

### Section 1. Identification

**GHS product identifier** : SPIRIT 5000

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

**Identified uses**

Metalworking fluid  
semi-synthetic

**Supplier's details** : TotalEnergies Marketing USA, Inc.  
1201 Louisiana St. Suite 1800  
Houston, TX 77002  
Phone: 713-483-5000  
ProductSafety@totalenergies.com

**Emergency telephone number (with hours of operation)** :

1-866-928-0789 (For Emergencies, call CARECHEM 24/7 Domestic)  
1-215-207-0061 (For Emergencies, call CARECHEM 24/7 International)

### 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** : SKIN IRRITATION - Category 2  
EYE IRRITATION - Category 2A

GHS label elements

**Hazard pictograms** :



**Signal word** : Warning

**Hazard statements** : Causes skin irritation.  
Causes serious eye irritation.

Precautionary statements

**Prevention** : Wear protective gloves. Wear eye or face protection. Wash thoroughly after handling.

**Response** : Take off contaminated clothing and wash it before reuse. IF ON SKIN: Wash with plenty of water. If skin irritation occurs: Get medical advice or attention. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice or attention.

**Storage** : Not applicable.

**Disposal** : Not applicable.

**Supplemental label elements** : Avoid contact with skin and clothing. Wash thoroughly after handling.

**Hazards not otherwise classified** : Prolonged or repeated contact may dry skin and cause irritation.

## Section 3. Composition/information on ingredients

**Substance/mixture** : Mixture

Ingredient name	% (w/w)	CAS number
Distillates (petroleum), hydrotreated heavy naphthenic	≥50 - ≤75	64742-52-5
1-phenoxypropan-2-ol	≥10 - ≤25	770-35-4
(Z)-9-Octadecen-1-ol ethoxylated	≤10	9004-98-2
Ricinoleic acid homopolymer ester	≤10	-

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

**Additional information** : Aqueous solution Mineral oil of petroleum origin Product containing mineral oil with less than 3% DMSO extract as measured by IP 346 The product is made from synthetic base oils

**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 if adverse health effects persist or are severe. 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** : Wash skin thoroughly with soap and water or use recognized skin cleanser. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. 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 if adverse health effects persist or are severe. 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.

### 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 skin irritation. Defatting to the skin.
- 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  
dryness  
cracking
- 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. Fire-fighting measures**

### Extinguishing media

- Suitable extinguishing media** : Use dry chemical, CO<sub>2</sub>, alcohol-resistant foam or water spray (fog).
- Unsuitable extinguishing media** : Do not use water jet.

**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** : carbon oxides (CO, CO<sub>2</sub>)

**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. Avoid breathing 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 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**

**Protective measures** : Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid breathing vapor or mist. 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** : Do not store below the following temperature: 0°C (32°F). 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**

Ingredient name	Exposure limits
Distillates (petroleum), hydrotreated heavy naphthenic	<p><b>OSHA PEL (United States, 5/2018). [Oil mist, mineral]</b> TWA: 5 mg/m<sup>3</sup> 8 hours.</p> <p><b>ACGIH TLV (United States, 1/2022). [Mineral Oil, pure, highly and severely refined]</b> TWA: 5 mg/m<sup>3</sup> 8 hours. Form: Inhalable fraction</p> <p><b>NIOSH REL (United States, 10/2020). [OIL MIST MINERAL]</b> TWA: 5 mg/m<sup>3</sup> 10 hours. Form: Mist</p>



# SPIRIT 5000

TotalEnergies

SDS # : 086829

1-phenoxypropan-2-ol  
(Z)-9-Octadecen-1-ol ethoxylated  
Ricinoleic acid homopolymer ester

STEL: 10 mg/m<sup>3</sup> 15 minutes. Form: Mist  
None.  
None.  
None.

### Biological exposure indices

No exposure indices known.

**Advisory OEL** : Mineral oil mist: USA: OSHA (PEL) TWA 5 mg/m<sup>3</sup>, NIOSH (REL) TWA 5 mg/m<sup>3</sup>, STEL 10 mg/m<sup>3</sup>, ACGIH (TLV) TWA 5 mg/m<sup>3</sup> (highly refined)

**Appropriate engineering controls** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.

**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.  
Hydrocarbon-proof gloves  
Impermeable butyl rubber gloves  
Neoprene gloves.  
Fluorinated rubber  
nitrile rubber  
Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.

**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.

**Respiratory protection** : Ensure adequate ventilation and check that a safe, breathable atmosphere is present before entry into confined spaces. In case of insufficient ventilation, wear suitable respiratory equipment. The use of breathing apparatus must comply strictly with the manufacturer's instructions and the regulations governing their choices and uses.

## Section 9. Physical and chemical properties

The conditions of measurement of all properties are at standard temperature (20°C / 68°F) and pressure (1013 hPa) unless otherwise indicated

### Appearance

<b>Physical state</b>	: Liquid. [Crystalline]
<b>Color</b>	: Amber.
<b>Odor</b>	: Mild.
<b>Odor threshold</b>	: Not available.
<b>pH</b>	: 9.4 [Conc. (% w/w): 5%] [Aqueous solution]
<b>Melting point/freezing point</b>	: Not available.
<b>Boiling point</b>	: >105°C (>221°F)
<b>Flash point</b>	: Open cup: Not applicable.
<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>	: 1
<b>Density</b>	: 1 g/cm <sup>3</sup> [20°C]
<b>Solubility(ies)</b>	:

Media	Result
water	Soluble

**Miscible with water** : Yes.

**Partition coefficient: n-octanol/water** : Not applicable.

**Auto-ignition temperature** : Not available.

**Decomposition temperature** : Not available.

**Viscosity** : Kinematic (40°C (104°F)): Not applicable.

**Flow time (ISO 2431)** : Not available.

### Particle characteristics

**Median particle size** : Not applicable.

## Section 10. Stability and reactivity

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

**Chemical stability** : Stable under recommended storage and handling conditions (see Section 7).

**Possibility of hazardous reactions** : Under normal conditions of storage and use, hazardous reactions will not occur.

**Conditions to avoid** : Keep away from extreme heat.

**Incompatible materials** : No specific data.

**Hazardous decomposition products** : carbon oxides (CO, CO<sub>2</sub>)

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

Product/substance	Result	Species	Dose	Exposure	Test
Distillates (petroleum), hydrotreated heavy naphthenic	LC50 Inhalation Dusts and mists	Rat	5.54 mg/l	4 hours	OECD 403
1-phenoxypropan-2-ol	LD50 Dermal	Rabbit	>2000 mg/kg	-	OECD 402
	LD50 Oral	Rat	>5000 mg/kg	-	OECD 401
	LC50 Inhalation Dusts and mists	Rat - Male, Female	>5.4 mg/l	4 hours	OECD 403
	LD50 Dermal	Rat - Male, Female	>2000 mg/kg	-	NTP 402
	LD50 Oral	Rat - Male, Female	2830 mg/kg	-	OECD 401

**Conclusion/Summary** : Based on available data, the classification criteria are not met.

#### Irritation/Corrosion

**Skin** : Based on available data, the classification criteria are met.

**Eyes** : Based on available data, the classification criteria are met.

**Respiratory** : Based on available data, the classification criteria are not met.

#### Sensitization

**Skin** : Based on available data, the classification criteria are not met.

**Respiratory** : Based on available data, the classification criteria are not met.

#### Mutagenicity

**Conclusion/Summary** : Based on available data, the classification criteria are not met.

#### Carcinogenicity

**Conclusion/Summary** : Based on available data, the classification criteria are not met.

#### Reproductive toxicity

**Conclusion/Summary** : Based on available data, the classification criteria are not met.

#### Teratogenicity

**Conclusion/Summary** : Based on available data, the classification criteria are not met.

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

**Conclusion/Summary** : Based on available data, the classification criteria are not met.

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

**Conclusion/Summary** : Based on available data, the classification criteria are not met.

#### Aspiration hazard

Name	Result
Distillates (petroleum), hydrotreated heavy naphthenic	ASPIRATION HAZARD - Category 1

**Conclusion/Summary** : Based on available data, the classification criteria are not met.

**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 skin irritation. Defatting to the skin.
- 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.
- Skin contact** : Adverse symptoms may include the following:  
irritation  
redness  
dryness  
cracking
- 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** : Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.
- 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/substance	Oral (mg/kg)	Dermal (mg/kg)	Inhalation (gases) (ppm)	Inhalation (vapors) (mg/l)	Inhalation (dusts and mists) (mg/l)
SPIRIT 5000	25000	N/A	N/A	N/A	N/A
Distillates (petroleum), hydrotreated heavy naphthenic	N/A	N/A	N/A	N/A	5.54
1-phenoxypropan-2-ol	2830	2500	N/A	N/A	N/A
(Z)-9-Octadecen-1-ol ethoxylated	2500	N/A	N/A	N/A	N/A
Ricinoleic acid homopolymer ester	2500	N/A	N/A	N/A	N/A



**Other information** :  
Not available.

## Section 12. Ecological information

### Toxicity

Product/substance	Result	Species	Exposure	Test
Distillates (petroleum), hydrotreated heavy naphthenic	Acute EC50 >10000 mg/l	Daphnia - <i>Daphnia magna</i>	48 hours	OECD 202
	Acute NOEC 101 mg/l	Algae - <i>Pseudokirchnerella subcapitata</i>	72 hours	OECD 201
1-phenoxypropan-2-ol	Chronic NOEL 10 mg/l	Daphnia - <i>Daphnia magna</i>	21 days	OECD 211
	Acute EC50 >100 mg/l	Algae - <i>Desmodesmus subspicatus</i>	72 hours	-
	Acute LC50 370 mg/l	Daphnia - <i>Daphnia magna</i>	48 hours	-
	Acute LC50 280 mg/l	Fish	96 hours	-

### Persistence and degradability

Product/substance	Aquatic half-life	Photolysis	Biodegradability
1-phenoxypropan-2-ol	-	-	Readily

### Bioaccumulative potential

Product/substance	LogK <sub>ow</sub>	BCF	Potential
1-phenoxypropan-2-ol	1.41	-	Low

### Mobility in soil

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

**Mobility in soil** : Given its physical and chemical characteristics, the product is generally mobile in the ground. It may contaminate ground water. The product may evaporate. Soluble in water.

**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	IMDG	ICAO/IATA
UN/ID No	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	No.	No.	No.

### Additional information

**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

**U.S. Federal regulations** : TSCA 8(a) PAIR: 1-phenoxypropan-2-ol  
TSCA 8(a) CDR Exempt/Partial exemption: Not determined

**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

#### Composition/information on ingredients

No products were found.

**SARA 304 RQ** : Not applicable.

### SARA 311/312

**Classification** : SKIN IRRITATION - Category 2  
EYE IRRITATION - Category 2A  
HNOC - Defatting irritant

#### Composition/information on ingredients



Name	%	Classification
Distillates (petroleum), hydrotreated heavy naphthenic	≥50 - ≤75	ASPIRATION HAZARD - Category 1
1-phenoxypropan-2-ol	≥10 - ≤25	EYE IRRITATION - Category 2A SKIN IRRITATION - Category 2
(Z)-9-Octadecen-1-ol ethoxylated	≤10	EYE IRRITATION - Category 2A SKIN IRRITATION - Category 2
Ricinoleic acid homopolymer ester	≤10	SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2B

**State regulations**

**Massachusetts** : The following components are listed: OIL MIST, MINERAL

**New York** : None of the components are listed.

**New Jersey** : None of the components are listed.

**Pennsylvania** : None of the components are listed.

**California Prop. 65**

To the best of our knowledge, this product does not contain any substances known to the State of California to cause cancer, developmental and/or reproductive harm

**International regulations****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)**

Not listed.

**UNECE Aarhus Protocol on POPs and Heavy Metals**

Not listed.

**Inventory list**

- Australia inventory (AIC)** : Not determined.
- Canada inventory (DSL/NDL)** : All components are listed or exempted.
- China inventory (IECSC)** : Not determined.
- Europe inventory (EC)** : All components are listed or exempted.
- Japan inventory** : **Japan inventory (CSCL)**: Not determined.  
**Japan inventory (ISHL)**: Not determined.
- New Zealand Inventory of Chemicals (NZIoC)** : Not determined.
- Philippines inventory (PICCS)** : Not determined.
- Korea inventory (KECI)** : Not determined.
- Taiwan Chemical Substances Inventory (TCSI)** : Not determined.
- Thailand inventory** : Not determined.
- Turkey inventory** : Not determined.
- United States inventory (TSCA 8b)** : All components are listed or exempted.
- Vietnam inventory** : Not determined.

The information stated in this section relates solely to the conformity of the chemical product with the countries Inventories. The information used to confirm the inventory status of this product may be based on additional data to the chemical composition shown in Section 3. Other regulations may apply for importation or marketing authorizations.

## 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 SDSs 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.

### 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.

### Procedure used to derive the classification

Classification	Justification
SKIN IRRITATION - Category 2 EYE IRRITATION - Category 2A	Calculation method Calculation method

### History

**Date of revision** : 2023/06/29  
**previous revision date** : No previous validation  
**Version** : 1

### 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

## References

: Not available.

✔ 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.