

SAFETY DATA SHEET



SeaForce Shield

Section 1. Chemical product and company identification

| | |
|--------------------------------------|-------------------|
| GHS product identifier | : SeaForce Shield |
| Product code | : 43004 |
| Other means of identification | : Not available. |
| Product type | : Liquid. |
| Product description | : Paint. |

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

Use in coatings - Professional use

| | |
|---------------------------|--|
| Supplier's details | : Jotun Kazakhstan LLP Al-Farabi Ave., 15, Nurdy-Tau business center, building 4V, 9th floor, premise No. 18-4V-9NP, Almaty, Republic of Kazakhstan |
| | Tel: +7 (727) 311 56 37 / +7 (727) 311 56 85 |
| | infokz@jotun.com SDSJotun@jotun.com |

| | |
|---|---|
| Emergency telephone number (with hours of operation) | : 112 – Department for emergency situations 101 – Fire department; 103 – Ambulance |
|---|---|

Section 2. Hazards identification

Classification of the substance or mixture according to GOST 32419-2013 and GOST 32423/24/25-2013

| | |
|---|---|
| Classification of the substance or mixture | : FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (oral) - Category 5 SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1 CHEMICALS THAT CAUSE SENSITIZATION - Chemical which cause skin sensitization REPRODUCTIVE TOXICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3 SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1 |
|---|---|

GHS label elements

Section 2. Hazards identification

Hazard pictograms



Signal word

: Danger.

Hazard statements

: H226 - Flammable liquid and vapour.
 H303 - May be harmful if swallowed.
 H315 - Causes skin irritation.
 H317 - May cause an allergic skin reaction.
 H318 - Causes serious eye damage.
 H335 - May cause respiratory irritation.
 H361 - Suspected of damaging fertility or the unborn child.
 H410 - Very toxic to aquatic life with long lasting effects.

Precautionary statements

General

: Not applicable.

Prevention

: P201 + P202 - Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.
 P280 - Wear protective gloves, protective clothing and eye or face protection.
 P210 - Keep away from flames 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.
 P273 - Avoid release to the environment.
 P261 - Avoid breathing vapour.
 P264 - Wash hands thoroughly after handling.

Response

: P391 - Collect spillage.
 P310 - Immediately call a POISON CENTER or physician.
 P304 + P340 + P312 - IF INHALED: Remove victim to fresh air and keep at rest in a positive comfortable for breathing. Call a POISON CENTER or physician if you feel unwell.
 P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower.
 P363 - Wash contaminated clothing before reuse.
 P302 + P352 - IF ON SKIN: Wash with plenty of water.
 P333 + P311 - If skin irritation or rash occurs: Call a POISON CENTER or physician.
 P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

Storage

: P403 + P235 - Store in a well-ventilated place. 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.

In compliance

: IMO Antifouling System Convention compliant AFS/CONF/26 + IMO MEPC.331(76).

Section 3. Composition/information on ingredients

Substance/mixture

: Mixture

Other means of identification

: Not available.

Section 3. Composition/information on ingredients

| Ingredient name | % | Identifiers | Classification | Type |
|-----------------------------|-----------|-----------------|--|---------|
| dicopper oxide | ≥10 - <25 | CAS: 1317-39-1 | ACUTE TOXICITY (oral) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1 SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1 | [1] |
| xylene | ≥10 - <22 | CAS: 1330-20-7 | FLAMMABLE LIQUIDS - Category 3 ACUTE TOXICITY (dermal) - Category 4 ACUTE TOXICITY (inhalation) - Category 4 SKIN CORROSION/IRRITATION - Category 2 SERIOUS EYE DAMAGE/EYE IRRITATION - Category 2A SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3 ASPIRATION HAZARD - Category 1 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3 | [1] [2] |
| colophony | ≥10 - ≤25 | CAS: 8050-09-7 | CHEMICALS THAT CAUSE SENSITIZATION - Chemical which cause skin sensitization | [1] [2] |
| zineb | ≤10 | CAS: 12122-67-7 | FLAMMABLE SOLIDS - Category 1 CHEMICALS THAT CAUSE SENSITIZATION - Chemical which cause skin sensitization REPRODUCTIVE TOXICITY - Category 2 SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3 SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1 | [1] [2] |
| ethylbenzene | ≤5 | CAS: 100-41-4 | FLAMMABLE LIQUIDS - Category 2 ACUTE TOXICITY (inhalation) - Category 4 SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2 ASPIRATION HAZARD - Category 1 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 3 | [1] [2] |
| zinc oxide | ≤5 | CAS: 1314-13-2 | SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1 | [1] |
| 1-methoxy-2-propanol | ≤3 | CAS: 107-98-2 | FLAMMABLE LIQUIDS - Category 3 SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Narcotic effects) - Category 3 | [1] |
| hydrocarbons, C9, aromatics | ≤3 | CAS: 64742-95-6 | FLAMMABLE LIQUIDS - Category 3 SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Narcotic effects) - Category 3 ASPIRATION HAZARD - Category 1 LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 2 | [1] |

Section 3. Composition/information on ingredients

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.

Type

[1] Substance classified with a health or environmental hazard

[2] Substance with a workplace exposure limit

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

Section 4. First aid measures

Description of necessary first aid measures

- Eye contact** : Get medical attention immediately. Call a poison center or physician. 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. Chemical burns must be treated promptly by a physician.
- Inhalation** : Get medical attention immediately. Call a poison center or physician. 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. 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.
- Skin contact** : Get medical attention immediately. Call a poison center or physician. Wash with plenty of soap and water. Remove contaminated clothing and shoes. Wash contaminated clothing thoroughly with water before removing it, or wear gloves. Continue to rinse for at least 10 minutes. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure. Wash clothing before reuse. Clean shoes thoroughly before reuse.
- Ingestion** : Get medical attention immediately. Call a poison center or physician. 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. Chemical burns must be treated promptly by a 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 damage.
- Inhalation** : May cause respiratory irritation.
- Skin contact** : Causes skin irritation. May cause an allergic skin reaction.
- Ingestion** : May be harmful if swallowed.

Over-exposure signs/symptoms

- Eye contact** : Adverse symptoms may include the following:
pain
watering
redness

Section 4. First aid measures

- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
reduced foetal weight
increase in foetal deaths
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
reduced foetal weight
increase in foetal deaths
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:
stomach pains
reduced foetal weight
increase in foetal deaths
skeletal malformations

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. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Firefighting measures

Extinguishing media

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

Specific hazards arising from the chemical : Flammable liquid and vapour. 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. This material is very toxic to aquatic life with long lasting effects. Fire water contaminated with this material must be contained and prevented from being discharged to any waterway, sewer or drain.

Hazardous thermal decomposition products : Decomposition products may include the following materials:
carbon dioxide
carbon monoxide
nitrogen oxides
sulfur oxides
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 flames, smoking or flames in hazard area. Do not breathe vapour or mist. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
- 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".

- Environmental precautions** : Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Water polluting material. May be harmful to the environment if released in large quantities. Collect spillage.

Methods and material 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 the 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). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure - obtain special instructions before use. Avoid exposure during pregnancy. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe vapour or mist. Do not ingest. Avoid release to the environment. 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.

Section 7. Handling and storage

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

See Technical Data Sheet / packaging for further information.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

| Ingredient name | Exposure limits |
|-----------------|---|
| xylene | <p>Order of the Minister of Health of the Republic of Kazakhstan on approval of hygienic standards for atmospheric air in urban and rural settlements, on the territories of industrial organizations dated August 2, 2022 No.DSM -70 (KZ, 8/2022). [Диметилбензол(смесь 2-,3-, 4-изомеров)] STEL: 50 mg/m³ 15 minutes. Form: vapor and (or) gases</p> |
| colophony | <p>Order of the Minister of Health of the Republic of Kazakhstan on approval of hygienic standards for atmospheric air in urban and rural settlements, on the territories of industrial organizations dated August 2, 2022 No.DSM -70 (KZ, 8/2022). Sensitization potential. STEL: 4 mg/m³ 15 minutes. Form: mixture of gas or vapor and aerosol</p> |
| zineb | <p>Order of the Minister of Health of the Republic of Kazakhstan on approval of hygienic standards for atmospheric air in urban and rural settlements, on the territories of industrial organizations dated August 2, 2022 No.DSM -70 (KZ, 8/2022). Sensitization potential. STEL: 0.5 mg/m³ 15 minutes. Form: aerosol</p> |
| ethylbenzene | <p>Order of the Minister of Health of the Republic of Kazakhstan on approval of hygienic standards for atmospheric air in urban and rural settlements, on the territories of industrial organizations dated August 2, 2022 No.DSM -70 (KZ, 8/2022). TWA: 50 mg/m³ 8 hours. Form: vapor and (or) gases STEL: 150 mg/m³ 15 minutes. Form: vapor and (or) gases</p> |

Biological exposure indices

No exposure indices known.

Section 8. Exposure controls/personal protection

- 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, vapour 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. Contaminated work clothing should not be allowed out of the workplace. Wash contaminated clothing before reusing. Ensure that eyewash stations and safety showers are close to the workstation location.
- Eye/face protection** : Safety eyewear complying to ISO 16321-1:2022 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 and/or face shield. If inhalation hazards exist, a full-face respirator may be required instead.
- Skin protection**
- Hand protection** : There is no one glove material or combination of materials that will give unlimited resistance to any individual or combination of chemicals. The breakthrough time must be greater than the end use time of the product. The instructions and information provided by the glove manufacturer on use, storage, maintenance and replacement must be followed. Gloves should be replaced regularly and if there is any sign of damage to the glove material. Always ensure that gloves are free from defects and that they are stored and used correctly. The performance or effectiveness of the glove may be reduced by physical/chemical damage and poor maintenance. Barrier creams may help to protect the exposed areas of the skin but should not be applied once exposure has occurred. Wear suitable gloves tested to ISO 374-1:2016.
Not recommended, gloves(breakthrough time) < 1 hour: butyl rubber (> 0.4 mm)
May be used, gloves(breakthrough time) 4 - 8 hours: neoprene (> 0.35 mm), PVC (> 0.5 mm)
Recommended, gloves(breakthrough time) > 8 hours: fluor rubber (> 0.35 mm), nitrile rubber (> 0.75 mm), 4H/Silver Shield® (> 0.07 mm), Teflon (> 0.35 mm), polyvinyl alcohol (PVA) (> 0.3 mm)
- For right choice of glove materials, with focus on chemical resistance and time of penetration, seek advice by the supplier of chemical resistant gloves.
- The user must check that the final choice of type of glove selected for handling this product is the most appropriate and takes into account the particular conditions of use, as included in the user's risk assessment.
- 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** :

Section 8. Exposure controls/personal protection

If workers are exposed to concentrations above the exposure limit, they must use a respirator according to EN 140. Use respiratory mask with charcoal and dust filter when spraying this product, according to EN 14387(as filter combination A2-P2). In confined spaces, use compressed-air or fresh-air respiratory equipment. When use of roller or brush, consider use of charcoalfilter.

Section 9. Physical and chemical properties and safety characteristics

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

Appearance

| | |
|--|--|
| Physical state | : Liquid. |
| Colour | : Red |
| Odour | : Characteristic. |
| Odour threshold | : Not applicable. |
| pH | : Not applicable. |
| Melting point/freezing point | : Not applicable. |
| Boiling point, initial boiling point, and boiling range | : Lowest known value: 120.17°C (248.3°F) (1-methoxy-2-propanol). Weighted average: 137.48°C (279.5°F) |
| Flash point | : Closed cup: 27°C (80.6°F) |
| Evaporation rate | : Not available. |
| Flammability | : Not applicable. |
| Lower and upper explosion limit/flammability limit | : 0.8 - 13.74% |
| Vapour pressure | : Highest known value: 1.2 kPa (9.3 mm Hg) (at 20°C) (ethylbenzene). Weighted average: 0.94 kPa (7.05 mm Hg) (at 20°C) |
| Relative vapour density | : Highest known value: 3.7 (Air = 1) (xylene). Weighted average: 3.65 (Air = 1) |
| Density | : 1.584 to 1.589 g/cm ³ |
| Solubility(ies) | : |

| Media | Result |
|------------|-------------|
| cold water | Not soluble |
| hot water | Not soluble |

| | |
|---|--|
| Partition coefficient: n-octanol/water | : Not available. |
| Auto-ignition temperature | : Lowest known value: 270°C (518°F) (1-methoxy-2-propanol). |
| Decomposition temperature | : Not available. |
| Viscosity | : Kinematic (40°C (104°F)): >20.5 mm ² /s (>20.5 cSt) |

Particle characteristics

| | |
|-----------------------------|-------------------|
| Median particle size | : Not applicable. |
|-----------------------------|-------------------|

Section 10. Stability and reactivity

| | |
|---|---|
| Reactivity | : No specific test data related to reactivity available for this product or its ingredients. |
| Chemical stability | : 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 pressurise, cut, weld, braze, solder, drill, grind or expose containers to heat or sources of ignition. |
| Incompatible materials | : Reactive or incompatible with the following materials: oxidising materials |
| Hazardous decomposition products | : Under normal conditions of storage and use, hazardous decomposition products should not be produced. |

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity

| Product/ingredient name | Result | Species | Dose | Exposure |
|-------------------------|---------------------------------|------------|-------------|----------|
| dicopper oxide | LC50 Inhalation Dusts and mists | Rat | 3.34 mg/l | 4 hours |
| | LD50 Oral | Rat | 1340 mg/kg | - |
| xylene | LC50 Inhalation Vapour | Rat | 11 mg/l | 4 hours |
| | LD50 Oral | Rat | 4300 mg/kg | - |
| | TDL ₀ Dermal | Rabbit | 4300 mg/kg | - |
| zineb | LD50 Oral | Rat | 1850 mg/kg | - |
| | LC50 Inhalation Vapour | Rat - Male | 11 mg/l | 4 hours |
| ethylbenzene | LD50 Dermal | Rabbit | >5000 mg/kg | - |
| | LD50 Oral | Rat | 3500 mg/kg | - |
| | LD50 Oral | Rabbit | 13 g/kg | - |
| 1-methoxy-2-propanol | LD50 Dermal | Rabbit | 13 g/kg | - |
| | LD50 Oral | Rat | 6600 mg/kg | - |

Irritation/Corrosion

| Product/ingredient name | Result | Species | Score | Exposure | Observation |
|-------------------------|------------------------------------|---------|-------|------------------------|-------------|
| dicopper oxide | Eyes - Cornea opacity | Rabbit | - | 72 hours | - |
| | Eyes - Redness of the conjunctivae | Rabbit | - | 48 hours | - |
| xylene | Eyes - Mild irritant | Rabbit | - | 87 milligrams | - |
| | Skin - Mild irritant | Rat | - | 8 hours 60 microliters | - |
| zinc oxide | Eyes - Mild irritant | Rabbit | - | 24 hours 500 mg | - |
| | Skin - Mild irritant | Rabbit | - | 24 hours 500 mg | - |
| 1-methoxy-2-propanol | Eyes - Mild irritant | Rabbit | - | 24 hours 500 mg | - |
| | Skin - Mild irritant | Rabbit | - | 500 mg | - |

Sensitisation

| Product/ingredient name | Route of exposure | Species | Result |
|-------------------------|-------------------|------------------------------|-------------|
| colophony | skin | Mammal - species unspecified | Sensitising |
| zineb | skin | Mammal - species unspecified | Sensitising |

Mutagenicity

Not available.

Conclusion/Summary : Not classified.

Carcinogenicity

Not available.

Conclusion/Summary : Not classified.

Reproductive toxicity

| Product/ingredient name | Maternal toxicity | Fertility | Developmental toxin | Species | Dose | Exposure |
|-------------------------|-------------------|-----------|---------------------|------------------------------|------------------------------|----------|
| zineb | - | - | Positive | Mammal - species unspecified | Route of exposure unreported | - |

Conclusion/Summary : Suspected of damaging the unborn child.

Teratogenicity

Not available.

Conclusion/Summary : Suspected of damaging the unborn child.

Section 11. Toxicological information

Specific target organ toxicity (single exposure)

| Product/ingredient name | Category | Route of exposure | Target organs |
|-----------------------------|------------|-------------------|------------------------------|
| xylene | Category 3 | - | Respiratory tract irritation |
| zineb | Category 3 | - | Respiratory tract irritation |
| 1-methoxy-2-propanol | Category 3 | - | Narcotic effects |
| hydrocarbons, C9, aromatics | Category 3 | - | Respiratory tract irritation |
| | Category 3 | | Narcotic effects |

Specific target organ toxicity (repeated exposure)

| Product/ingredient name | Category | Route of exposure | Target organs |
|-------------------------|------------|-------------------|----------------|
| ethylbenzene | Category 2 | - | hearing organs |

Aspiration hazard

| Product/ingredient name | Result |
|-----------------------------|--------------------------------|
| xylene | ASPIRATION HAZARD - Category 1 |
| ethylbenzene | ASPIRATION HAZARD - Category 1 |
| hydrocarbons, C9, aromatics | ASPIRATION HAZARD - Category 1 |

Information on likely routes of exposure : Not available.

Potential acute health effects

- Eye contact** : Causes serious eye damage.
- Inhalation** : May cause respiratory irritation.
- Skin contact** : Causes skin irritation. May cause an allergic skin reaction.
- Ingestion** : May be harmful if swallowed.

Symptoms related to the physical, chemical and toxicological characteristics

- Eye contact** : Adverse symptoms may include the following:
pain
watering
redness
- Inhalation** : Adverse symptoms may include the following:
respiratory tract irritation
coughing
reduced foetal weight
increase in foetal deaths
skeletal malformations
- Skin contact** : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur
reduced foetal weight
increase in foetal deaths
skeletal malformations
- Ingestion** : Adverse symptoms may include the following:
stomach pains
reduced foetal weight
increase in foetal deaths
skeletal malformations

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Section 11. Toxicological information

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 : Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Carcinogenicity : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : Suspected of damaging fertility or the unborn child.

Numerical measures of toxicity

Acute toxicity estimates

| Product/ingredient name | Oral (mg/kg) | Dermal (mg/kg) | Inhalation (gases) (ppm) | Inhalation (vapours) (mg/l) | Inhalation (dusts and mists) (mg/l) |
|-------------------------|--------------|----------------|--------------------------|-----------------------------|-------------------------------------|
| SeaForce Shield | 2237.1 | 7586.5 | N/A | 56.9 | 14.9 |
| dicopper oxide | 500 | N/A | N/A | N/A | 3.34 |
| xylene | N/A | 1100 | N/A | 11 | N/A |
| ethylbenzene | N/A | N/A | N/A | 11 | N/A |
| 1-methoxy-2-propanol | 6600 | 13000 | N/A | N/A | N/A |

Section 12. Ecological information

Toxicity

| Product/ingredient name | Result | Species | Exposure |
|-------------------------|---|--|----------|
| dicopper oxide | Acute LC50 0.075 mg/l Fresh water | Fish - Danio rerio | 96 hours |
| | Chronic NOEC 0.001 mg/l | Algae | - |
| xylene | Chronic NOEC 0.0052 mg/l | Algae | - |
| | Acute LC50 8500 µg/l Marine water | Crustaceans - Palaemonetes pugio | 48 hours |
| zineb | Acute LC50 13400 µg/l Fresh water | Fish - Pimephales promelas | 96 hours |
| | Acute EC50 0.38 mg/l Fresh water | Algae - Pseudokirchneriella subcapitata | 96 hours |
| ethylbenzene | Acute LC50 970 to 1800 µg/l Fresh water | Daphnia - Daphnia magna | 48 hours |
| | Acute LC50 0.225 mg/l | Fish | 96 hours |
| | Acute LC50 20.8 ppm Fresh water | Fish - Oncorhynchus mykiss | 96 hours |
| | Chronic NOEC 0.05 mg/l Fresh water | Algae - Chlorella vulgaris | 96 hours |
| | Chronic NOEC 0.05 mg/l Fresh water | Algae - Scenedesmus quadricauda | 96 hours |
| | Acute EC50 7700 µg/l Marine water | Algae - Skeletonema costatum | 96 hours |
| zinc oxide | Acute EC50 2.93 mg/l | Daphnia | 48 hours |
| | Acute LC50 4.2 mg/l | Fish | 96 hours |
| zinc oxide | Acute LC50 1.1 ppm Fresh water | Fish - Oncorhynchus mykiss | 96 hours |
| | Chronic NOEC 0.02 mg/l Fresh water | Algae - Pseudokirchneriella subcapitata - Exponential growth phase | 72 hours |

Section 12. Ecological information

| | | | |
|-----------------------------|---|--------------------------|----------------------------------|
| hydrocarbons, C9, aromatics | Acute EC50 <10 mg/l Acute IC50 <10 mg/l Acute LC50 <10 mg/l | Daphnia Algae Fish | 48 hours 72 hours 96 hours |
|-----------------------------|---|--------------------------|----------------------------------|

Persistence and degradability

| Product/ingredient name | Aquatic half-life | Photolysis | Biodegradability |
|-----------------------------|-------------------|------------|------------------|
| dicopper oxide | - | - | Not readily |
| xylene | - | - | Readily |
| ethylbenzene | - | - | Readily |
| zinc oxide | - | - | Not readily |
| hydrocarbons, C9, aromatics | - | - | Not readily |

Bioaccumulative potential

| Product/ingredient name | LogP _{ow} | BCF | Potential |
|-----------------------------|--------------------|-------------|-----------|
| xylene | 3.12 | 8.1 to 25.9 | low |
| colophony | 1.9 to 7.7 | - | high |
| zineb | 1.3 | - | low |
| ethylbenzene | 3.6 | - | low |
| zinc oxide | - | 28960 | high |
| 1-methoxy-2-propanol | <1 | - | low |
| hydrocarbons, C9, aromatics | - | 10 to 2500 | high |

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 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. 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. Vapour 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 spilt material and runoff and contact with soil, waterways, drains and sewers.

Section 14. Transport information

| | ADR/RID | ADN | IMDG | IATA |
|--------------------------------|---------|--------|--|--------|
| UN number | UN1263 | UN1263 | UN1263 | UN1263 |
| UN proper shipping name | Paint | Paint | Paint. Marine pollutant (dicopper oxide) | Paint |
| | | | | |

Section 14. Transport information

| | | | | |
|----------------------------|--|--|---|--|
| Transport hazard class(es) | 3  | 3  | 3  | 3  |
| Packing group | III | III | III | III |
| Environmental hazards | Yes. | Yes. | Yes. | Yes. The environmentally hazardous substance mark is not required. |

Additional information

- ADR/RID** : The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.
Hazard identification number 30
Tunnel code (D/E)
- ADN** : The environmentally hazardous substance mark is not required when transported in sizes of ≤5 L or ≤5 kg.
- IMDG** : The marine pollutant mark is not required when transported in sizes of ≤5 L or ≤5 kg.
Emergency schedules F-E, S-E
- IATA** : The environmentally hazardous substance mark may appear if required by other transportation regulations.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

International regulations

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.

Section 16. Other information

History

- Date of printing** : 30.10.2024
- Date of issue/Date of revision** : 30.10.2024
- Date of previous issue** : No previous validation
- Version** : 1

Section 16. Other information

| | |
|-----------------------------|---|
| Key to abbreviations | : ADN = European Provisions concerning the International Carriage of Dangerous Goods by Inland Waterway ADR = The European Agreement concerning the International Carriage of Dangerous Goods by Road ATE = Acute Toxicity Estimate BCF = Bioconcentration Factor GHS = Globally Harmonized System of Classification and Labelling of Chemicals GOST = Gosudarstvennyy standart 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 RID = The Regulations concerning the International Carriage of Dangerous Goods by Rail SGG = Segregation Group UN = United Nations |
|-----------------------------|---|

Procedure used to derive the classification

| Classification | Justification |
|--|-----------------------|
| FLAMMABLE LIQUIDS - Category 3 | On basis of test data |
| ACUTE TOXICITY (oral) - Category 5 | Calculation method |
| SKIN CORROSION/IRRITATION - Category 2 | Calculation method |
| SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1 | Calculation method |
| CHEMICALS THAT CAUSE SENSITIZATION - Chemical which cause skin sensitization | Calculation method |
| REPRODUCTIVE TOXICITY - Category 2 | Calculation method |
| SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3 | Calculation method |
| SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1 | Calculation method |
| LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1 | Calculation method |

References : Not available.

📌 Indicates information that has changed from previously issued version.

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Users should always consult Jotun for specific guidance on the general suitability of this product for their needs and specific application practices.

If there is any inconsistency between different language issues of this document, the English (United Kingdom) version will prevail.