# SAFETY DATA SHEET

NEO PENTANOIC ACID

## Section 1. Identification

**A. Product name** : NEO PENTANOIC ACID

**Product description** : carboxylic acid

**Registration number** : Not available.

**B. Relevant identified uses of the substance or mixture and uses advised against**

**Identified uses** : Chemical Intermediate

**Uses advised against** : This product is not recommended for any industrial, professional or consumer use other than the Identified Uses above.

**C. Supplier's details** : ExxonMobil Chemical Asia Pacific (Regn. No. 52893724C)
(A Division Of ExxonMobil Asia Pacific Pte Ltd - Regn. No. 196800312N)
1 HarbourFront Place
#06-00 HarbourFront Tower One 098633 Singapore

**24 Hour Emergency Telephone** : 080-880-0454/ +1 703-741-5970 (CHEMTREC)

**Supplier General Contact** : +65 6885 8000

**SDS Internet Address** : www.sds.exxonmobil.com

**Nota** : The above Manufacturer/Supplier is not the importer of this product.

## Section 2. Hazards identification

**A. Hazard classification** : ACUTE TOXICITY (oral) - Category 4
SKIN IRRITATION - Category 2
EYE IRRITATION - Category 2A

This product is classified in accordance with the Industrial Safety and Health Act and the Chemical Control Act.

**B. GHS label elements, including precautionary statements**

**Symbol** :

**Signal word** : Warning

**Hazard statements** : H302 - Harmful if swallowed.
H315 - Causes skin irritation.
H319 - Causes serious eye irritation.

**Precautionary statements**

**Prevention** : P264 - Wash thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P280 - Wear protective gloves. Wear eye or face protection.

**Response** : P301 + P330, P312 - IF SWALLOWED: Rinse mouth. Call a POISON CENTER or doctor if you feel unwell.
P302 + P352 - IF ON SKIN: Wash with plenty of water.
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P321 - Specific treatment (see the label).
P332 + P313 - If skin irritation occurs: Get medical advice/attention.
P337 + P313 - If eye irritation persists: Get medical advice/attention.
P362 + P364 - Take off contaminated clothing and wash it before reuse.

# Section 2. Hazards identification

**Disposal** : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

**C. Other hazards which do not result in classification** : May form explosible dust-air mixture if dispersed.

**Nota** : This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

# Section 3. Composition/information on ingredients

**Substance/mixture** : Substance

**Chemical name** : pivalic acid

| Ingredient name | Common name | Identifiers | % |
|---|---|---|---|
| pivalic acid | - | CAS: 75-98-9 | 100 |

**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.**

**Nota :**

Material is a solid at room temperature, but can be transported and stored at elevated temperature in molten form. Where appropriate, certain physical/chemical properties and health, safety, environmental and transportation information in this Safety Data Sheet have been provided for the material when it is in the molten state.

# Section 4. First-aid measures

**Description of necessary first aid measures**

**A. 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.

**B. Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. If burned by contact with hot material, molten material adhering to skin should be cooled as quickly as possible with water, and see a physician for removal of adhering material and treatment of burn. Wash clothing before reuse. Clean shoes thoroughly before reuse. Continue to rinse for at least 10 minutes. Get medical attention.

**C. 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.

**D. 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 necessary, call a poison center or physician. 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

## Indication of immediate medical attention and special treatment needed, if necessary

**E. 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.

## 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.

**Ingestion** : Harmful if swallowed.

### 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.

**See toxicological information (Section 11)**

# Section 5. Firefighting measures

**A. Extinguishing media**

**Suitable extinguishing media** : Use dry chemical, $CO_2$, alcohol-resistant foam or water spray (fog).

**Unsuitable extinguishing media** : Do not use water jet.

**B. Specific hazards arising from the chemical** : Explosion: Avoid generating dust; fine dust dispersed in air in sufficient concentration and in the presence of an ignition source is a potential dust explosion hazard.

**Hazardous combustion products** : Incomplete combustion products, Oxides of carbon, Smoke, Fume

**C. Special protective actions for fire-fighters** : Use standard firefighting procedures and consider the hazards of other involved materials. Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. Assure an extended cooling down period to prevent re-ignition. Prevent run-off from fire control or dilution from entering streams, sewers or drinking water supply. 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

## NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

### A. 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 spilt material. Put on appropriate personal protective equipment. Dust Deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air (for example, clearing dust surfaces with compressed air). Prevent dust exposure to ignition sources. For example, use non-sparking tools and prohibit smoking, flares, sparks or flames in immediate area. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate.

**For emergency responders** : If specialised clothing is required to deal with the spillage, take note of any information in Section 8 on suitable and unsuitable materials. See also the information in "For non-emergency personnel".

### B. Environmental precautions

: Avoid dispersal of spilt 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).

### C. Methods and material for containment and cleaning up

**Small spill** : Move containers from spill area. Avoid dust generation. Using a vacuum with HEPA filter will reduce dust dispersal. Place spilled material in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.

**Large spill** : Move containers from spill area. Use spark-proof tools and explosion-proof equipment. Approach the 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. Confine the spill immediately with booms. Skim from surface Warn other shipping. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

# Section 7. Handling and storage

### A. Precautions for safe handling

**Protective measures** : Thermal burn hazard - contact with hot material may cause thermal burns. Put on appropriate personal protective equipment (see Section 8). Do not ingest. Avoid contact with eyes, skin and clothing. Avoid the creation of dust when handling and avoid all possible sources of ignition (spark or flame). Prevent dust accumulation. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Electrical equipment and lighting should be protected to appropriate standards to prevent dust coming into contact with hot surfaces, sparks or other ignition sources. Take precautionary measures against electrostatic discharges. To avoid fire or explosion, dissipate static electricity during transfer by earthing and bonding containers and equipment before transferring material. 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.

**Static Accumulator** : This material is not a static accumulator.

# Section 7. Handling and storage

**Loading/Unloading Temperature** : 38 - 49 °C

**Transport Temperature** : 38 - 49 °C

**B. 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 unlabelled containers. Use appropriate containment to avoid environmental contamination. See Section 10 for incompatible materials before handling or use.

**Storage Temperature** : 38 - 49 °C

**Storage Pressure** : Ambient

**Suitable Materials and Coatings** : polyethylene, Stainless Steel, Type 316, Epoxy Phenolics, aluminium

**Unsuitable Containers/ Packing** : Mild Steel

**Unsuitable Materials and Coatings** : Polyamide Epoxy, Inorganic Zinc, Amine Epoxy, Stainless Steel, Type 304, copper

# Section 8. Exposure controls/personal protection

## A. Control parameters

### Occupational exposure limits

| Ingredient name | Exposure limits |
|---|---|
| pivalic acid | **ExxonMobil (COMPANY)**<br>TWA 8 hours: 5 mg/m³. Form: Stable Aerosol..<br>TWA 8 hours: 25 mg/m³. Form: Vapour.. |

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

**B. Appropriate engineering controls** : It is recommended that all dust control equipment such as local exhaust ventilation and material transport systems involved in handling of this product are designed and maintained to minimize dust generation and accumulation. Ensure that dust-handling systems (such as exhaust ducts, dusts collectors, vessels, and processing equipment) are designed to minimize the potential for dust ignition and prevent explosion propagation. For example, use explosion relief vents, an explosion suppression system or inert equipment internals. Additional examples of proper equipment include using only appropriately classified electrical equipment and powered industrial trucks.

**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.

## C. Personal protective equipment

**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. Recommended: organic vapour (Type A) and particulate filter

**Eye 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. If operating conditions cause high dust concentrations to be produced, use dust goggles. Face shield.

## Section 8. Exposure controls/personal 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. If product is hot, thermally protective, chemical resistant gloves are recommended. If contact with forearms is likely, wear gauntlet style gloves. 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. > 8 hours (breakthrough time): Nitrile, minimum 0.38 mm thickness or comparable protective barrier material

**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. If product is hot, thermally protective, chemical resistant apron and long sleeves are recommended.

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.

**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.

## Section 9. Physical and chemical properties and safety characteristics

**Note: Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.**

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

**A. Appearance**

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

**Colour** : White

**B. Odour** : Strong

**C. Odour threshold** : Not available.

**D. pH** : Not available.

**E. Melting/freezing point** : Not available.

**F. Boiling point or initial boiling point and boiling range** : 160 to 162°C (320 to 323.6°F) [ASTM D1078]

**G. Flash point** : Closed cup: >60°C (>140°F) [ASTM D-93]

**H. Evaporation rate** : <0.01 (butyl acetate = 1) [In-house method ,]

**I. Flammability** : Ignitable

**J. Lower and upper explosion limit/ flammability limit** : Lower: 3.4% [In-house method ,]
Upper: 9.5%

**K. Vapour pressure** : 5.48 mm Hg [50 °C] [In-house method ,]
67.51 mm Hg [100 °C] [In-house method ,]

**L. Solubility in water** : Appreciable

**M. Relative vapour density** : >1 [Air = 1] [In-house method ,]

**N. Relative density** : 0.907 [Calculated]

**Bulk density** : Not available.

**Density** : 0.905 g/cm³ [40°C (104°F)] [ASTM D4052]

**O. Partition coefficient: n-octanol/water** : 1.8 [In-house method ,]

# Section 9. Physical and chemical properties and safety characteristics

**P. Auto-ignition temperature** : >400°C (>752°F) [In-house method ,]

**Q. Decomposition temperature** : Not available.

**R. Viscosity** : 1.7 cSt [60 °C] [ASTM D7042]Not applicable.

**S. Molecular weight** : 102.6

**Particle characteristics**

**Median particle size** : Not available.

**Pour point** : 36°C [ASTM D5950]

**Hygroscopic** : No

# Section 10. Stability and reactivity

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

**Chemical stability** : The product is stable.

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

**B. Conditions to avoid** : Alkaline pH. Excessive heat.

**C. Incompatible materials** : Caustics, amines, Alkanolamines, Aldehydes, Monomers, Polymerisable esters, Alkylene Oxides, Ammonia, Inorganic acids,Strong oxidisers

**D. Hazardous decomposition products** : Under normal conditions of storage and use, hazardous decomposition products should not be produced.

# Section 11. Toxicological information

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

**B. Health hazards**

**Acute toxicity**

| Product/ingredient name | Result |
|---|---|
| pivalic acid | **Rat - Oral - LD50**<br>2000 mg/kg<br>**Rabbit - Dermal - LD50**<br>3160 mg/kg<br>**Rat - Inhalation - LC50 Dusts and mists**<br>>5.3 mg/l [4 hours] |

**Conclusion/Summary**

**Inhalation** : Minimally Toxic. Data available. Based on test data for the material. Test(s) equivalent or similar to OECD Guideline 403

**Dermal** : Minimally Toxic. Data available. Based on test data for the material. Test(s) equivalent or similar to OECD Guideline 402

**Oral** : Slightly toxic. Data available. Based on test data for the material. Test(s) equivalent or similar to OECD Guideline 420

**Irritation/Corrosion**

**Conclusion/Summary**

**Skin** : Irritating to the skin. Data available. Based on test data for the material. Test(s) equivalent or similar to OECD Guideline 404

**Eyes** : Irritating and will injure eye tissue. Data available. Based on test data for the material. Test(s) equivalent or similar to OECD Guideline 405

# Section 11. Toxicological information

**Respiratory** : Negligible hazard at ambient/normal handling temperatures. No end point data for material. Elevated temperatures or mechanical action may form vapours, mist, or fumes which may be irritating to the eyes, nose, throat, or lungs.

## Respiratory or skin sensitization

**Conclusion/Summary**

**Skin** : Not expected to be a skin sensitizer. Data available. Based on test data for the material. Test(s) equivalent or similar to OECD Guideline 406

**Respiratory** : Not expected to be a respiratory sensitizer. No end point data for material.

## Mutagenicity

**Conclusion/Summary** : Not expected to be a germ cell mutagen. Data available. Based on test data for the material. Test(s) equivalent or similar to OECD Guideline 471 473 476

## Carcinogenicity

**Conclusion/Summary** : Not expected to cause cancer. No end point data for material.

## Reproductive toxicity

**Conclusion/Summary** : Not expected to be a reproductive toxicant. No end point data for material.

## Specific target organ toxicity (single exposure)

**Conclusion/Summary** : Not expected to cause organ damage from a single exposure. No end point data for material.

## Specific target organ toxicity (repeated exposure)

| Product/ingredient name | Category | Target organs |
|---|---|---|
| pivalic acid | Not applicable. | - |

**Conclusion/Summary** : Not expected to cause organ damage from prolonged or repeated exposure. Data available. Based on test data for the material. Test(s) equivalent or similar to OECD Guideline 407

## Aspiration hazard

**Conclusion/Summary** : Not expected to be an aspiration hazard. Based on physico-chemical properties of the material. Data available.

# Section 12. Ecological information

The information given is based on data for the material, components of the material, or for similar materials, through the application of bridging principals.

## A. Ecotoxicity

| Product/ingredient name | Result |
|---|---|
| pivalic acid | **Acute - LL0**<br>Fish - *Oncorhynchus mykiss*<br>300 mg/l [96 hours]<br>**Acute - EC50**<br>Algae - *Pseudokirchneriella subcapitata*<br>>979 mg/l [72 hours]<br>**Acute - NOEC**<br>Algae - *Pseudokirchneriella subcapitata*<br>246 mg/l [72 hours]<br>**Acute - EL50**<br>daphnia - *Daphnia magna*<br>202 mg/l [48 hours] |

**Conclusion/Summary**

**Acute toxicity** : Not expected to be harmful to aquatic organisms.

**Chronic toxicity** : Not expected to demonstrate chronic toxicity to aquatic organisms

## B. Persistence and degradability

# Section 12. Ecological information

| Product/ingredient name | Result |
|---|---|
| pivalic acid | Ready Biodegradability<br>24.1% [28 days] |

**Biodegradability** : Material -- Expected to biodegrade slowly.

**Hydrolysis** : Material -- Transformation due to hydrolysis not expected to be significant.

**Photolysis** : Material -- Transformation due to photolysis not expected to be significant.

**Atmospheric Oxidation** : Material -- Transformation due to atmospheric oxidation not expected to be significant.

### C. Bioaccumulative potential

Not determined.

### D. Mobility in soil

**Soil/water partition coefficient** : 2.37 Koc Media:Sediment

**Mobility** : Material -- Expected to partition to water. Some partitioning to sediment and wastewater solids. Minimally volatile.

### E. Other adverse effects

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

# Section 13. Disposal considerations

**A. Disposal methods** : The generation of waste should be avoided or minimised 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.

**B. Disposal precautions** : Avoid dispersal of spilt material and runoff and contact with soil, waterways, drains and sewers. Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.

# Section 14. Transport information

| | ADR | IMDG | IATA |
|---|---|---|---|
| **A. UN number** | Not regulated. | Not regulated. | Not regulated. |
| **B. UN proper shipping name** | - | - | - |
| **C. Transport hazard class(es)** | - | - | - |

## Section 14. Transport information

| | | | |
|---|---|---|---|
| | - | - | - |
| **E. Environmental hazards** | No. | No. | No. |

Flash point >60 °C C.C.

**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**

**Proper shipping name** : TRIMETHYLACETIC ACID

**Remarks** : **Liquid bulk cargoes:**
Ship type: 2
Pollution category: Y

## Section 15. Regulatory information

**A. Regulation according to ISHA**

**ISHA article 117 (Harmful substances prohibited from manufacture)** : None of the components are listed.

**ISHA article 118 (Harmful substances requiring permission)** : None of the components are listed.

**Article 2 of Youth Protection Act on Substances Hazardous to Youth** : Not applicable.

**Exposure Limits of Chemical Substances and Physical Factors**

The following components have an OEL:
pivalic acid

**ISHA Enforcement Regs Annex 19 (Exposure standards established for harmful factors)** : None of the components are listed.

**ISHA Enforcement Regs Annex 21 (Harmful factors subject to Work Environment Measurement)** : None of the components are listed.

**ISHA Enforcement Regs Annex 22 (Harmful Factors Subject to Special Health Check-up)** : None of the components are listed.

**Standard of Industrial Safety and Health Annex 12 (Hazardous substances subject to control)** : None of the components are listed.

**B. Regulation according to Chemicals Control Act**

**Article 11 (TRI)** : None of the components are listed.

**Article 18 Prohibited (K-Reach Article 27)** : None of the components are listed.

# Section 15. Regulatory information

**Article 19 Subject to authorization (K-Reach Article 25)** : None of the components are listed.

**Article 20 Toxic Chemicals (K-Reach Article 20)** : Not applicable

**Article 20 Restricted (K-Reach Article 27)** : None of the components are listed.

**Article 39 (Accident Precaution Chemicals)**

Not listed.

**Existing Chemical Substances Subject to Registration** : None of the components are listed.

**C. Dangerous Materials Safety Management Act** : Not applicable.

**D. Wastes regulation** : Dispose of contents and container in accordance with all local, regional, national and international regulations.

**E. Regulation according to other foreign laws**

**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 (AIIC)** : All components are listed or exempted.

**Canada inventory (DSL-NDSL)** : All components are listed or exempted.

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

**Japan inventory (CSCL)** : All components are listed or exempted.

**Japan inventory (Industrial Safety and Health Act)** : 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.

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

# Section 16. Other information

**A. References** : - Registry of Toxic Effects of Chemical Substances
- United States Environmental Protection Agency ECOTOX

**B. Date of issue/Date of revision** : 6/18/2025

**Date of previous issue** : 11 June 2025

**C. Version** : 2.07

**D. Other**

**Indicates information that has changed from previously issued version.**

**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

**Product code** : 1166310

**Notice to reader**

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