

SAFETY DATA SHEET



Jotun Protects Property

Megayacht Imperial Antifouling

Section 1. Identification

Product identifier : Megayacht Imperial Antifouling
Product code : 30822
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 - Industrial use
Use in coatings - Professional use

Restrictions on use


Not applicable.

Supplier's details : Jotun (Philippines) Inc.
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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 or spray.
 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
copper oxide	≥25 - ≤50	CAS: 1317-39-1
xylene	≥10 - ≤25	CAS: 1330-20-7
zinc oxide	≥10 - ≤25	CAS: 1314-13-2
ethylbenzene	<10	CAS: 100-41-4
hydrocarbons, C9, aromatics	≤10	CAS: 64742-95-6
colophony	≤5	CAS: 8050-09-7
zineb	≤5	CAS: 12122-67-7
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

Potential acute health effects

Section 4. First aid measures

- 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, CO₂, 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/m ³ .
zinc oxide	TLV (Philippines, 4/2016) TLV 8 hours: 1 mg/m ³ . Form: Fume.
ethylbenzene	TLV (Philippines, 4/2016) TLV-Ceiling: 435 mg/m ³ . TLV-Ceiling: 100 ppm.
lead powder; [particle diameter < 1 mm] (Impurity)	TLV (Philippines, 4/2016) TLV 8 hours: 0.15 mg/m ³ . 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** : dark blue, 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: 25°C (77°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** : 1.661 to 1.669 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 mm²/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

dicopper oxide

Result

Rat - Oral - LD50

1340 mg/kg

Rat - Inhalation - LC50 Dusts and mists

3.34 mg/l [4 hours]

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]

Rat - Oral - LD50

3500 mg/kg

Toxic effects: Liver - Other changes Kidney, Ureter, and Bladder - Other changes

Rabbit - Dermal - LD50

>5000 mg/kg

Rat - Male - Inhalation - LC50 Vapour

xylene

ethylbenzene

Section 11. Toxicological information

zineb	11 mg/l [4 hours] Rat - Oral - LD50 1850 mg/kg <u>Toxic effects:</u> Behavioral - Excitement Gastrointestinal - Hypermotility, diarrhea Gross Metabolite Changes - Weight loss or decreased weight gain
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/m ³ [4 hours] <u>Toxic effects:</u> Eye - Lacrimation Lung, Thorax, or Respiration - Dyspnea Lung, Thorax, or Respiration - Respiratory stimulation

Conclusion/Summary[Product] : Not available.

Skin corrosion/irritation

Product/ingredient name

xylene

Result

Rat - Skin - Mild irritant

Duration of treatment/exposure: 8 hours

Amount/concentration applied: 60 microliters

Rabbit - Skin - Mild irritant

Duration of treatment/exposure: 24 hours

Amount/concentration applied: 500 mg

Mammal - species unspecified - Skin - Irritant

zinc oxide

Bis(1-hydroxy-1H-pyridine-2-thionato- O,S)
copper (Copper pyrithione)

Conclusion/Summary[Product] : Not available.

Serious eye damage/eye irritation

Product/ingredient name

copper oxide

Result

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

Rabbit - Eyes - Mild irritant

Amount/concentration applied: 87 milligrams

Rabbit - Eyes - Mild irritant

Duration of treatment/exposure: 24 hours

Amount/concentration applied: 500 mg

Mammal - species unspecified - Eyes - Severe irritant

xylene

zinc oxide

Bis(1-hydroxy-1H-pyridine-2-thionato- O,S)
copper (Copper pyrithione)

Conclusion/Summary[Product] : Not available.

Respiratory corrosion/irritation

Not available.

Conclusion/Summary[Product] : Not available.

Respiratory or skin sensitization

Product/ingredient name

Result

Section 11. Toxicological information

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 available.

Carcinogenicity

Not available.

Conclusion/Summary[Product] : Not available.

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] : Not available.

Specific target organ toxicity (single exposure)

Product/ingredient name

Result

xylene

SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3

hydrocarbons, C9, aromatics

SPECIFIC TARGET ORGAN TOXICITY - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3

zineb

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 - SINGLE EXPOSURE (Respiratory tract irritation) - Category 3

Specific target organ toxicity (repeated exposure)

Product/ingredient name

Result

Section 11. Toxicological information

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	: <input checked="" type="checkbox"/> Adverse symptoms may include the following: respiratory tract irritation coughing
Skin contact	: <input checked="" type="checkbox"/> Adverse symptoms may include the following: pain or irritation redness blistering may occur
Ingestion	: <input checked="" type="checkbox"/> 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

Potential immediate effects	: Not available.
Potential delayed effects	: Not available.

Potential chronic health effects

Not available.

Conclusion/Summary[Product] : Not available.

General	: <input checked="" type="checkbox"/> 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.

Section 11. Toxicological information

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)
Megayacht Imperial Antifouling	1542.0	6256.1	N/A	46.9	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
Bis(1-hydroxy-1H-pyridine-2-thionato- O,S)copper (Copper pyriithione)	1075	N/A	N/A	N/A	0.07

Section 12. Ecological information

Toxicity

Product/ingredient name

dicopper oxide

Result

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

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

ethylbenzene

Acute - EC50

Section 12. Ecological information

	Daphnia 2.93 mg/l [48 hours] <u>Effect</u> : Intoxication Acute - LC50
	Fish 4.2 mg/l [96 hours] <u>Effect</u> : Mortality Acute - EC50 - Marine water
hydrocarbons, C9, aromatics	Algae - Diatom - <i>Skeletonema costatum</i> 7700 µg/l [96 hours] <u>Effect</u> : Population Acute - LC50
	Fish <10 mg/l [96 hours] Acute - EC50
	Daphnia <10 mg/l [48 hours] Acute - IC50
zineb	Algae <10 mg/l [72 hours] Acute - LC50
	Fish - Trout 0.225 mg/l [96 hours] Acute - LC50 - Fresh water
	Daphnia - Water flea - <i>Daphnia magna</i> 970 to 1800 µg/l [48 hours] <u>Effect</u> : Mortality Chronic - NOEC - Fresh water
	Algae - Green algae - <i>Chlorella vulgaris</i> 0.05 mg/l [96 hours] <u>Effect</u> : Population Chronic - NOEC - Fresh water
	Algae - Green algae - <i>Scenedesmus quadricauda</i> 0.05 mg/l [96 hours] <u>Effect</u> : Population Acute - EC50 - Fresh water
	Algae - Green algae - <i>Pseudokirchneriella subcapitata</i> 0.38 mg/l [96 hours] <u>Effect</u> : Population Acute - LC50
Bis(1-hydroxy-1H-pyridine-2-thionato- O,S) copper (Copper pyrithione)	Fish 0.0043 mg/l [96 hours] Acute - EC50
	Daphnia 0.022 mg/l [48 hours] Acute - IC50
	Algae 0.035 mg/l [120 hours] Chronic - NOEC
	Algae - <i>Skeletonema costatum</i> 0.00046 mg/l [120 hours] EC50
	Algae - <i>Skeletonema costatum</i> 0.0012 mg/l [120 hours]

Conclusion/Summary[Product] : Not available.

Persistence and degradability

Not available.

Section 12. Ecological information

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
zinc oxide	-	28960	High
ethylbenzene	3.6	-	Low
hydrocarbons, C9, aromatics	-	10 to 2500	High
colophony	1.9 to 7.7	-	High
zineb	1.3	-	Low

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 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

Section 14. Transport information

Environmental hazards	Yes.	Yes.	Yes.	Yes. The environmentally hazardous substance mark is not required.
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Additional information

- ADR/RID** : **Hazard identification number** 30
Special provisions 640E
Viscous liquid exception This class 3 viscous liquid that is also environmentally hazardous is not subject to regulation in packagings up to 5 L, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8 according to 2.2.3.1.5.2.
Tunnel code (D/E)
- ADN** : **Viscous liquid exception** This class 3 viscous liquid that is also environmentally hazardous is not subject to regulation in packagings up to 5 L, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8 according to 2.2.3.1.5.2.
- IMDG** : **Emergency schedules** F-E, S-E
Viscous liquid exception This class 3 viscous liquid that is also environmentally hazardous is not subject to regulation in packagings up to 5 L, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8 according to 2.3.2.5.
- IATA** : The environmentally hazardous substance mark may appear if required by other transportation regulations.
- UN** : **Viscous liquid exception** This class 3 viscous liquid that is also environmentally hazardous is not subject to regulation in packagings up to 5 L, provided the packagings meet the general provisions of 4.1.1.1, 4.1.1.2 and 4.1.1.4 to 4.1.1.8 according to 2.3.2.5.2.
- 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)

Not listed.

UNECE Aarhus Protocol on POPs and Heavy Metals

Not listed.

Section 16. Other information

SDS based on UN GHS : 9

Revision

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 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	On basis of test data Calculation method Calculation method Calculation method Calculation method Calculation method Calculation method Calculation method Calculation method Calculation method

Key literature references and sources for data : Not available.

☑ Indicates information that has changed from previously issued version.

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