

## Section 1. Identification

**Product identifier** : CAPRANO TDI 15W-40

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

#### Identified uses

Automotive (motor) oil  
Heavy duty diesel

**Supplier's details** :

TotalEnergies Marketing Asia-Pacific Middle East Pte. Ltd.  
182 Cecil Street  
#27-01 Frasers Tower  
Singapore 069547  
Tel: +65 6879 2200  
ms.ap-sds@totalenergies.com

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

Asia-Pacific: +65 3158 1074

## Section 2. Hazards identification

**Classification of the  
substance or mixture** : Not classified.

### GHS label elements, including precautionary statements

**Signal word** : No signal word.

**Hazard statements** : ☒ No hazard statement.

#### Precautionary statements

**Prevention** : Not applicable.

**Response** : Not applicable.

**Storage** : Not applicable.

**Disposal** : Not applicable.

**Other hazards which do not  
result in classification** : Prolonged or repeated contact may dry skin and cause irritation.

## Section 3. Composition/information on ingredients

**Substance/mixture** : Mixture

| Ingredient name                                           | % (w/w) | Identifiers                      |
|-----------------------------------------------------------|---------|----------------------------------|
| Distillates (petroleum), hydrotreated light paraffinic    | ≤5      | CAS: 64742-55-8<br>EC: 265-158-7 |
| Distillates (petroleum), solvent-dewaxed heavy paraffinic | ≤3      | CAS: 64742-65-0<br>EC: 265-169-7 |
| phenol, (tetrapropenyl) derivatives                       | ≤0.1    | CAS: 74499-35-7                  |

**Additional information** : Mineral oil of petroleum origin. Product containing mineral oil with less than 3% DMSO extract as measured by IP 346

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.

The total concentration of ingredients in this product, reported or not in this section, is 100%.

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

**Chemical formula** : Not applicable.

## 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. Get medical attention if symptoms occur. 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** : No known significant effects or critical hazards.
- Inhalation** : No known significant effects or critical hazards.
- Skin contact** : Defatting to the skin. May cause skin dryness and irritation.
- Ingestion** : No known significant effects or critical hazards.

#### Over-exposure signs/symptoms

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

- Skin contact** : Irritation  
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>, water spray (fog) or foam.
- 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 monoxide  
carbon dioxide  
phosphorus oxides  
sulfur oxides  
Hydrogen sulfide  
Mercaptans  
Zinc 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. 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. Absorb with an inert 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. Prevent entry into sewers, water courses, basements or confined areas. 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. Dispose of via a licensed waste disposal contractor.

## Section 7. Handling and storage

### Precautions for safe handling

- Protective measures** : Put on appropriate personal protective equipment (see Section 8).  
See Section 10 for incompatible materials before handling or use.
- 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.

## Section 8. Exposure controls/personal protection

### Control parameters

#### Occupational exposure limits

| Ingredient name                                           | Exposure limits                                                                                                                                                                                                 |
|-----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Distillates (petroleum), hydrotreated light paraffinic    | <b>Workplace Safety and Health Act (Singapore, 1/2025) [Oil Mist, mineral]</b><br>PEL (long term) 8 hours: 5 mg/m <sup>3</sup> . Form: Mist.<br>PEL (short term) 15 minutes: 10 mg/m <sup>3</sup> . Form: Mist. |
| Distillates (petroleum), solvent-dewaxed heavy paraffinic | <b>Workplace Safety and Health Act (Singapore, 1/2025) [Oil Mist, mineral]</b><br>PEL (long term) 8 hours: 5 mg/m <sup>3</sup> . Form: Mist.<br>PEL (short term) 15 minutes: 10 mg/m <sup>3</sup> . Form: Mist. |

#### 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** : ☒ In case of contact through splashing: safety glasses with side-shields.
- 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.  
Hydrocarbon-proof 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** : ☒ 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

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

### Appearance

- Physical state** : Liquid.
- Color** : ☒ Orange.
- Odor** : Characteristic.
- Odor threshold** : Not available.
- pH** : ☒ Not applicable.
- Melting point/freezing point** : ☒ Not available.
- Boiling point** : ☒ Not available.
- Flash point** : Open cup: 239°C (462.2°F) [ASTM D 92]
- Evaporation rate** : Not available.
- Flammability (solid, gas)** : ☒ Not applicable.
- Lower and upper explosive (flammable) limits** : ☒ Lower: 0.9%  
Upper: 7%
- Vapor pressure** : ☒ Not available.
- Vapor density** : ☒ Not available.
- Relative density** : ☒ 0.868 [ASTM D 4052]
- Density** : ☒ 0.868 g/cm³ [15°C] [ASTM D 4052]
- Solubility(ies)** :

| Media                                     | Result      |
|-------------------------------------------|-------------|
| <input checked="" type="checkbox"/> water | Not soluble |

|                                        |                                                                                                                                                                |
|----------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Miscible with water                    | : No.                                                                                                                                                          |
| Partition coefficient: n-octanol/water | : Not applicable.                                                                                                                                              |
| Auto-ignition temperature              | : 239°C (>462.2°F) [ASTM E 659]                                                                                                                                |
| Decomposition temperature              | : Not available.                                                                                                                                               |
| Viscosity                              | : Dynamic (room temperature): Not available.<br>Kinematic (room temperature): Not available.<br>Kinematic (40°C (104°F)): 101.8 mm²/s (101.8 cSt) [ASTM D 445] |
| Flow time (ISO 2431)                   | : Not available.                                                                                                                                               |
| <b>Particle characteristics</b>        |                                                                                                                                                                |
| 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                | : No specific data.                                                                                    |
| Incompatible materials             | : Strong oxidizing agents                                                                              |
| Hazardous decomposition products   | : Under normal conditions of storage and use, hazardous decomposition products should not be produced. |
| SADT                               | : Not available.                                                                                       |

## Section 11. Toxicological information

### Information on toxicological effects

#### Acute toxicity

| Product/substance                                         | Result                                                                                                                                                                                                                                                                                                                                                                            |
|-----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Distillates (petroleum), hydrotreated light paraffinic    | <b>Rat - Oral - LD50</b><br>>5000 mg/kg<br>OECD [420]<br><b>Rabbit - Dermal - LD50</b><br>>5000 mg/kg<br>OECD [402]<br><b>Rat - Inhalation - LC50 Dusts and mists</b><br>>5 mg/l [4 hours]<br>OECD [403]<br><b>Rabbit - Dermal - LD50</b><br>>5000 mg/kg<br>OECD [402]<br><b>Rat - Oral - LD50</b><br>>5000 mg/kg<br>OECD [420]<br><b>Rat - Inhalation - LC50 Dusts and mists</b> |
| Distillates (petroleum), solvent-dewaxed heavy paraffinic | <b>Rat - Oral - LD50</b><br>>5000 mg/kg<br>OECD [420]<br><b>Rat - Inhalation - LC50 Dusts and mists</b>                                                                                                                                                                                                                                                                           |



**TotalEnergies**

# CAPRANO TDI 15W-40

SDS # : 084277

phenol, (tetrapropenyl) deriva-tives

>5 mg/l [4 hours]  
OECD [403]  
**Rat - Oral - LD50**  
>2000 mg/kg  
**Rat - Dermal - LD50**  
>2000 mg/kg

## Acute toxicity estimates

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

## Skin corrosion/irritation

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

## Serious eye damage/eye irritation

Based on available data, the classification criteria are not met. The supplier of one or more of the components contained within this formulation has indicated that he has data on the components and/or similar mixtures, which confirms that at the concentration used, classification is not required.

## Respiratory corrosion/irritation

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

## Respiratory or skin sensitization

### Skin

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

### Respiratory

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

## Germ cell mutagenicity

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

## Carcinogenicity

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

## Reproductive toxicity

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

## Specific target organ toxicity (single exposure)

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

## Specific target organ toxicity (repeated exposure)

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

## Aspiration hazard

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

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

## Potential acute health effects

|                     |                                                                 |
|---------------------|-----------------------------------------------------------------|
| <b>Eye contact</b>  | : No known significant effects or critical hazards.             |
| <b>Inhalation</b>   | : No known significant effects or critical hazards.             |
| <b>Skin contact</b> | : Defatting to the skin. May cause skin dryness and irritation. |
| <b>Ingestion</b>    | : No known significant effects or critical hazards.             |

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

|                    |                     |
|--------------------|---------------------|
| <b>Eye contact</b> | : No specific data. |
| <b>Inhalation</b>  | : No specific data. |

**Skin contact** : Irritation  
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

**General** : Prolonged or repeated contact can defat the skin and lead to irritation, cracking and/or dermatitis.

**Carcinogenicity** : During use in engines, contamination of oil with low levels of combustion products occurs. Used motor oils have been shown to cause skin cancer in mice following repeated application and continuous exposure. Brief or intermittent skin contact with used motor oil is not expected to have serious effects in humans if the oil is thoroughly removed by washing with soap and water.

**Mutagenicity** : No known significant effects or critical hazards.

**Reproductive toxicity** : No known significant effects or critical hazards.

**Other information** :  
Not available.

## Section 12. Ecological information

This product contains one or more components that have a branched alkylphenol impurity which is very toxic to aquatic life (disclosed in section 3). Components containing the impurity have been tested and are not toxic to aquatic life. Therefore, the data in Section 3 for the alkylphenol impurity should not be used to classify the product for aquatic toxicity

### Toxicity

| Product/substance                                      | Result                                                                                                                                                                                                                                                                                                                                                                                          |
|--------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Distillates (petroleum), hydrotreated light paraffinic | <b>Acute - EC50</b><br>OECD [201]<br>Algae - <i>Pseudokirchnerella subcapitata</i><br>>100 mg/l [48 hours]<br><b>Acute - EC50</b><br>OECD [202]<br>Daphnia - <i>Daphnia magna</i><br>>10000 mg/l [48 hours]<br><b>Chronic - NOEL</b><br>Fish - <i>Oncorhynchus mykiss</i><br>>1000 mg/l [21 days]<br><b>Chronic - NOEL</b><br>OECD [211]<br>Daphnia - <i>Daphnia magna</i><br>10 mg/l [21 days] |
| Distillates (petroleum), solvent-dewaxed               | <b>Acute - LL50</b>                                                                                                                                                                                                                                                                                                                                                                             |

heavy paraffinic

OECD 203  
Fish - *Oncorhynchus mykiss*  
>1000 mg/l [96 hours]  
**Acute - EL50**  
OECD [202]  
Crustaceans - *Daphnia magna*  
>10000 mg/l [48 hours]  
Effect: Mobility  
**Chronic - NOEL**  
OECD [211]  
Crustaceans - *Daphnia magna*  
>1000 mg/l [21 days]  
Effect: Reproduction

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

## Persistence and degradability

| Product/substance                                         | Result                                   |
|-----------------------------------------------------------|------------------------------------------|
| Distillates (petroleum), solvent-dewaxed heavy paraffinic | OECD 301F<br>31% [28 days] - Not readily |

| Product/substance                                         | Aquatic half-life | Photolysis | Biodegradability |
|-----------------------------------------------------------|-------------------|------------|------------------|
| Distillates (petroleum), solvent-dewaxed heavy paraffinic | -                 | -          | Not readily      |

## Bioaccumulative potential

| Product/substance                                         | LogK <sub>ow</sub> | BCF | Potential |
|-----------------------------------------------------------|--------------------|-----|-----------|
| Distillates (petroleum), solvent-dewaxed heavy paraffinic | 9.2                | 260 | 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 generally shows low soil mobility. The product is insoluble and floats on water. Loss by evaporation is limited.

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. 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

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

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

## Section 15. Regulatory information

### Singapore - hazardous chemicals under government control

None.

### National regulations

This Safety Data Sheet (SDS) has been prepared according to Singapore Standard SS 586 on "Specification for Hazard Communication for Hazardous Chemicals and Dangerous Goods"

Workplace Safety and Health (General Provision) Regulations

### 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)**

: ☒ All components are listed or exempted.

**Canada inventory (DSL/NDL)**

: All components are listed or exempted.

**China inventory (IECSC)**

: ☒ All components are listed, exempted, or notified.



|                                             |                                                                                                                                                    |
|---------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| Europe inventory (EC)                       | : All components are listed or exempted.                                                                                                           |
| Japan inventory                             | : <b>Japan inventory (CSCL)</b> : All components are listed or exempted.<br><b>Japan inventory (ISHL)</b> : All components are listed or exempted. |
| New Zealand Inventory of Chemicals (NZIoC)  | : All components are listed or exempted.                                                                                                           |
| Philippines inventory (PICCS)               | : All components are listed or exempted.                                                                                                           |
| Korea inventory (KECI)                      | : All components are listed or exempted.                                                                                                           |
| Taiwan Chemical Substances Inventory (TCSI) | : All components are listed or exempted.                                                                                                           |
| 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

### History

|                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Date of revision       | : 2025/12/10                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Previous revision date | : 2022/03/08                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| Version                | : 1.02                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| Key to abbreviations   | : ACGIH = American Conference of Governmental Industrial Hygienists<br>ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway<br>ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road<br>ATE = Acute Toxicity Estimate<br>BCF = Bioconcentration Factor<br>EC50 = Half maximal effective concentration<br>EL50 = median Effective Loading<br>IATA = International Air Transport Association<br>IC50 = Half maximal inhibitory concentration<br>IDHL = Immediately dangerous to life or health<br>IMDG = International Maritime Dangerous Goods<br>LC50 = Median lethal concentration<br>LD50 = Median lethal dose<br>LL50 = median Lethal Loading<br>LogKow = logarithm of the octanol/water partition coefficient<br>N/A = Not available<br>NIOSH = National Institute of Occupational Safety and Health<br>NOAEL = No Observed Adverse Effect Level<br>NOEC = No Observed Effect Concentration<br>NOEL = No Observed Effect Level<br>NOELR = No observed Effect Loading Rate<br>OECD = Organisation for Economic Co-operation and Development<br>OEL = Occupational Exposure Limit<br>OSHA = Occupational Safety and Health Administration.<br>POP = Persistent Organic Pollutants<br>QSAR = Quantitative Structure–Activity Relationship<br>REL = Recommended Exposure Limit<br>RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail |

STEL = Short Term Exposure Limit  
TLV = Threshold Limit Value  
TWA = Time Weight Average  
VOC = Volatile Organic Compound  
UVCB Substance of unknown or Variable composition, Complex reaction products  
or Biological material

## Procedure used to derive the classification

| Classification  | Justification |
|-----------------|---------------|
| Not classified. |               |

**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.