

# SAFETY DATA SHEET

SOLDER PASTE Water Soluble Leaded



## SECTION 1: Identification of the substance/mixture and of the company/undertaking

**Product identifier** : SOLDER PASTE Water Soluble Leaded  
**Product code** : Not available.  
**Chemical name** : Solder Paste Water Soluble Leaded  
**Other means of identification** : Solder Paste, Solder Cream, SolderPlus, PrintPlus - WS, 4xx  
**Product type** : Solid.Paste

### Relevant identified uses of the substance or mixture and uses advised against

Not applicable.

**Supplier's details** : Nordson EFD LLC  
40 Catamore Blvd  
East Providence, RI, 02914 USA  
efdproductcompliance@nordsonefd.com  
+1-401-431-7000

**Emergency telephone number (with hours of operation)** : ChemTel Contract# MIS1138399  
United States, Canada, Puerto Rico, and the U.S. Virgin Islands free phone number:  
1-800-255-3924

ChemTel: Outside of the US, Canada, Puerto Rico and the U.S. Virgin Islands:  
+01-813-248-0585

24/7

## SECTION 2: Hazards identification

**Classification of the substance or mixture** : SKIN IRRITATION - Category 3  
EYE IRRITATION - Category 2A  
SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2  
AQUATIC HAZARD (LONG-TERM) - Category 2  
Percentage of the mixture consisting of ingredient(s) of unknown hazards to the aquatic environment: 31%

### GHS label elements

**Hazard pictograms** :



**Signal word** : Warning

**Hazard statements** : H316 - Causes mild skin irritation.  
H319 - Causes serious eye irritation.  
H373 - May cause damage to organs through prolonged or repeated exposure.  
H411 - Toxic to aquatic life with long lasting effects.

### Precautionary statements

**Prevention** : P280 - Wear eye or face protection.  
P273 - Avoid release to the environment.  
P260 - Do not breathe dust.

## SECTION 2: Hazards identification

- Response** : P391 - Collect spillage.  
P314 - Get medical advice or attention if you feel unwell.  
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P337 + P313 - If eye irritation persists: Get medical advice or attention.
- Storage** : Not applicable.
- Disposal** : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

**Other hazards which do not result in classification** : None known.

## SECTION 3: Composition/information on ingredients

- Substance/mixture** : Mixture
- Chemical name** : Solder Paste Water Soluble Leaded
- Other means of identification** : Solder Paste, Solder Cream, SolderPlus, PrintPlus - WS, 4xx

Ingredient name	%	CAS number
lead powder	≥50 - ≤75	7439-92-1
Poly(oxy-1,2-ethanediyl),α-hydro-ω-hydroxy- Ethane-1,2-diol, ethoxylated	≤5	25322-68-3
Propane-1,2-diol, propoxylated	≤5	25322-69-4
ethanediol	≤5	107-21-1
malic acid	≤3	6915-15-7
silver	<2.5	7440-22-4

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, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 10 minutes. Get medical attention.
- Inhalation** : Remove victim to fresh air and keep at rest in a position comfortable for breathing. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Get medical attention following exposure or if feeling unwell. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.
- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention following exposure or if feeling unwell. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention following exposure or if feeling unwell. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway. Loosen tight clothing such as a collar, tie, belt or waistband.

## SECTION 4: First aid measures

### Most important symptoms/effects, acute and delayed

#### Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Causes mild skin irritation.
- Ingestion** : No known significant effects or critical hazards.

#### Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:  
pain or irritation  
watering  
redness
- Inhalation** : No specific data.
- Skin contact** : Adverse symptoms may include the following:  
irritation  
redness
- 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.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

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 known.

- Specific hazards arising from the chemical** : 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:  
carbon dioxide  
carbon monoxide  
metal oxide/oxides

- 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.

## 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. 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). 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** : Move containers from spill area. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.
- Large spill** : Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Dispose of via a licensed waste disposal contractor. 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 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. See Section 10 for incompatible materials before handling or use.

## SECTION 8: Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

## SECTION 8: Exposure controls/personal protection

Ingredient name	Exposure limits
lead powder	<b>NOM-010-STPS-2014 (Mexico, 4/2016).</b> TWA: 0.05 mg/m <sup>3</sup> , (as Pb) 8 hours.
ethanediol	<b>NOM-010-STPS-2014 (Mexico, 4/2016).</b> CEIL: 100 mg/m <sup>3</sup> Form: Only AEROSOL
silver	<b>NOM-010-STPS-2014 (Mexico, 4/2016).</b> TWA: 0.1 mg/m <sup>3</sup> 8 hours. Form: fume and powder

**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** : 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. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

**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. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash 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. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

**Body protection** : Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

**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** : Based on the hazard and potential for exposure, select a respirator that meets the appropriate standard or certification. Respirators must be used according to a respiratory protection program to ensure proper fitting, training, and other important aspects of use.

## SECTION 9: Physical and chemical properties

### Appearance

**Physical state** : Solid. [Paste.]

**Color** : Gray. [Dark]

**Odor** : Not available.

**Odor threshold** : Not available.

**pH** : Not available.

**Melting point** : Not available.

## SECTION 9: Physical and chemical properties

<b>Boiling point</b>	: Not available.
<b>Flash point</b>	: Not available.
<b>Evaporation rate</b>	: Not available.
<b>Flammability (solid, gas)</b>	: Not available.
<b>Lower and upper explosive (flammable) limits</b>	: Not available.
<b>Vapor pressure</b>	: Not available.
<b>Vapor density</b>	: Not available.
<b>Relative density</b>	: Not available.
<b>Solubility</b>	: Soluble in the following materials: hot water. Very slightly soluble in the following materials: cold water.
<b>Solubility in water</b>	: Not available.
<b>Partition coefficient: n-octanol/water</b>	: Not available.
<b>Auto-ignition temperature</b>	: Not available.
<b>Decomposition temperature</b>	: Not available.
<b>Viscosity</b>	: Not available.
<b>Flow time (ISO 2431)</b>	: Not available.
<b>Molecular weight</b>	: Not applicable.

## SECTION 10: Stability and reactivity

<b>Reactivity</b>	: No specific test data related to reactivity available for this product or its ingredients.
<b>Chemical stability</b>	: The product is stable.
<b>Possibility of hazardous reactions</b>	: Under normal conditions of storage and use, hazardous reactions will not occur.
<b>Conditions to avoid</b>	: No specific data.
<b>Incompatible materials</b>	: No specific data.
<b>Hazardous decomposition products</b>	: 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
ethanediol	LD50 Oral	Rat	4700 mg/kg	-
malic acid	LD50 Oral	Rat	1600 mg/kg	-

#### Irritation/Corrosion

Product/ingredient name	Result	Species	Score	Exposure	Observation
Poly(oxy-1,2-ethanediyl), α-hydro-ω-hydroxy-Ethane-1,2-diol, ethoxylated	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Eyes - Mild irritant	Rabbit	-	500 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Skin - Mild irritant	Rabbit	-	500 mg	-
Propane-1,2-diol, propoxylated	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
		Rabbit	-		

**SECTION 11: Toxicological information**

ethanediol	Eyes - Mild irritant	Rabbit	-	500 mg	-
	Skin - Mild irritant	Rabbit	-	500 mg	-
	Skin - Mild irritant	Rabbit	-	24 hours 500 mg	-
malic acid	Eyes - Mild irritant	Rabbit	-	24 hours 500 mg	-
	Eyes - Mild irritant	Rabbit	-	1 hours 100 mg	-
	Eyes - Moderate irritant	Rabbit	-	6 hours 1440 mg	-
	Skin - Mild irritant	Rabbit	-	555 mg	-
	Eyes - Severe irritant	Rabbit	-	24 hours 750 ug	-
	Skin - Moderate irritant	Rabbit	-	24 hours 20 mg	-

**Sensitization**

Not available.

**Mutagenicity**

Not available.

**Carcinogenicity**

Not available.

**Reproductive toxicity**

Not available.

**Teratogenicity**

Not available.

**Specific target organ toxicity (single exposure)**

Not available.

**Specific target organ toxicity (repeated exposure)**

Name	Category	Route of exposure	Target organs
lead powder	Category 2	oral	-

**Aspiration hazard**

Not available.

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

**Potential acute health effects**

**Eye contact** : Causes serious eye irritation.  
**Inhalation** : No known significant effects or critical hazards.  
**Skin contact** : Causes mild skin irritation.  
**Ingestion** : No known significant effects or critical hazards.

**Symptoms related to the physical, chemical and toxicological characteristics**

**Eye contact** : Adverse symptoms may include the following:  
 pain or irritation  
 watering  
 redness  
**Inhalation** : No specific data.



## SECTION 11: Toxicological information

- Skin contact** : Adverse symptoms may include the following:  
irritation  
redness
- 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

Not available.

- General** : May cause damage to organs through prolonged or repeated exposure.
- 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.

### Numerical measures of toxicity

#### Acute toxicity estimates

Product/ingredient name	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
Solder Paste Water Soluble Leaded	44056.5	N/A	N/A	N/A	N/A
ethanediol	4700	N/A	N/A	N/A	N/A
malic acid	1600	N/A	N/A	N/A	N/A

## SECTION 12: Ecological information

### Toxicity

Product/ingredient name	Result	Species	Exposure
Poly(oxy-1,2-ethanediyl), $\alpha$ -hydro- $\omega$ -hydroxy-Ethane-1,2-diol, ethoxylated Propane-1,2-diol, propoxylated ethanediol	Acute EC50 105 ppb Marine water	Algae - Chaetoceros sp. - Exponential growth phase	72 hours
	Acute EC50 0.489 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Acute EC50 8000 $\mu$ g/l Fresh water	Aquatic plants - Lemna minor	4 days
	Acute LC50 530 $\mu$ g/l Fresh water	Crustaceans - Ceriodaphnia reticulata	48 hours
	Acute LC50 0.594 mg/l Fresh water	Daphnia - Daphnia magna	48 hours
	Acute LC50 0.44 ppm Fresh water	Fish - Cyprinus carpio - Juvenile (Fledgling, Hatchling, Weanling)	96 hours
	Chronic NOEC 0.25 mg/l Marine water	Algae - Ulva pertusa	96 hours
	Chronic NOEC 0.03 $\mu$ g/l Fresh water	Fish - Cyprinus carpio	4 weeks
	Acute LC50 >1000000 $\mu$ g/l Fresh water	Fish - Salmo salar - Parr	96 hours
	Acute LC50 650000 $\mu$ g/l Marine water	Fish - Menidia beryllina	96 hours
	Acute LC50 6900000 $\mu$ g/l Fresh water	Crustaceans - Ceriodaphnia dubia - Neonate	48 hours
	Acute LC50 41000 mg/l Fresh water	Daphnia - Daphnia magna -	48 hours



## SECTION 12: Ecological information

silver	Acute LC50 8050000 µg/l Fresh water Acute EC50 1.4 µg/l Marine water Acute EC50 0.24 µg/l Fresh water Acute LC50 11 µg/l Fresh water	Neonate Fish - Pimephales promelas Algae - Chroomonas sp. Daphnia - Daphnia magna Crustaceans - Ceriodaphnia reticulata	96 hours 4 days 48 hours 48 hours
	Acute LC50 2.13 µg/l Fresh water Chronic NOEC 5 mg/l Marine water	Fish - Pimephales promelas Algae - Glenodinium halli	96 hours 72 hours

### Persistence and degradability

Not available.

### Bioaccumulative potential

Product/ingredient name	LogP <sub>ow</sub>	BCF	Potential
Poly(oxy-1,2-ethanediyl),α-hydro-ω-hydroxy-Ethane-1,2-diol, ethoxylated	-	3.2	low
Propane-1,2-diol, propoxylated	-0.68 to 0.01	-	low
ethanediol	-1.36	-	low
malic acid	-1.26	-	low
silver	-	70	low

### Mobility in soil

Soil/water partition coefficient (K<sub>oc</sub>) : Not available.

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










## SECTION 13: Disposal considerations

**Disposal methods** : 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

	DOT Classification	TDG Classification	Mexico Classification	IMDG	IATA
UN number	UN3077	UN3077	UN3077	UN3077	UN3077
UN proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (lead powder)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (silver)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (silver)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (silver)	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (silver)

## SECTION 14: Transport information

Transport hazard class(es)	9 	9  	9  	9  	9  
Packing group	III	III	III	III	III
Environmental hazards	No.	Yes.	Yes.	Yes.	Yes.

### Additional information

- DOT Classification** : **Reportable quantity** 17.313 lbs / 7.8601 kg. The classification of the product is due solely to the presence of one or more US DOT-listed 'Hazardous substances' that are subject to reportable quantity requirements and only applies to shipments of packages greater than, or equal to, the product reportable quantity. Package sizes less than the product reportable quantity are not regulated as hazardous materials.
- TDG Classification** : 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). Non-bulk packages of this product are not regulated as dangerous goods when transported by road or rail.
- Mexico Classification** : The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.
- IMDG** : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8.
- IATA** : This product is not regulated as a dangerous good when transported in sizes of ≤5 L or ≤5 kg, provided the packagings meet the general provisions of 5.0.2.4.1, 5.0.2.6.1.1 and 5.0.2.8.

**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.

**Transport in bulk according to IMO instruments** : Not available.

## SECTION 15: Regulatory information

### International regulations

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



#### Chemical Weapon Convention List Schedules I, II & III Chemicals

Not listed.

#### Montreal Protocol

Not listed.

#### Stockholm Convention on Persistent Organic Pollutants

Not listed.

#### Rotterdam Convention on Prior Informed Consent (PIC)

## SECTION 15: Regulatory information

Not listed.

### [UNECE Aarhus Protocol on POPs and Heavy Metals](#)

Ingredient name	List name	Status
Lead (Pb)	Heavy metals - Annex 1	Listed

### [Inventory list](#)

<a href="#">Australia</a>	: All components are listed or exempted.
<a href="#">Canada</a>	: All components are listed or exempted.
<a href="#">China</a>	: All components are listed or exempted.
<a href="#">Europe</a>	: All components are listed or exempted.
<a href="#">Japan</a>	: <b>Japan inventory (ENCS)</b> : Not determined. <b>Japan inventory (ISHL)</b> : Not determined.
<a href="#">New Zealand</a>	: All components are listed or exempted.
<a href="#">Philippines</a>	: All components are listed or exempted.
<a href="#">Republic of Korea</a>	: All components are listed or exempted.
<a href="#">Taiwan</a>	: All components are listed or exempted.
<a href="#">Thailand</a>	: Not determined.
<a href="#">Turkey</a>	: All components are listed or exempted.
<a href="#">United States</a>	: All components are active or exempted.
<a href="#">Viet Nam</a>	: 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. 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.

### [History](#)

<a href="#">Date of printing</a>	: 5/27/2021
<a href="#">Date of issue/Date of revision</a>	: 5/27/2021
<a href="#">Date of previous issue</a>	: No previous validation
<a href="#">Version</a>	: 0.01

<a href="#">Key to abbreviations</a>	: 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
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### [Procedure used to derive the classification](#)

**SECTION 16: Other information**

Classification	Justification
SKIN IRRITATION - Category 3 EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY (REPEATED EXPOSURE) - Category 2 AQUATIC HAZARD (LONG-TERM) - Category 2	Calculation method Calculation method Calculation method Calculation method

**References** : Not available.

Indicates information that has changed from previously issued version.

**Notice to reader**

The information, which is based on the current knowledge of the chemical substance or mixture and applies to appropriate safety precautions for the product, is deemed correct but is not exhaustive and will be used only as a guide.