

SAFETY DATA SHEET



SeaForce Active Ace

Section 1. Chemical product and company identification

Product name : 加强水解型自抛光防污漆 (A)
Product code : 45642
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

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Section 2. Hazards identification

Classification of the substance or mixture according to GB 13690-2009 and GB 30000-2013

Section 2. Hazards identification

Classification of the substance or mixture :

- FLAMMABLE LIQUIDS - Category 3
- ACUTE TOXICITY (oral) - Category 4
- ACUTE TOXICITY (dermal) - Category 5
- ACUTE TOXICITY (inhalation) - Category 4
- SKIN CORROSION/IRRITATION - Category 2
- SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1
- SKIN SENSITISATION - Category 1
- CARCINOGENICITY - Category 2
- REPRODUCTIVE TOXICITY - Category 2
- SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3
- SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2
- SHORT-TERM (ACUTE) AQUATIC HAZARD - Category 1
- LONG-TERM (CHRONIC) AQUATIC HAZARD - Category 1

GHS label elements

Hazard pictograms



Signal word

: Danger.

Hazard statements

: H226 - Flammable liquid and vapour.
 H302 + H332 - Harmful if swallowed or if inhaled.
 H313 - May be harmful in contact with skin.
 H315 - Causes skin irritation.
 H317 - May cause an allergic skin reaction.
 H318 - Causes serious eye damage.
 H335 - May cause respiratory irritation.
 H351 - Suspected of causing cancer.
 H361 - Suspected of damaging fertility or the unborn child.
 H373 - May cause damage to organs through prolonged or repeated exposure. (nervous system)
 H410 - Very toxic to aquatic life with long lasting effects.

Precautionary statements

General

: Not applicable.

Prevention

: P201 - Obtain special instructions before use.
 P280 - Wear protective gloves, protective clothing and eye or face protection.
 P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
 P273 - Avoid release to the environment.
 P260 - Do not breathe vapour.
 P270 - Do not eat, drink or smoke when using this product.

Response

: P391 - Collect spillage.
 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.
 P362 + P364 - Take off contaminated clothing and wash it before reuse.
 P302 + P312, P352 - IF ON SKIN: Call a POISON CENTER or doctor if you feel unwell. Wash with plenty of water.
 P333 + P313 - If skin irritation or rash occurs: Get medical advice or attention.
 P305 + P351 + P338, P310 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.

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.

In compliance

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

Section 2. Hazards identification

Physical and chemical hazards : Flammable liquid and vapour.

Health hazards : Harmful if swallowed or if inhaled. Causes skin irritation. May cause an allergic skin reaction. Causes serious eye damage. May cause respiratory irritation. Suspected of causing cancer. Suspected of damaging fertility or the unborn child.

Section 3. Composition/information on ingredients

Substance/mixture : Mixture

Other means of identification : Not available.

| Ingredient name | % | CAS number |
|-----------------------------|------|------------|
| dicopper oxide | ≤50 | 1317-39-1 |
| xylene | ≤25 | 1330-20-7 |
| zinc oxide | ≤25 | 1314-13-2 |
| colophony | ≤10 | 8050-09-7 |
| zineb | ≤10 | 12122-67-7 |
| ethylbenzene | ≤5 | 100-41-4 |
| copper pyrithione | <3 | 14915-37-8 |
| 1-methoxy-2-propanol | ≤3 | 107-98-2 |
| hydrocarbons, C9, aromatics | ≤3 | 64742-95-6 |
| medetomidine | ≤0.3 | 86347-14-0 |

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

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

Section 4. First aid measures

Description of necessary first aid measures

Eye contact : 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.

Section 4. First aid measures

- 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** : Harmful if inhaled. May cause respiratory irritation.
- Skin contact** : May be harmful in contact with skin. Causes skin irritation. May cause an allergic skin reaction.
- Ingestion** : Harmful if swallowed.

Over-exposure signs/symptoms

- 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

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.

Section 4. First aid measures

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 spilt material. Shut off all ignition sources. No flares, 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 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). 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.

Section 6. Accidental release measures

- 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 spilt 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.

- 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.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

| Ingredient name | Exposure limits |
|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| dicopper oxide | GBZ 2.1 (China, 11/2022). [Copper] PC-TWA: 0.2 mg/m ³ , (as Cu) 8 hours. Form: Fume |
| xylene | GBZ 2.1 (China, 11/2022). [Xylene] PC-STEL: 100 mg/m ³ 15 minutes. PC-TWA: 50 mg/m ³ 8 hours. |
| colophony | ACGIH TLV (United States, 1/2023). [resin acids] Skin sensitiser. Inhalation sensitiser. TWA: 0.001 mg/m ³ , (as total Resin acids) 8 hours. Form: Inhalable fraction |
| ethylbenzene | GBZ 2.1 (China, 11/2022). PC-TWA: 100 mg/m ³ 8 hours. |

Section 8. Exposure controls/personal protection

1-methoxy-2-propanol

PC-STEL: 150 mg/m³ 15 minutes.
ACGIH TLV (United States, 1/2023).
 STEL: 369 mg/m³ 15 minutes.
 STEL: 100 ppm 15 minutes.
 TWA: 184 mg/m³ 8 hours.
 TWA: 50 ppm 8 hours.

Biological exposure indices

| Ingredient name | Exposure indices |
|------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| xylene | GBZ 2.1 (China, 11/2022) BEI: 0.4 g/L, methylhippuric acids [in urine]. Sampling time: end of work shift. BEI: 0.3 g/g Cr, methylhippuric acids [in urine]. Sampling time: end of work shift. |
| ethylbenzene | GBZ 2.1 (China, 11/2022) BEI: 0.8 g/g Cr, mandelic acid and phenylglyoxylic acid (MA and PGA) [in urine]. Sampling time: end of work shift. |

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.

Section 8. Exposure controls/personal protection

Wear suitable gloves tested to ISO 374-1:2016.

Not recommended, gloves(breakthrough time) < 1 hour: neoprene (> 0.35 mm), butyl rubber (> 0.4 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** : 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 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: 136.4°C (277.5°F)
- Flash point** : Closed cup: 28°C (82.4°F)
- Evaporation rate** : Highest known value: 0.84 (ethylbenzene) Weighted average: 0.79 compared with butyl acetate
- 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: 0.95 kPa (7.13 mm Hg) (at 20°C)
- Relative vapour density** : Highest known value: 3.7 (Air = 1) (xylene). Weighted average: 3.63 (Air = 1)
- Density** : 1.707 g/cm³
- Solubility(ies)** :

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

- Solubility in water** : Not available.

Section 9. Physical and chemical properties and safety characteristics

- 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 mm²/s (>20.5 cSt)
- Particle characteristics**
- Median particle size** : Not applicable.

No additional information.

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 | 20 mg/l | 4 hours |
| | LD50 Oral | Rat | 4300 mg/kg | - |
| | TDL _o Dermal | Rabbit | 4300 mg/kg | - |
| zineb | LD50 Oral | Rat | 1850 mg/kg | - |
| | ethylbenzene | LC50 Inhalation Vapour | Rat - Male | 17.8 mg/l |
| LD50 Dermal | | Rabbit | >5000 mg/kg | - |
| LD50 Oral | | Rat | 3500 mg/kg | - |
| copper pyrithione | LC50 Inhalation Dusts and mists | Rat | 70 mg/m ³ | 4 hours |
| | LD50 Dermal | Rabbit | 300 mg/kg | - |
| | LD50 Oral | Rat | 200 mg/kg | - |
| 1-methoxy-2-propanol | LD50 Dermal | Rabbit | 13 g/kg | - |
| | LD50 Oral | Rat | 6600 mg/kg | - |

Irritation/Corrosion

Section 11. Toxicological information

| 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 | - |
| copper pyrithione | Eyes - Severe irritant | Mammal - species unspecified | - | - | - |
| | Skin - Irritant | Mammal - species unspecified | - | - | - |
| 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.

Classification

| Product/ingredient name | IARC |
|-------------------------|------|
| zineb | 3 |
| ethylbenzene | 2B |

Reproductive toxicity

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

Specific target organ toxicity (single exposure)

Section 11. Toxicological information

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

Specific target organ toxicity (repeated exposure)

| Product/ingredient name | Category | Route of exposure | Target organs |
|-------------------------|------------|-------------------|----------------|
| ethylbenzene | Category 2 | - | - |
| copper pyrithione | Category 1 | - | nervous system |
| medetomidine | Category 1 | - | - |

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** : Harmful if inhaled. May cause respiratory irritation.
- Skin contact** : May be harmful in contact with skin. Causes skin irritation. May cause an allergic skin reaction.
- Ingestion** : 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

Section 11. Toxicological information

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

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 : May cause damage to organs through prolonged or repeated exposure. Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

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 : 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 Active Ace | 1372.1 | 4467.0 | N/A | 138.9 | 2.1 |
| dicopper oxide | 500 | N/A | N/A | N/A | 3.34 |
| xylene | N/A | 1100 | N/A | 20 | N/A |
| copper pyriithione | 200 | 300 | N/A | N/A | 0.07 |
| 1-methoxy-2-propanol | 6600 | 13000 | N/A | N/A | N/A |
| medetomidine | 5 | N/A | N/A | 0.5 | N/A |

Section 12. Ecological information

Toxicity

| Product/ingredient name | Result | Species | Exposure |
|-------------------------|-----------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------|----------------------------------|
| dicopper oxide | Acute LC50 0.075 mg/l Fresh water Chronic NOEC 0.001 mg/l | Fish - Danio rerio Algae | 96 hours - |
| xylene | Chronic NOEC 0.0052 mg/l Acute LC50 8500 µg/l Marine water | Algae Crustaceans - Palaemonetes pugio | - 48 hours |
| zinc oxide | Acute LC50 13400 µg/l Fresh water Acute LC50 1.1 ppm Fresh water Chronic NOEC 0.02 mg/l Fresh water | Fish - Pimephales promelas Fish - Oncorhynchus mykiss Algae - Pseudokirchneriella subcapitata - Exponential growth phase | 96 hours 96 hours 72 hours |
| zineb | Acute EC50 0.38 mg/l Fresh water | Algae - Pseudokirchneriella | 96 hours |

Section 12. Ecological information

| | | | |
|-----------------------------|-----------------------------------------|----------------------------------------|-----------|
| ethylbenzene | Acute LC50 970 to 1800 µg/l Fresh water | subcapitata 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 |
| copper pyrrithione | Acute EC50 7700 µg/l Marine water | Algae - Skeletonema costatum | 96 hours |
| | Acute EC50 2.93 mg/l | Daphnia | 48 hours |
| | Acute LC50 4.2 mg/l | Fish | 96 hours |
| hydrocarbons, C9, aromatics | Acute EC50 0.022 mg/l | Daphnia | 48 hours |
| | Acute IC50 0.035 mg/l | Algae | 120 hours |
| | Acute LC50 0.0043 mg/l | Fish | 96 hours |
| | Chronic NOEC 0.00046 mg/l | Algae - Skeletonema costatum | 120 hours |
| medetomidine | Acute EC50 <10 mg/l | Daphnia | 48 hours |
| | Acute IC50 <10 mg/l | Algae | 72 hours |
| | Acute LC50 <10 mg/l | Fish | 96 hours |
| | Acute EC50 0.65 mg/l | Algae | 72 hours |
| | Chronic NOEC 0.001 mg/l | Fish | 28 days |

Persistence/degradability

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

Bioaccumulative potential

| Product/ingredient name | LogP _{ow} | BCF | Potential |
|-----------------------------|--------------------|-------------|-----------|
| xylene | 3.12 | 8.1 to 25.9 | low |
| zinc oxide | - | 28960 | high |
| colophony | 1.9 to 7.7 | - | high |
| zineb | 1.3 | - | low |
| ethylbenzene | 3.6 | - | low |
| 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

Section 13. Disposal considerations

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

| | China | UN | IMDG | IATA |
|----------------------------|----------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|
| UN number | UN1263 | UN1263 | UN1263 | UN1263 |
| UN proper shipping name | Paint | Paint | Paint. Marine pollutant (dicopper oxide) | Paint |
| Transport hazard class(es) | 3  | 3  | 3   | 3  |
| Packing group | III | III | III | III |
| Environmental hazards | Yes. The environmentally hazardous substance mark is not required. | Yes. The environmentally hazardous substance mark is not required. | Yes. | Yes. The environmentally hazardous substance mark is not required. |

Additional information

- 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.
- ADR / RID** : Tunnel restriction code: (D/E)
Hazard identification number: 30
- Marking** : The environmental hazardous / marine pollutant mark is only applicable for packages containing more than 5 litres for liquids and 5 kg for solids.

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.

Extinguishing media

Suitable extinguishing media : Use dry chemical, CO₂, water spray (fog) or foam.

Unsuitable extinguishing media : Do not use water jet.

Incompatible materials : Reactive or incompatible with the following materials:
oxidising materials

Transport in bulk according to IMO instruments : Not available.

Section 15. Regulatory information

Safety, health and environmental regulations specific for the product:

Law of the People's Republic of China on the Prevention and Control of Occupational Diseases

Section 15. Regulatory information

Regulations on the Control over Safety of Dangerous Chemicals
 Measures for Environmental Management of New Chemical Substances
 Law of the People's Republic of China on the Prevention and Control of Environment Pollution Caused by Solid Wastes
 Safety regulations for the use of chemicals in the workplace
 General Rule for Classification and Hazard Communication of Chemicals
 Classification and code of dangerous goods

[List of Goods banned for Importing](#)

None of the components are listed.

[Drug Precursors Requiring an Import/Export License](#)

None of the components are listed.

[Inventory of Hazardous Chemicals](#)

| Ingredient name | CAS number | Status | Reference number |
|-----------------|------------|--------|------------------|
| xylene | 1330-20-7 | Listed | 358 |
| ethylbenzene | 100-41-4 | Listed | 2566 |

[List of Explosive Precursors](#)

None of the components are listed.

[List of Goods banned for Exporting](#)

None of the components are listed.

[List of Toxic Chemicals Severely Restricted for Importing & Exporting by China](#)

None of the components are listed.

[Catalogue and classification of drug precursor chemicals](#)

None of the components are listed.

[Inventory of highly toxic articles](#)

None of the components are listed.

[Catalogue of Hazardous Chemicals of Priority Management](#)

None of the components are listed.

[Catalogue of Occupational Disease Hazard Factors - Dust](#)

| Ingredient name | Status |
|-----------------|--------|
| diiron trioxide | Listed |

[Catalogue of Occupational Disease Hazard Factors - Chemical Factors](#)

| Ingredient name | Status |
|-------------------|--------|
| dicopper oxide | Listed |
| xylene | Listed |
| zinc oxide | Listed |
| ethylbenzene | Listed |
| copper pyrithione | Listed |

[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 \(PIC\)](#)

Section 15. Regulatory information

Not listed.

[UNECE Aarhus Protocol on POPs and Heavy Metals](#)

Not listed.

Section 16. Other information

History

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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

[Procedure used to derive the classification](#)

| Classification | Justification |
|----------------------------------------------------------------------------------------------|-----------------------|
| FLAMMABLE LIQUIDS - Category 3 | On basis of test data |
| ACUTE TOXICITY (oral) - Category 4 | Calculation method |
| ACUTE TOXICITY (dermal) - Category 5 | Calculation method |
| ACUTE TOXICITY (inhalation) - Category 4 | Calculation method |
| SKIN CORROSION/IRRITATION - Category 2 | Calculation method |
| SERIOUS EYE DAMAGE/EYE IRRITATION - Category 1 | Calculation method |
| SKIN SENSITISATION - Category 1 | Calculation method |
| CARCINOGENICITY - Category 2 | Calculation method |
| REPRODUCTIVE TOXICITY - Category 2 | Calculation method |
| SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3 | Calculation method |
| SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE - Category 2 | 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.

[Notice to reader](#)

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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.