SAFETY DATA SHEET

SeaForce Active Plus

Section 1. Identification

Product identifier : SeaForce Active Plus

Product code : 43003

Other means of identification : Not available.

Product type : Liquid.

Product description : Paint.

Recommended use of the chemical and restrictions on use

Identified uses

Use in coatings - Professional use

Restrictions on use

Not applicable.

Supplier's details : Jotun (Philippines) Inc.
27 Millennium Drive, Light Industry and Science Park III (LISP III),
Brgy. Santa Anastacia, Sto. Tomas, Batangas Philippines 4234

SDSJotun@jotun.com

Emergency telephone number : Office landline +632 776 1337
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Section 2. Hazard identification

Classification of the substance or mixture : FLAMMABLE LIQUIDS - Category 3
ACUTE TOXICITY (oral) - Category 4
ACUTE TOXICITY (inhalation) - Category 4
SKIN IRRITATION - Category 2
SERIOUS EYE DAMAGE - Category 1
SKIN SENSITISATION - Category 1
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.

Section 2. Hazard identification

Hazard statements : H226 - Flammable liquid and vapour.
H302 + H332 - Harmful if swallowed or if inhaled.
H315 - Causes skin irritation.
H317 - May cause an allergic skin reaction.
H318 - Causes serious eye damage.
H335 - May cause respiratory irritation.
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 : P280 - Wear protective gloves, protective clothing, eye protection, face protection, or hearing protection.
P210 - Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.
P271 - Use only outdoors or in a well-ventilated area.
P273 - Avoid release to the environment.
P260 - Do not breathe vapour.
P270 - Do not eat, drink or smoke when using this product.
P264 + P265 - Wash hands thoroughly after handling. Do not touch eyes.
P272 - Contaminated work clothing should not be allowed out of the workplace.

Response : P391 - Collect spillage.
P304 + P340, P317 - IF INHALED: Remove person to fresh air and keep comfortable for breathing. Get medical help.
P301 + P317, P330 - IF SWALLOWED: Get medical help. Rinse mouth.
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water.
P302 + P352 - IF ON SKIN: Wash with plenty of water.
P333 + P317 - If skin irritation or rash occurs: Get medical help.
P332 + P317 - If skin irritation occurs: Get medical help.
P362 + P364 - Take off contaminated clothing and wash it before reuse.
P305 + P354 + P338, P317 - IF IN EYES: Immediately rinse with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical help.
P319 - Get medical help if you feel unwell.

Storage : P405 - Store locked up.
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.

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
dicopper oxide	≥25 - ≤50	CAS: 1317-39-1
xylene	≥10 - ≤25	CAS: 1330-20-7
colophony	≤10	CAS: 8050-09-7
zinc oxide	≤10	CAS: 1314-13-2
zineb	≤10	CAS: 12122-67-7
ethylbenzene	≤5	CAS: 100-41-4
1-methoxy-2-propanol	≤3	CAS: 107-98-2
hydrocarbons, C9, aromatics	≤3	CAS: 64742-95-6
Bis(1-hydroxy-1H-pyridine-2-thionato- O,S)copper (Copper pyrithione)	<3	CAS: 14915-37-8
lead powder; [particle diameter < 1 mm] (Impurity)	<0.01	CAS: 7439-92-1

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.

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

Section 4. First aid measures

Potential acute health effects

Eye contact : Causes serious eye damage.

Inhalation : Harmful if inhaled. May cause respiratory irritation.

Skin contact : 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

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur

Ingestion : Adverse symptoms may include the following:
stomach pains

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 : Recommended: alcohol-resistant foam, CO_2, powders, water spray.

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.

Section 5. Firefighting measures

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. Absorb with an inert material and place in an appropriate waste disposal container. Dispose of via a licensed waste disposal contractor.

Large spill : Stop leak if without risk. Move containers from spill area. 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. Dispose of via a licensed waste disposal contractor. Contaminated absorbent material may pose the same hazard as the spilt product. 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.

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. 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.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
xylene	**TLV (Philippines, 4/2016) [Xylene]** TLV 8 hours: 0.1 mg/m³.
zinc oxide	**TLV (Philippines, 4/2016)** TLV 8 hours: 1 mg/m³. Form: Fume.
ethylbenzene	**TLV (Philippines, 4/2016)** TLV-Ceiling: 435 mg/m³. TLV-Ceiling: 100 ppm.
lead powder; [particle diameter < 1 mm] (Impurity)	**TLV (Philippines, 4/2016)** TLV 8 hours: 0.15 mg/m³. Form: Dust and fumes.

Biological exposure indices

No exposure indices known.

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 EN 166 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

Section 8. Exposure controls/personal protection

Hand protection : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary. 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 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 available.

pH : Not applicable.

Melting point/freezing point : Not available.

Boiling point or initial boiling point and boiling range : Not available.

Flash point : Closed cup: 28°C (82.4°F)

Evaporation rate : Not available.

Flammability : Not available.

Lower and upper explosion limit/flammability limit : Not available.

Vapour pressure :

Ingredient name	Vapour Pressure at 20°C			Vapour pressure at 50°C		
	mm Hg	kPa	Method	mm Hg	kPa	Method
xylene	6.7	0.89				

Relative vapour density : Not available.

Relative density : Not available.

Density : 1.722 to 1.728 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 applicable.

Auto-ignition temperature :

Ingredient name	°C	°F	Method
xylene	432	809.6	

Decomposition temperature : Not available.

Viscosity : Dynamic (room temperature): Not available.
Kinematic (room temperature): Not available.
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
dicopper oxide	**Rat - Oral - LD50** 1340 mg/kg **Rat - Inhalation - LC50 Dusts and mists** 3.34 mg/l [4 hours]
xylene	**Rat - Oral - LD50** 4300 mg/kg Toxic effects: Liver - Other changes Kidney, Ureter, and Bladder - Other changes **Rabbit - Dermal - TDLo** 4300 mg/kg Toxic effects: Skin After topical exposure - Corrosive **Rat - Inhalation - LC50 Vapour** 11 mg/l [4 hours]
zineb	**Rat - Oral - LD50** 1850 mg/kg Toxic effects: Behavioral - Excitement Gastrointestinal - Hypermotility, diarrhea Gross Metabolite Changes - Weight loss or decreased weight gain
ethylbenzene	**Rat - Oral - LD50** 3500 mg/kg

Section 11. Toxicological information

	Toxic effects: Liver - Other changes Kidney, Ureter, and Bladder - Other changes **Rabbit - Dermal - LD50** >5000 mg/kg **Rat - Male - Inhalation - LC50 Vapour** 11 mg/l [4 hours]
1-methoxy-2-propanol	**Rabbit - Dermal - LD50** 13 g/kg **Rat - Oral - LD50** 6600 mg/kg Toxic effects: Brain and Coverings - Other degenerative changes Behavioral - General anesthetic Lung, Thorax, or Respiration - Dyspnea
Bis(1-hydroxy-1H-pyridine-2-thionato- O,S) copper (Copper pyrithione)	**Rat - Oral - LD50** 200 mg/kg **Rabbit - Dermal - LD50** 300 mg/kg **Rat - Inhalation - LC50 Dusts and mists** 70 mg/m³ [4 hours] Toxic effects: Eye - Lacrimation Lung, Thorax, or Respiration - Dyspnea Lung, Thorax, or Respiration - Respiratory stimulation

Conclusion/Summary[Product] : Not available.

Skin corrosion/irritation

Product/ingredient name	Result
xylene	**Rat - Skin - Mild irritant** Duration of treatment/exposure: 8 hours Amount/concentration applied: 60 microliters
zinc oxide	**Rabbit - Skin - Mild irritant** Duration of treatment/exposure: 24 hours Amount/concentration applied: 500 mg
1-methoxy-2-propanol	**Rabbit - Skin - Mild irritant** Amount/concentration applied: 500 mg
Bis(1-hydroxy-1H-pyridine-2-thionato- O,S) copper (Copper pyrithione)	**Mammal - species unspecified - Skin - Irritant**

Conclusion/Summary[Product] : Not available.

Serious eye damage/eye irritation

Product/ingredient name	Result
dicopper oxide	**Rabbit - Eyes - Cornea opacity** OECD 405 Duration of treatment/exposure: 72 hours **Rabbit - Eyes - Redness of the conjunctivae** OECD 405 Duration of treatment/exposure: 48 hours
xylene	**Rabbit - Eyes - Mild irritant** Amount/concentration applied: 87 milligrams
zinc oxide	**Rabbit - Eyes - Mild irritant** Duration of treatment/exposure: 24 hours Amount/concentration applied: 500 mg
1-methoxy-2-propanol	**Rabbit - Eyes - Mild irritant** Duration of treatment/exposure: 24 hours Amount/concentration applied: 500 mg
Bis(1-hydroxy-1H-pyridine-2-thionato- O,S) copper (Copper pyrithione)	**Mammal - species unspecified - Eyes - Severe irritant**

Conclusion/Summary[Product] : Not available.

Section 11. Toxicological information

Respiratory corrosion/irritation

Not available.

Conclusion/Summary[Product] : Not available.

Respiratory or skin sensitization

Product/ingredient name	Result
colophony	**Mammal - species unspecified - skin** Result: Sensitising
zineb	**Mammal - species unspecified - skin** Result: Sensitising
Bis(1-hydroxy-1H-pyridine-2-thionato- O,S) copper (Copper pyrithione)	**Guinea pig - skin** Result: Not sensitizing

Skin

Conclusion/Summary[Product] : Not available.

Ingredient name	Conclusion/Summary
colophony	May cause an allergic skin reaction.

Respiratory

Conclusion/Summary[Product] : Not available.

Germ cell mutagenicity

Product/ingredient name	Result
Bis(1-hydroxy-1H-pyridine-2-thionato- O,S) copper (Copper pyrithione)	**In vivo - Mammalian-Animal - Oral** OECD 474 1300 mg/kg Result: Negative

Conclusion/Summary[Product] : Not classified.

Carcinogenicity

Not available.

Conclusion/Summary[Product] : Not classified.

Reproductive toxicity

Product/ingredient name	Result
zineb	**Mammal - species unspecified - Unreported** Developmental: Positive
Bis(1-hydroxy-1H-pyridine-2-thionato- O,S) copper (Copper pyrithione)	**Mammal - species unspecified - Unreported** Developmental: Positive

Conclusion/Summary[Product] : Suspected of damaging the unborn child.

Specific target organ toxicity (single exposure)

Product/ingredient name	Result

Section 11. Toxicological information

xylene	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3
zineb	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3
1-methoxy-2-propanol	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Narcotic effects) - Category 3
hydrocarbons, C9, aromatics	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3 SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Narcotic effects) - Category 3
Bis(1-hydroxy-1H-pyridine-2-thionato- O,S) copper (Copper pyrithione)	SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3

Specific target organ toxicity (repeated exposure)

Product/ingredient name	Result
ethylbenzene	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE (hearing organs) - Category 2
Bis(1-hydroxy-1H-pyridine-2-thionato- O,S) copper (Copper pyrithione)	SPECIFIC TARGET ORGAN TOXICITY - REPEATED EXPOSURE (nervous system) - 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 : 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

Skin contact : Adverse symptoms may include the following:
pain or irritation
redness
blistering may occur

Ingestion : Adverse symptoms may include the following:
stomach pains

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

Section 11. Toxicological information

Potential immediate effects : Not available.

Potential delayed effects : Not available.

Potential chronic health effects

Not available.

Conclusion/Summary[Product] : 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 : No known significant effects or critical hazards.

Mutagenicity : No known significant effects or critical hazards.

Reproductive toxicity : No known significant effects or critical hazards.

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 Plus	1479.7	7572.4	N/A	56.8	3.3
dicopper oxide	500	N/A	N/A	N/A	3.34
xylene	4300	1100	N/A	11	N/A
ethylbenzene	3500	N/A	N/A	11	N/A
1-methoxy-2-propanol	6600	13000	N/A	N/A	N/A
Bis(1-hydroxy-1H-pyridine-2-thionato- O,S)copper (Copper pyrithione)	1075	N/A	N/A	N/A	0.07

Section 12. Ecological information

Toxicity

Product/ingredient name	Result
dicopper oxide	**Acute - LC50 - Fresh water** Fish - Zebra danio - *Danio rerio* 0.075 mg/l [96 hours] Effect: Mortality **Chronic - NOEC** Algae 0.001 mg/l **Chronic - NOEC** Algae 0.0052 mg/l **LC50** Fish - *Cyprinodon variegatus* >0.173 mg/l [96 hours] **EC50** Daphnia 0.51 mg/l [48 hours]
xylene	**Acute - LC50 - Marine water** Crustaceans - Daggerblade grass shrimp - *Palaemonetes pugio* 8500 µg/l [48 hours] Effect: Mortality **Acute - LC50 - Fresh water**

Section 12. Ecological information

	Fish - Fathead minnow - *Pimephales promelas* Age: 31 days; Size: 18.4 mm; Weight: 0.077 g 13400 µg/l [96 hours] Effect: Mortality
zinc oxide	**Chronic - NOEC - Fresh water** Algae - Green algae - *Pseudokirchneriella subcapitata* - Exponential growth phase 0.02 mg/l [72 hours] Effect: Growth **Acute - LC50 - Fresh water** US EPA Fish - Rainbow trout,donaldson trout - *Oncorhynchus mykiss* Weight: 0.78 g 1.1 ppm [96 hours] Effect: Mortality
zineb	**Acute - LC50** Fish - Trout 0.225 mg/l [96 hours] **Acute - LC50 - Fresh water** Daphnia - Water flea - *Daphnia magna* 970 to 1800 µg/l [48 hours] Effect: Mortality **Chronic - NOEC - Fresh water** Algae - Green algae - *Chlorella vulgaris* 0.05 mg/l [96 hours] Effect: Population **Chronic - NOEC - Fresh water** Algae - Green algae - *Scenedesmus quadricauda* 0.05 mg/l [96 hours] Effect: Population **Acute - EC50 - Fresh water** Algae - Green algae - *Pseudokirchneriella subcapitata* 0.38 mg/l [96 hours] Effect: Population
ethylbenzene	**Acute - EC50** Daphnia 2.93 mg/l [48 hours] Effect: Intoxication **Acute - LC50** Fish 4.2 mg/l [96 hours] Effect: Mortality **Acute - EC50 - Marine water** Algae - Diatom - *Skeletonema costatum* 7700 µg/l [96 hours] Effect: Population
hydrocarbons, C9, aromatics	**Acute - LC50** Fish <10 mg/l [96 hours] **Acute - EC50** Daphnia <10 mg/l [48 hours] **Acute - IC50** Algae <10 mg/l [72 hours]
Bis(1-hydroxy-1H-pyridine-2-thionato- O,S) copper (Copper pyrithione)	**Acute - LC50** Fish 0.0043 mg/l [96 hours] **Acute - EC50** Daphnia 0.022 mg/l [48 hours]

Section 12. Ecological information

Acute - IC50
Algae
0.035 mg/l [120 hours]
Chronic - NOEC
Algae - *Skeletonema costatum*
0.00046 mg/l [120 hours]
EC50
Algae - *Skeletonema costatum*
0.0012 mg/l [120 hours]

Conclusion/Summary[Product] : Not available.

Ingredient name	Conclusion/Summary
1-methoxy-2-propanol	Not available.

Persistence and degradability

Not available.

Conclusion/Summary[Product] : Not available.

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

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
zinc oxide	-	28960	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 : 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

Section 13. Disposal considerations

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
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

Philippines - Priority Chemical List (PCL)

Not applicable.

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

SDS based on UN GHS Revision : 9

History

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Abbreviations and acronyms : 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
IMO = International Maritime Organization
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 (inhalation) - Category 4	Calculation method
SKIN IRRITATION - Category 2	Calculation method
SERIOUS EYE DAMAGE - Category 1	Calculation method
SKIN SENSITISATION - Category 1	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

Key literature references and sources for data : 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.