

SAFETY DATA SHEET

FRS-40 SEMI-GLOSS BASE COPPER METAL 6600/8602

Section 1. Identification

GHS product identifier : FRS-40 SEMI-GLOSS BASE COPPER METAL 6600/8602
SDS code : 40928602B

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

| Identified uses |
|--|
| Paint. Professional use Industrial use |
| Uses advised against |
| All other uses |

Product use : Solvent borne coating for interior use.


Supplier's details

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Section 2. Hazards identification

Classification of the substance or mixture :  FLAMMABLE LIQUIDS - Category 3
 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A
 CARCINOGENICITY - Category 2
 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3

GHS label elements, including precautionary statements

Hazard pictograms :   

Signal word : Warning

Hazard statements :  H226 - Flammable liquid and vapor.
 H319 - Causes serious eye irritation.
 H336 - May cause drowsiness or dizziness.
 H351 - Suspected of causing cancer.

Precautionary statements

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Section 2. Hazards identification

- Prevention** : P201 - Obtain special instructions before use.
P280 - Wear protective gloves, protective clothing and eye or face protection.
P210 - Keep away from heat, sparks and hot surfaces. No smoking.
P241 - Use explosion-proof electrical, ventilating or lighting equipment.
P242 - Use non-sparking tools.
P243 - Take action to prevent static discharges.
P261 - Avoid breathing vapor.
- Response** : P308 + P313 - IF exposed or concerned: Get medical advice or attention.
P304 + P312 - IF INHALED: Call a POISON CENTER or doctor if you feel unwell.
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 - If eye irritation persists: Get medical advice or attention.
- Storage** : P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.
P403 + P235 - Keep cool.
- Disposal** : P501 - Dispose of contents and container in accordance with all local, regional, national and international regulations.

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

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

| Ingredient name | % | CAS number |
|---|-----------|-------------|
| n-butyl acetate | ≥25 - ≤50 | 123-86-4 |
| 2-methoxy-1-methylethyl acetate | ≥10 - ≤25 | 108-65-6 |
| xylene | <10 | 1330-20-7 |
| 2-ethoxy-1-methylethyl acetate | ≤5 | 54839-24-6 |
| isopropyl acetate | ≤5 | 108-21-4 |
| 4-methylpentan-2-one | ≤3 | 108-10-1 |
| ethylbenzene | ≤3 | 100-41-4 |
| 4-morpholinecarbaldehyde | ≤0.3 | 4394-85-8 |
| methyl methacrylate | ≤0.3 | 80-62-6 |
| Hydroxyphenyl-benzotriazole derivatives | ≤0.3 | 104810-48-2 |

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.

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 it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. 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 necessary, call a poison center or physician. 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. In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.

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2/14

Section 4. First aid measures

- Skin contact** : Flush contaminated skin with plenty of water. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Wash out mouth with water. Remove dentures if any. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Stop if the exposed person feels sick as vomiting may be dangerous. Do not induce vomiting unless directed to do so by medical personnel. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Get medical attention. 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.

Most important symptoms/effects, acute and delayed

Potential acute health effects

- Eye contact** : Causes serious eye irritation.
- Inhalation** : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.
- Skin contact** : No known significant effects or critical hazards.
- Ingestion** : Can cause central nervous system (CNS) depression.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain or irritation
watering
redness
- Inhalation** : Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness
- Skin contact** : No specific data.
- Ingestion** : No specific data.

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

- Notes to physician** : In case of inhalation of decomposition products in a fire, symptoms may be delayed. The exposed person may need to be kept under medical surveillance for 48 hours.
- Specific treatments** : No specific treatment.
- Protection of first-aiders** : No action shall be taken involving any personal risk or without suitable training. If it is suspected that fumes are still present, the rescuer should wear an appropriate mask or self-contained breathing apparatus. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

- Suitable extinguishing media** : Use dry chemical, CO₂, water spray (fog) or foam.
- Unsuitable extinguishing media** : Do not use water jet.

Section 5. Fire-fighting measures

- Specific hazards arising from the chemical** : Flammable liquid and vapor. Runoff to sewer may create fire or explosion hazard. In a fire or if heated, a pressure increase will occur and the container may burst, with the risk of a subsequent explosion.
- Hazardous thermal decomposition products** : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
halogenated compounds
metal oxide/oxides
- Special protective actions for fire-fighters** : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training. Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
- 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. Shut off all ignition sources. No flares, smoking or flames in hazard area. 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. Use spark-proof tools and explosion-proof equipment. 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. Use spark-proof tools and explosion-proof equipment. 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). Avoid exposure - obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not ingest. Avoid breathing vapor or mist. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Do not enter storage areas and confined spaces unless adequately ventilated. Keep in the original container or an approved alternative made from a compatible material, kept tightly closed when not in use. Store and use away from heat, sparks, open flame or any other ignition source. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Use only non-sparking tools. Take precautionary measures against electrostatic discharges. Empty containers retain product residue and can be hazardous. Do not reuse container.
- Advice on general occupational hygiene** : Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
- Conditions for safe storage, including any incompatibilities** : Store in accordance with local regulations. Store in a segregated and approved area. Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10) and food and drink. Store locked up. Eliminate all ignition sources. Separate from oxidizing materials. 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 |
|----------------------|---|
| n-butyl acetate | Workplace Safety and Health Act (Singapore, 2/2006). PEL (short term): 950 mg/m ³ 15 minutes. PEL (short term): 200 ppm 15 minutes. PEL (long term): 713 mg/m ³ 8 hours. PEL (long term): 150 ppm 8 hours. |
| xylene | Workplace Safety and Health Act (Singapore, 2/2006). PEL (short term): 651 mg/m ³ 15 minutes. PEL (short term): 150 ppm 15 minutes. PEL (long term): 434 mg/m ³ 8 hours. PEL (long term): 100 ppm 8 hours. |
| isopropyl acetate | Workplace Safety and Health Act (Singapore, 2/2006). PEL (short term): 1290 mg/m ³ 15 minutes. PEL (short term): 310 ppm 15 minutes. PEL (long term): 1040 mg/m ³ 8 hours. PEL (long term): 250 ppm 8 hours. |
| 4-methylpentan-2-one | Workplace Safety and Health Act (Singapore, 2/2006). PEL (short term): 307 mg/m ³ 15 minutes. PEL (short term): 75 ppm 15 minutes. PEL (long term): 205 mg/m ³ 8 hours. PEL (long term): 50 ppm 8 hours. |

Section 8. Exposure controls/personal protection

ethylbenzene

Workplace Safety and Health Act (Singapore, 2/2006).

PEL (short term): 543 mg/m³ 15 minutes.

PEL (short term): 125 ppm 15 minutes.

PEL (long term): 434 mg/m³ 8 hours.

PEL (long term): 100 ppm 8 hours.

methyl methacrylate

Workplace Safety and Health Act (Singapore, 2/2006).

PEL (long term): 410 mg/m³ 8 hours.

PEL (long term): 100 ppm 8 hours.

Appropriate engineering controls

: Use only with adequate ventilation. Use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits. The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits. Use explosion-proof ventilation equipment.

Environmental exposure controls

: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

Individual protection measures

Hygiene measures

: Wash hands, forearms and face thoroughly after handling chemical products, before eating, smoking and using the lavatory and at the end of the working period. Appropriate techniques should be used to remove potentially contaminated clothing. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.

Eye/face protection

: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary to avoid exposure to liquid splashes, mists, gases or dusts. If contact is possible, the following protection should be worn, unless the assessment indicates a higher degree of protection: chemical splash goggles.

Skin protection

Hand protection

: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. Considering the parameters specified by the glove manufacturer, check during use that the gloves are still retaining their protective properties. It should be noted that the time to breakthrough for any glove material may be different for different glove manufacturers. In the case of mixtures, consisting of several substances, the protection time of the gloves cannot be accurately estimated.

Body protection

: Personal protective equipment for the body should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product. When there is a risk of ignition from static electricity, wear anti-static protective clothing. For the greatest protection from static discharges, clothing should include anti-static overalls, boots and gloves.

Other skin protection

: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved and should be approved by a specialist before handling this product.

Respiratory protection

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

Section 9. Physical and chemical properties

Appearance

| | |
|---|---|
| Physical state | : Liquid. |
| Color | : Orange. |
| Odor | : Characteristic. |
| Odor threshold | : Not available. |
| pH | : Not available. |
| Melting point/freezing point | : Not available. |
| Initial boiling point and boiling range | : Not available. |
| Flash point | : Closed cup: 28°C |
| Evaporation rate | : Not available. |
| Flammability (solid, gas) | : Not available. |
| Upper/lower flammability or explosive limits | : Greatest known range: Lower: 1% Upper: 9.8% (2-ethoxy-1-methylethyl acetate) |
| Vapor pressure | : Not available. |
| Vapor density | : Highest known value: 4.6 (Air = 1) (2-methoxy-1-methylethyl acetate). Weighted average: 3.85 (Air = 1) |
| Relative density | : Not available. |
| Solubility(ies) | : Insoluble in the following materials: cold water. |
| Partition coefficient: n-octanol/ water | : Not available. |
| Auto-ignition temperature | : Not available. |
| Decomposition temperature | : Not available. |
| Viscosity | : Kinematic (room temperature): 9.65 cm ² /s Kinematic (40°C): 1.01 cm ² /s |

Section 10. Stability and reactivity

| | |
|---|---|
| Reactivity | : No specific test data related to reactivity available for this product or its ingredients. |
| Chemical stability | : The product is stable. |
| Possibility of hazardous reactions | : Under normal conditions of storage and use, hazardous reactions will not occur. |
| Conditions to avoid | : Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. |
| Incompatible materials | : Reactive or incompatible with the following materials: oxidizing materials |
| 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/ingredient name | Result | Species | Dose | Exposure |
|--|-----------------------|------------|-------------------------|----------|
| n-butyl acetate | LC50 Inhalation Gas. | Rat | 390 ppm | 4 hours |
| | LC50 Inhalation Vapor | Mouse | 6 g/m ³ | 2 hours |
| | LD50 Dermal | Rabbit | >17600 mg/kg | - |
| | LD50 Intraperitoneal | Mouse | 1230 mg/kg | - |
| | LD50 Oral | Guinea pig | 4700 mg/kg | - |
| | LD50 Oral | Mouse | 6 g/kg | - |
| | LD50 Oral | Rabbit | 3200 mg/kg | - |
| | LD50 Oral | Rat | 10768 mg/kg | - |
| xylene | LC50 Inhalation Gas. | Rat | 6700 ppm | 4 hours |
| | LC50 Inhalation Gas. | Rat | 5000 ppm | 4 hours |
| | LC50 Inhalation Gas. | Rat | 6670 ppm | 4 hours |
| | LD50 Intraperitoneal | Mouse | 1548 mg/kg | - |
| | LD50 Intraperitoneal | Mouse | 1548 mg/kg | - |
| | LD50 Intraperitoneal | Rat | 2459 mg/kg | - |
| | LD50 Oral | Mouse | 2119 mg/kg | - |
| | LD50 Oral | Rat | 4300 mg/kg | - |
| | LD50 Oral | Rat | 4300 mg/kg | - |
| | LD50 Subcutaneous | Rat | 1700 mg/kg | - |
| isopropyl acetate | LC50 Inhalation Vapor | Rat | 50600 mg/m ³ | 8 hours |
| | LD50 Oral | Rabbit | 6946 mg/kg | - |
| 4-methylpentan-2-one | LD50 Oral | Rat | 6750 mg/kg | - |
| | LD50 Intraperitoneal | Guinea pig | 800 mg/kg | - |
| | LD50 Intraperitoneal | Mouse | 268 mg/kg | - |
| | LD50 Intraperitoneal | Rat | 400 mg/kg | - |
| | LD50 Oral | Guinea pig | 1600 mg/kg | - |
| | LD50 Oral | Mouse | 1900 mg/kg | - |
| | LD50 Oral | Mouse | 2850 mg/kg | - |
| | LD50 Oral | Rat | 2080 mg/kg | - |
| ethylbenzene | LD50 Oral | Rat | 4600 mg/kg | - |
| | LC50 Inhalation Gas. | Rabbit | 4000 ppm | 4 hours |
| | LC50 Inhalation Vapor | Mouse | 35500 mg/m ³ | 2 hours |
| | LC50 Inhalation Vapor | Rat | 55000 mg/m ³ | 2 hours |
| | LD50 Dermal | Rabbit | >5000 mg/kg | - |
| | LD50 Dermal | Rabbit | 17800 uL/kg | - |
| | LD50 Intraperitoneal | Mouse | 2624 uL/kg | - |
| | LD50 Oral | Rat | 3500 mg/kg | - |
| | LD50 Oral | Rat | 3500 mg/kg | - |
| | LD50 Oral | Rat | 6500 uL/kg | - |
| 4-morpholinecarbaldehyde methyl methacrylate | LD50 Oral | Rat | 6500 uL/kg | - |
| | LC50 Inhalation Vapor | Mouse | 18500 mg/m ³ | 2 hours |
| | LC50 Inhalation Vapor | Rat | 78000 mg/m ³ | 4 hours |
| | LD50 Dermal | Rabbit | >5 g/kg | - |
| | LD50 Intraperitoneal | Guinea pig | 1890 mg/kg | - |
| | LD50 Intraperitoneal | Mouse | 945 mg/kg | - |
| | LD50 Intraperitoneal | Rat | 1328 mg/kg | - |
| | LD50 Oral | Guinea pig | 5954 mg/kg | - |
| | LD50 Oral | Mouse | 3625 mg/kg | - |
| | LD50 Oral | Rabbit | 8700 mg/kg | - |
| | LD50 Oral | Rat | 7872 mg/kg | - |
| | LD50 Subcutaneous | Guinea pig | 5954 mg/kg | - |
| | LD50 Subcutaneous | Mouse | 5954 mg/kg | - |
| | LD50 Subcutaneous | Rat | 7088 mg/kg | - |

Irritation/Corrosion

Section 11. Toxicological information

| Product/ingredient name | Result | Species | Score | Exposure | Observation |
|--------------------------|--------------------------|---------|-------|-----------------|-------------|
| n-butyl acetate | Eyes - Moderate irritant | Rabbit | - | 100 mg | - |
| | Skin - Moderate irritant | Rabbit | - | 24 hours 500 mg | - |
| xylene | Eyes - Mild irritant | Rabbit | - | 87 mg | - |
| | Eyes - Severe irritant | Rabbit | - | 24 hours 5 mg | - |
| | Skin - Mild irritant | Rat | - | 8 hours 60 UI | - |
| | Skin - Moderate irritant | Rabbit | - | 24 hours 500 mg | - |
| isopropyl acetate | Skin - Moderate irritant | Rabbit | - | 100 % | - |
| | Skin - Mild irritant | Rabbit | - | 24 hours 500 mg | - |
| 4-methylpentan-2-one | Eyes - Moderate irritant | Rabbit | - | 24 hours 100 UI | - |
| | Eyes - Severe irritant | Rabbit | - | 40 mg | - |
| ethylbenzene | Skin - Mild irritant | Rabbit | - | 24 hours 500 mg | - |
| | Eyes - Severe irritant | Rabbit | - | 500 mg | - |
| 4-morpholinecarbaldehyde | Skin - Mild irritant | Rabbit | - | 24 hours 15 mg | - |
| | Eyes - Mild irritant | Rabbit | - | 24 hours 500 mg | - |
| | Skin - Mild irritant | Rabbit | - | 24 hours 500 mg | - |

Sensitization

Not available.

Mutagenicity

Not available.

Carcinogenicity

Not available.

Reproductive toxicity

Not available.

Teratogenicity

Not available.

Specific target organ toxicity (single exposure)

| Name | Category | Route of exposure | Target organs |
|---------------------------------|------------|-------------------|------------------------------|
| n-butyl acetate | Category 3 | - | Narcotic effects |
| 2-methoxy-1-methylethyl acetate | Category 3 | - | Narcotic effects |
| xylene | Category 3 | - | Respiratory tract irritation |
| 2-ethoxy-1-methylethyl acetate | Category 3 | - | Narcotic effects |
| isopropyl acetate | Category 3 | - | Narcotic effects |
| 4-methylpentan-2-one | Category 3 | - | Narcotic effects |
| methyl methacrylate | Category 3 | - | Respiratory tract irritation |

Specific target organ toxicity (repeated exposure)

| Name | Category | Route of exposure | Target organs |
|--------------|------------|-------------------|----------------|
| ethylbenzene | Category 2 | - | hearing organs |

Aspiration hazard

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9/14

Section 11. Toxicological information

| Name | Result |
|------------------------|--|
| xylene ethylbenzene | ASPIRATION HAZARD - Category 1 ASPIRATION HAZARD - Category 1 |

Information on the likely routes of exposure : Not available.

Potential acute health effects

Eye contact : Causes serious eye irritation.

Inhalation : Can cause central nervous system (CNS) depression. May cause drowsiness or dizziness.

Skin contact : No known significant effects or critical hazards.

Ingestion : Can cause central nervous system (CNS) depression.

Symptoms related to the physical, chemical and toxicological characteristics

Eye contact : Adverse symptoms may include the following:
pain or irritation
watering
redness

Inhalation : Adverse symptoms may include the following:
nausea or vomiting
headache
drowsiness/fatigue
dizziness/vertigo
unconsciousness

Skin contact : No specific data.

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 : No known significant effects or critical hazards.

Carcinogenicity : Suspected of causing cancer. Risk of cancer depends on duration and level of exposure.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

Section 12. Ecological information

Toxicity

| Product/ingredient name | Result | Species | Exposure |
|----------------------------------|-------------------------------------|--|----------|
| n-butyl acetate | Acute LC50 32 mg/l Marine water | Crustaceans - Artemia salina | 48 hours |
| | Acute LC50 100000 µg/l Fresh water | Fish - Lepomis macrochirus | 96 hours |
| xylene | Acute LC50 18000 µg/l Fresh water | Fish - Pimephales promelas | 96 hours |
| | Acute LC50 185000 µg/l Marine water | Fish - Menidia beryllina | 96 hours |
| | Acute LC50 62000 µg/l Fresh water | Fish - Danio rerio | 96 hours |
| | Acute EC50 90 mg/l Fresh water | Crustaceans - Cypris subglobosa | 48 hours |
| | Acute LC50 8.5 ppm Marine water | Crustaceans - Palaemonetes pugio - Adult | 48 hours |
| | Acute LC50 8500 µg/l Marine water | Crustaceans - Palaemonetes pugio | 48 hours |
| | Acute LC50 15700 µg/l Fresh water | Fish - Lepomis macrochirus - Juvenile (Fledgling, Hatchling, Weanling) | 96 hours |
| | Acute LC50 20870 µg/l Fresh water | Fish - Lepomis macrochirus | 96 hours |
| | Acute LC50 19000 µg/l Fresh water | Fish - Lepomis macrochirus | 96 hours |
| | Acute LC50 13400 µg/l Fresh water | Fish - Pimephales promelas | 96 hours |
| isopropyl acetate | Acute LC50 16940 µg/l Fresh water | Fish - Carassius auratus | 96 hours |
| | Acute LC50 110 mg/l Marine water | Crustaceans - Artemia salina | 48 hours |
| | Acute LC50 505000 µg/l Fresh water | Fish - Pimephales promelas | 96 hours |
| | Acute LC50 540000 µg/l Fresh water | Fish - Pimephales promelas | 96 hours |
| | Acute LC50 537000 µg/l Fresh water | Fish - Pimephales promelas - Juvenile (Fledgling, Hatchling, Weanling) | 96 hours |
| 4-methylpentan-2-one | Chronic NOEC 78 mg/l Fresh water | Daphnia - Daphnia magna | 21 days |
| | Chronic NOEC 168 mg/l Fresh water | Fish - Pimephales promelas - Embryo | 33 days |
| ethylbenzene | Acute EC50 4900 µg/l Marine water | Algae - Skeletonema costatum | 72 hours |
| | Acute EC50 7700 µg/l Marine water | Algae - Skeletonema costatum | 96 hours |
| | Acute EC50 4600 µg/l Fresh water | Algae - Pseudokirchneriella subcapitata | 72 hours |
| | Acute EC50 5400 µg/l Fresh water | Algae - Pseudokirchneriella subcapitata | 72 hours |
| | Acute EC50 3600 µg/l Fresh water | Algae - Pseudokirchneriella subcapitata | 96 hours |
| | Acute EC50 6.53 mg/l Marine water | Crustaceans - Artemia sp. - Nauplii | 48 hours |
| | Acute EC50 13.3 mg/l Marine water | Crustaceans - Artemia sp. - Nauplii | 48 hours |
| | Acute EC50 2.97 mg/l Fresh water | Daphnia - Daphnia magna - Neonate | 48 hours |
| | Acute EC50 2.93 mg/l Fresh water | Daphnia - Daphnia magna - Neonate | 48 hours |
| | Acute LC50 8.78 mg/l Marine water | Crustaceans - Artemia sp. - Nauplii | 48 hours |
| | Acute LC50 13.3 mg/l Marine water | Crustaceans - Artemia sp. - Nauplii | 48 hours |
| | Acute LC50 40000 µg/l Marine water | Crustaceans - Cancer magister - Zoea | 48 hours |
| | Acute LC50 18.4 mg/l Fresh water | Daphnia - Daphnia magna - Neonate | 48 hours |
| | Acute LC50 13.9 mg/l Fresh water | Daphnia - Daphnia magna - Neonate | 48 hours |
| | Acute LC50 75000 µg/l Fresh water | Daphnia - Daphnia magna | 48 hours |
| | Acute LC50 5100 µg/l Marine water | Fish - Menidia menidia | 96 hours |
| | Acute LC50 9090 µg/l Fresh water | Fish - Pimephales promelas | 96 hours |
| Acute LC50 9100 µg/l Fresh water | Fish - Pimephales promelas | 96 hours | |
| Acute LC50 4200 µg/l Fresh water | Fish - Oncorhynchus mykiss | 96 hours | |

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11/14

Section 12. Ecological information

| | | | |
|---------------------|------------------------------------|--|----------|
| methyl methacrylate | Acute LC50 4.3 ul/L Marine water | Fish - Morone saxatilis - Juvenile (Fledgling, Hatchling, Weanling) | 96 hours |
| | Acute LC50 191000 µg/l Fresh water | Fish - Lepomis macrochirus - Juvenile (Fledgling, Hatchling, Weanling) | 96 hours |
| | Acute LC50 159100 µg/l Fresh water | Fish - Pimephales promelas | 96 hours |
| | Acute LC50 160200 µg/l Fresh water | Fish - Pimephales promelas | 96 hours |
| | Acute LC50 150000 µg/l Fresh water | Fish - Pimephales promelas - Adult | 96 hours |
| | Acute LC50 130000 µg/l Fresh water | Fish - Pimephales promelas - Adult | 96 hours |

Persistence/degradability

Not available.

Bioaccumulative potential

| Product/ingredient name | LogP _{ow} | BCF | Potential |
|---------------------------------|--------------------|-------------|-----------|
| n-butyl acetate | 2.3 | - | low |
| 2-methoxy-1-methylethyl acetate | 1.2 | - | low |
| xylene | 3.12 | 8.1 to 25.9 | low |
| 2-ethoxy-1-methylethyl acetate | 0.76 | - | low |
| isopropyl acetate | 1.3 | - | low |
| 4-methylpentan-2-one | 1.9 | - | low |
| ethylbenzene | 3.6 | - | low |
| 4-morpholinecarbaldehyde | - | <1.9 | low |
| methyl methacrylate | 1.38 | - | low |

Mobility in soil




Soil/water partition coefficient (K_{oc}) : Not available.

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

Section 13. Disposal considerations

Disposal methods : The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Waste should not be disposed of untreated to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe way. Care should be taken when handling emptied containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Vapor from product residues may create a highly flammable or explosive atmosphere inside the container. Do not cut, weld or grind used containers unless they have been cleaned thoroughly internally. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

| | UN | IMDG | IATA |
|----------------------------|--|--|--|
| UN number | UN1263 | UN1263 | UN1263 |
| UN proper shipping name | PAINT | PAINT | PAINT |
| Transport hazard class(es) | 3  | 3  | 3  |
| Packing group | III | III | III |
| Environmental hazards | No. | No. | No. |

Additional information

UN : **Viscous liquid exception** This class 3 viscous liquid is not subject to regulation in packagings up to 450 L according to 2.3.2.5.1.

IMDG : **Emergency schedules** F-E, _S-E_
Viscous liquid exception This class 3 viscous liquid is not subject to regulation in packagings up to 450 L according to 2.3.2.5.

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

Safety, health and environmental regulations specific for the product : SS586: Specification for hazard communication for hazardous chemicals and dangerous goods.

Singapore - hazardous chemicals under government control

None.

Section 16. Other information

History

Date of printing : 6 October 2022

Date of issue/ Date of revision : 6 October 2022

Date of previous issue : 1 October 2022

Version : 2

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

Date of issue/Date of revision : 6-10-2022

Version : 2

Date of previous issue : 1-10-2022

13/14

Section 16. Other information

SGG = Segregation Group
UN = United Nations

Procedure used to derive the classification

| Classification | Justification |
|--|---|
| FLAMMABLE LIQUIDS - Category 3 SERIOUS EYE DAMAGE/ EYE IRRITATION - Category 2A CARCINOGENICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) (Narcotic effects) - Category 3 | On basis of test data Calculation method Calculation method Calculation method |

 Indicates information that has changed from previously issued version.

Notice to reader

FOR PROFESSIONAL USE ONLY

IMPORTANT NOTE The information in this data sheet is not intended to be exhaustive and is based on the present state of our knowledge and on current laws: any person using the product for any purpose other than that specifically recommended in the technical data sheet without first obtaining written confirmation from us as to the suitability of the product for the intended purpose does so at his own risk. It is always the responsibility of the user to take all necessary steps to fulfill the demands set out in the local rules and legislation. Always read the Material Data Sheet and the Technical Data Sheet for this product if available. All advice we give or any statement made about the product by us (whether in this data sheet or otherwise) is correct to the best of our knowledge but we have no control over the quality or the condition of the substrate or the many factors affecting the use and application of the product. Therefore, unless we specifically agree in writing otherwise, we do not accept any liability whatsoever for the performance of the product or for any loss or damage arising out of the use of the product. All products supplied and technical advice given are subject to our standard terms and conditions of sale. You should request a copy of this document and review it carefully. The information contained in this data sheet is subject to modification from time to time in the light of experience and our policy of continuous development. It is the user's responsibility to verify that this data sheet is current prior to using the product.

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