Signal word** : Danger
- Hazard statements** : Harmful if swallowed.
Causes serious eye damage.

Precautionary statements

- Prevention** : Wear protective gloves and eye protection. Do not eat, drink or smoke when using this product. Wash hands thoroughly after handling.
- 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/physician.
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell. Rinse mouth.
- Hazards not otherwise classified** : None.

Section 3. Composition/information on ingredients

- Substance/mixture** : Mixture

Product / ingredient name	CAS number	%
Nitric acid, calcium salt (2:1)	CAS: 10124-37-5	>=30 - <50
Nitric acid ammonium salt (1:1)	CAS: 6484-52-2	>=15 - <30

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.

- Remark** : Aqueous solution

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 appropriate mask or self-contained breathing apparatus.
- Skin contact** : Wash with soap and water. Get medical attention if irritation develops.
- 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 if you feel unwell.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : Vapor may be irritating to eyes and respiratory system. 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** : Harmful if swallowed. 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** : No specific data.
- Ingestion** : Adverse symptoms may include the following:
stomach pains
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. 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. 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. 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.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
nitrogen 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** : Non-flammable.
- 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 specialised 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. 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

- 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. 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. Store locked up. 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

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.

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.

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.
- Personal protective equipment (Pictograms)** : 

Section 9. Physical and chemical properties

Appearance

- Physical state** : Liquid
- Color** : Colorless.
- Odor** : Odorless.
- Odor threshold** : Not determined.
- pH** : 5 - 7 [Conc.: 140 g/l]
- Melting/freezing point** : -4 - 0 °C (24.80 - 32.00 °F)
- Boiling/condensation point** : 100 °C (212.00 °F)
- Sublimation temperature** : Not determined.
- Flash point** : Not determined.
- Evaporation rate** : Not determined.
- Flammability** : Non-flammable.
- Lower and upper explosive (flammable) limits** : **Lower:** Not determined.
Upper: Not determined.
- Vapor pressure** : Not determined.
- Density** : 1.52 g/cm³ @ 25 °C (77.00 °F)
- Relative density** : Not determined.
- Solubility** : Not determined.
- Solubility in water** : > 100 g/l
- Miscibility with water** : This product is totally miscible in water.
- Partition coefficient: n-octanol/water** : Not determined.
- Auto-ignition temperature** : Not determined.
- Decomposition temperature** : Not determined.
- Viscosity** : **Dynamic:** Not determined.
Kinematic: Not determined.
- Explosive properties** : None.
- Oxidizing properties** : None.

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** :
alkalis
combustible materials
reducing materials
organic materials
acids
- 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
Nitric acid, calcium salt (2:1)					
	LD50 Oral	Rat - Female	500 mg/kg 423 Acute Oral toxicity - Acute Toxic Class Method	-	IUCLID 5
Nitric acid ammonium salt (1:1)					
	LD50 Oral	Rat	2,950 mg/kg OECD 401	-	IUCLID 5
	LD50 Dermal	Rat	> 5,000 mg/kg OECD 402	-	IUCLID 5

Conclusion/Summary : Harmful if swallowed.

Irritation/Corrosion

Product / ingredient name	Result	Species	Score	Exposure	Observation	References
Nitric acid, calcium salt (2:1)	Eyes - Severe irritant OECD 405	Rabbit		24 - 72 h	-	
Nitric acid ammonium salt (1:1)	Eyes - Irritant OECD 405	Rabbit			-	IUCLID 5

Conclusion/Summary

- Skin** : No known significant effects or critical hazards.
- Eyes** : Causes serious eye damage.
- Respiratory** : May be irritating to the respiratory system.

Sensitization

Conclusion/Summary

- Skin** : Not sensitizing
- Respiratory** : Not sensitizing

Mutagenicity

- Conclusion/Summary** : No mutagenic effect.

Carcinogenicity

Classification

Product / ingredient name	OSHA	IARC	NTP
Nitric acid, calcium salt (2:1)		2A	

Nitric acid ammonium salt (1:1)		2A	
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- Conclusion/Summary** : There is inadequate evidence in humans and in animals for the carcinogenicity of nitrate in food. Nitrate can be reduced to form nitrite and under acidic gastric conditions nitrite may react to generate N-nitroso compounds (endogenous nitrosation). Under conditions that result in endogenous nitrosation ingested nitrate is classified IARC Group 2A. The product is not to be ingested.

Reproductive toxicity

Product / ingredient name	Maternal toxicity	Fertility	Development toxin	Species	Dose	Exposure	References
Nitric acid, calcium salt (2:1)	-	Negative	Negative	Rat	Oral: > 1500 mg/kg bw/day Repeated dose OECD 422	-	IUCLID 5
Nitric acid ammonium salt (1:1)	-	Negative	Negative	Rat	Oral: > 1500 mg/kg bw/day OECD 422	28 days	IUCLID 5

- Conclusion/Summary** : Not considered to be toxic to the reproductive system.

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 the likely routes of exposure : Not available.

Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : Vapor may be irritating to eyes and respiratory system. 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** : Harmful if swallowed. 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** : No specific data.
- Ingestion** : Adverse symptoms may include the following:
stomach pains
May cause burns to mouth, throat and stomach.

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

Product / ingredient name	Result	Species	Dose	Exposure	References
Nitric acid, calcium salt (2:1)	NOAEL Oral	Rat	> 1000 mg/kg OECD 407	28days	IUCLID 5
Nitric acid ammonium salt (1:1)	NOAEL Oral	Rat	256 mg/kg OECD 422	28days	IUCLID 5
Nitric acid ammonium salt (1:1)	NOEC Dusts and mists Inhalation	Rat	> 185 mg/kg OECD	2weeks 5 hours per day	IUCLID 5

- Conclusion/Summary** : Not toxic.
- 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** : No specific data.
- Ingestion** : Adverse symptoms may include the following:
stomach pains
May cause burns to mouth, throat and stomach.

Numerical measures of toxicity

Acute toxicity estimates
Not available.

Section 12. Ecological information

Toxicity

Product / ingredient name	Result	Species	Exposure	References
Nitric acid, calcium salt (2:1)				
	Acute LC50 1,378 mg/l Fresh water OECD 203	Fish - Labeo boga	96 h	IUCLID 5
	Acute LC50 2,400 mg/l Fresh water	Fish - Lepomis macrochirus	4 d	Proc. Acad. Nat. Sci. Philadelphia106: 185-205
	Acute LC50 490 mg/l Fresh water	Aquatic invertebrates. - Daphnia	48 h	IUCLID 5
	Acute EC50 > 1,700 mg/l Salt water	Aquatic plants - Heterosigma akashiwo	10 d	IUCLID 5
Nitric acid ammonium salt (1:1)				
	Acute LC50 447 mg/l Fresh water	Fish - Labeo boga	48 h	IUCLID 5
	Acute EC50 490 mg/l Fresh water	Aquatic invertebrates. - Daphnia	48 h	IUCLID 5
	Acute EC50 1,700 mg/l Salt water	Aquatic plants - Heterosigma	10 d	IUCLID 5

akashiwo

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

Persistence/degradability

Conclusion/Summary : Readily biodegradable in plants and soils.

Product / ingredient name	Aquatic half-life	Photolysis	Biodegradability
Nitric acid ammonium salt (1:1)			
			Not relevant for inorganic substances.

Bioaccumulative potential

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

Mobility in soil

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

Mobility : This product may move with surface or groundwater flows because its water solubility is: high

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.

United States - RCRA Acute hazardous waste "P" List:

Not listed

United States - RCRA Toxic hazardous waste "U" List:

Not listed

Section 14. Transport information

Regulation: UN Class	
14.1 UN number	Not regulated.
14.2 UN proper shipping name	
14.3 Transport hazard class(es)	
14.4 Packing group	
14.5 Environmental hazards	No.
14.6 Additional information <u>Environmental hazards</u>	: No.

Regulation: IMDG	
14.1 UN number	Not regulated.
14.2 UN proper shipping name	
14.3 Transport hazard class(es)	
14.4 Packing group	
14.5 Environmental hazards	
14.6 Additional information	

Regulation: IATA	
14.1 UN number	Not regulated.
14.2 UN proper shipping name	
14.3 Transport hazard class(es)	
14.4 Packing group	
14.5 Environmental hazards	
14.6 Additional information	

Regulation: DOT Classification	
14.1 UN number	Not regulated.
14.2 UN proper shipping name	
14.3 Transport hazard class(es)	
14.4 Packing group	
14.5 Environmental hazards	No.
14.6 Additional information <u>Environmental hazards</u>	: No.

Regulation: TDG Class	
14.1 UN number	Not regulated.
14.2 UN proper shipping name	
14.3 Transport hazard class(es)	
14.4 Packing group	

14.5 Environmental hazards	No.
14.6 Additional information <u>Environmental hazards</u>	: No.

Special precautions for user : Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

IMSB : Not applicable.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code : Not available.

Section 15. Regulatory information

United States

U.S. Federal regulations :

- United States - TSCA 12(b) - Chemical export notification:** None of the components are listed.
- United States - TSCA 4(a) - Final Test Rules:** Not listed
- United States - TSCA 4(e) - ITC Priority list:** Not listed
- United States - TSCA 4(a) - Proposed test rules:** Not listed
- United States - TSCA 4(f) - Priority risk review:** Not listed
- United States - TSCA 5(a)2 - Final significant new use rules:** Not listed
- United States - TSCA 5(a)2 - Proposed significant new use rules:** Not listed
- United States - TSCA 5(e) - Substances consent order:** Not listed
- United States - TSCA 6 - Final risk management:** Not listed
- United States - TSCA 6 - Proposed risk management:** Not listed
- United States - TSCA 8(a) - Comprehensive assessment report (CAIR):** Not listed
- United States - TSCA 8(a) - Chemical risk rules:** Not listed
- United States - TSCA 8(a) - Dioxin/Furane precursor:** Not listed
- United States - TSCA 8(a) - Chemical Data Reporting (CDR):** Not determined
- United States - TSCA 8(a) - Preliminary assessment report (PAIR):** Not listed
- United States - TSCA 8(c) - Significant adverse reaction (SAR):** Not listed
- United States - TSCA 8(d) - Health and safety studies:** Not listed
- United States - EPA Clean water act (CWA) section 307 - Priority pollutants:** Not listed
- United States - EPA Clean water act (CWA) section 311 - Hazardous substances:** Not listed
- United States - EPA Clean air act (CAA) section 112 -**

Accidental release prevention - Flammable substances: Not listed
United States - EPA Clean air act (CAA) section 112 - Accidental release prevention - Toxic substances: Not listed
United States - Department of commerce - Precursor chemical: Not listed

- Clean Air Act Section 112(b) Hazardous Air Pollutants (HAPs)** : Not listed
- 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
Not applicable.

SARA 304 RQ : Not applicable.

SARA 311/312

Classification : Immediate (acute) health hazard

SARA 313

		<u>Product name</u>	<u>CAS number</u>	<u>Concentration</u>
Form R - Reporting requirements	:	Nitric acid, calcium salt (2:1)	10124-37-5	30 - 50
		Nitric acid ammonium salt (1:1)	6484-52-2	15 - 30
Supplier notification	:	Nitric acid, calcium salt (2:1)	10124-37-5	30 - 50
		Nitric acid ammonium salt (1:1)	6484-52-2	15 - 30

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

State regulations

- Massachusetts** : The following components are listed:
Nitric acid ammonium salt (1:1)
- New York** : None of the components are listed.
- New Jersey** : The following components are listed:
Nitric acid, calcium salt (2:1)
Nitric acid ammonium salt (1:1)
- Pennsylvania** : The following components are listed:
Nitric acid ammonium salt (1:1)

California Prop. 65

This product contains a chemical (or chemicals) known to the State of California to cause cancer and birth defects or other reproductive harm.

International lists

Philippines inventory (PICCS): All components are listed or exempted.

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

Korea inventory: 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.

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 are not required on MSDSs 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 mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

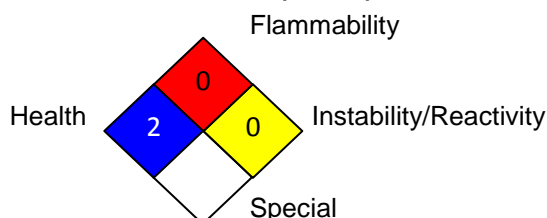
The customer is responsible for determining the PPE code for this material.

Chronic toxicity:

- : No data available.

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

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



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Copyright ©2001, National Fire Protection Association, Quincy, MA 02269. This warning system is intended to be interpreted and applied only by properly trained individuals to identify fire, health and reactivity hazards of chemicals. The user is referred to certain limited number of chemicals with recommended classifications in NFPA 49 and NFPA 325, which would be used as a guideline only. Whether the chemicals are classified by NFPA or not, anyone using the 704 systems to classify chemicals does so at their own risk.

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 73/78 = 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

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.
- IHS, 4777 Levy Street, St Laurent, Quebec HAR 2P9, Canada.

History

Date of printing : 12/05/2014
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Date of previous issue : 03/13/2014
Version : 1.1
Prepared by : Yara Product Classifications & Regulations.

|| 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.