Revision date/version no: 16-10-2017/ 02

SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name:	ECOLOFLEX SPC 400 HYB BROWN
Intended Use:	Paint
Manufacturer:	Nippon Paint (Singapore) Co Pte Ltd
Supplier:	Nippon Paint Marine (Singapore) Pte Ltd No. 1 First Lok Yang Road, Jurong Singapore 629728
Telephone Number:	+65 6268 1161 / +65 6265 5355 (Within Hours of Operation Mon- Fri: 0900-1700)
Facsimile Number:	+65 6268 1191 / +65 6264 1603

2. HAZARDS IDENTIFICATION

Classification Code:

Flammable Hazard	Category 2
Acute Toxicity:	
- Oral	Category 4
- Inhalation	Category 3
Skin corrosion/irritation	Category 2
Serious eye damage/irritation	Category 1
Germ cell mutagenicity	Category 1
Carcinogenicity	Category 1
Specific target organ toxicity:	
- Single exposure	Category 2
- Repeated exposure	Category 1
Aquatic Acute	Category 1
Aquatic Chronic	Category 1

GHS Pictogram

Signal Word

Danger

Hazard statements

H225: Highly flammable liquid and vapour
H302: Harmful if swallowed
H315: Causes skin irritation
H318: Causes serious eye damage
H331: Toxic if inhaled
H340: May cause genetic defects
H350: May cause cancer
H371: May cause damage to organs
H372: Causes damage to organs through prolonged or repeated exposure
H400: Very toxic to aquatic life
H410: Very toxic to aquatic life with long lasting effects

Precautionary statements

P201: Obtain special instructions before use
P202: Do not handle until all safety precautions have been read and understood
P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking
P233: Keep container tightly closed
P240: Ground/bond container and receiving equipment
P241: Use explosion-proof electrical/ventilating/light/equipment
P242: Use only non-sparking tools
P243: Take precautionary measures against static discharge
P260: Do not breathe dust/fume/gas/mist/vapours/spray
P261: Avoid breathing dust/fume/gas/mist/vapours/spray

P264: Wash hands thoroughly after handling
P270: Do not eat, drink or smoke when using this product
P271: Use only outdoors or in a well-ventilated area
P273: Avoid release to the environment
P280: Wear protective gloves/protective clothing/eye protection/face protection
P281: Use personal protective equipment as required

Response

P310: Immediately call a POISON CENTER or doctor/physician
P311: Call a POISON CENTER or doctor/physician
P314: Get medical advice/attention if you feel unwell
P321: Specific treatment (see Section 4 of SDS)
P330: Rinse mouth
P362: Take off contaminated clothing and wash before reuse
P391: Collect spillage
P301+312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P302+352: IF ON SKIN: Wash with soap and water
P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P308+313: IF exposed or concerned: Get medical advice/attention
P309+311: IF exposed or you feel unwell: Call a POISON CENTER or doctor/physician
P332+313: If skin irritation occurs: Get medical advice/attention
P370+378: In case of fire: Use appropriate media for extinction
P303+361+353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P305+351+338: IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing

Storage

P405: Store locked up
P403+233: Store in a well ventilated place. Keep container tightly closed
P403+235: Store in a well ventilated place. Keep cool

Disposal

P501: Dispose of contents/container to appropriate waste site or reclaimer in accordance with local or national regulations

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substance or Preparation: Preparation

Chemical nature:Acrylic resin paint

Substances	CAS No.	%
Dicopper Oxide	1317-39-1	20 - 50
Xylene	1330-20-7	10 - 25
Quartz(Sio2)	14808-60-7	1 - 10
Diiron Trioxide	1309-37-1	1 - 10
Bis(1-hydroxy-1H-pyridine-2-thionato-O,S)copper	14915-37-8	1 - 5
Polyvinylethylether	proprietary	1 - 5
Ethylbenzene	100-41-4	0.1 - 2.0
Fatty Acid Amide	proprietary	0.1 - 1.0
Titanium Dioxide	13463-67-7	0.1 - 1.0
Ethanol	64-17-5	0.1 - 0.5
		100%

4. FIRST-AID MEASURES

INHALATION

- Move person to fresh air and call for medical assistance immediately.
- If not breathing, give artificial respiration, if breathing is difficult, give oxygen. Keep at rest.

SKIN CONTACT

- In case of contact, immediately flush skin with large amounts of water and soap while removing contaminated

clothing and shoes.
- If irritation persists, get medical attention.

EYE CONTACT
- Immediately flush eyes with large amounts of water until irritation subsides.
- Remove contact lens.
- Obtain medical attention, preferably by an ophthalmologist, immediately.

INGESTION
- DO NOT induce vomiting unless directed to do so by a medical personnel. Never give anything by mouth to an unconscious person. Keep at rest. Get medical attention immediately.

5. FIRE FIGHTING MEASURES

SUITABLE FIRE EXTINGUISHING MEDIA
- Water fog
- CO2
- Foam
- Dry chemicals
- Dry sand.

SPECIAL PROTECTIVE ACTIONS FOR FIRE FIGHTERS
- Wear full protective clothing and NIOSH - approved self - contained breathing apparatus.
- Use water spray to cool fire - exposed surfaces and to protect personnel. If a leak or spill has not ignited, use water spray to disperse the vapours.
- If possible, isolate product from heat, electrical equipments, sparks and open flames.
- Avoid spraying water directly into storage containers.
- Closed containers may explode when exposed to extreme heat.
- Avoid spreading burning liquid with water, isolate liquid.
- Do not allow runoff from fire fighting to enter drains or watercourses.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURE
- Wear appropriate protective equipment, e.g. respirators, eye protection, gloves and safety shoes.
- Avoid substance contact with eyes. Do not inhale vapours.
- Ensure supply of fresh air in enclosed rooms.

ENVIRONMENTAL PRECAUTIONS
- Eliminate sources of ignition.
- Keep public away.
- Contain spilled liquid with sand or other non-combustible absorbent materials.
- Wash area and prevent runoff into drains and sewerage system.
- Advise authorities if substance has entered a watercourse or sewer or has contaminated soil or vegetation.

METHODS AND MATERIALS FOR CONTAINMENTS AND CLEANING UP
- Clean up all spills immediately.
- Absorb spill with absorbent and inert material, then place in container.
- Disposal in accordance to local/national regulations.

7. HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING
- Use appropriate personal protective equipment.
- Keep out of reach of children.
- Handle containers with care. Open slowly in order to control possible pressure release.
- Do not pressurize containers.
- Do not ingest. Do not breathe in gas/fumes/vapour. Avoid contact with skin and eyes.
- For personal protection, see section 8.
- Use only in areas from which all naked lights and other sources of ignition have been excluded.
- Take precautionary measures against static discharge.
- Protect from frost and extremes of temperature.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILTIES
- Keep containers tightly closed.
- Containers that are opened should be properly resealed and kept upright to prevent leakage.

- Store in cool, dry and well - ventilated place at temperature between 20°C to 40°C away from heat and sources of ignition.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

CONTROL PARAMETERS/OCCUPATIONAL LIMITS

Substances	ACGIH TLV-TWA		OSHA PEL-TWA	
	ppm	mg/m3	ppm	mg/m3
Dicopper Oxide	-	-	-	-
Xylene	100	-	100	435.00
Quartz(Sio2)	-	0.03	-	0.10
Bis(1-hydroxy-1H-pyridine-2-thionato-O,S)copper	-	-	-	-
Ethylbenzene	20	-	100	435.00

APPROPRIATE ENGINEERING CONTROL MEASURES

- Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours below their respective occupational exposure limits.
- Ensure eyewash stations and safety showers are close to the workstation location.

PERSONAL PROTECTION

Respiratory Protection:	Use of NIOSH - approved respirators with organic vapour cartridges is recommended.
Hand Protection:	Use of solvent resistance type or chemical resistant type of protective gloves is recommended.
Eye Protection:	Use of safety glasses or goggles with side shields is recommended.
Skin / Body Protection:	Wear chemical resistant clothes and safety shoes when handling product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Liquid
Odour	:	Aromatic hydrocarbon odour
Odour threshold	:	Not available
pH	:	Not available
Melting point/freezing point	:	Not available
Initial boiling point and boiling range	:	Between 136 and 155 °C
Flash point	:	24 °C
Evaporation rate	:	Not available
Flammability (solid, gas)	:	Not applicable
Lower flammability or explosive limit	:	1 % by vol
Upper flammability or explosive limit	:	6.7 % by vol
Vapour pressure	:	Not available
Vapour density	:	> 1.00 (Vapour is heavier than air)
Specific gravity	:	1.73 - 1.79
Solubility	:	Not Miscible in water
Partition coefficient	:	Not available
Auto-ignition temperature	:	> 432 °C
Decomposition temperature	:	Not available
Viscosity	:	Not available

10. STABILITY AND REACTIVITY

Stability:	Stable under recommended storage and handing conditions (see section 7). When exposed to high temperature, may produce hazardous decomposition products such as carbon monoxide, carbon dioxide, oxides of nitrogen and smoke.
Hazardous reaction:	Hazardous reaction will not occur.
Condition to avoid:	Avoid heating temperatures above 40 deg.C.
Materials to avoid:	Keep away from oxidizing agents, strongly alkaline and strongly acid materials in order to avoid possible exothermic reactions.
Hazardous decomposition:	The products decomposed on heating producing their oxide or monomers.

11. TOXICOLOGICAL INFORMATION

There is no data available on the product itself.
Toxicological information of substances:

Acute oral toxicity
Harmful if swallowed

Substances	Oral LD50(Rat), mg/kg
Dicopper Oxide	470
Xylene	5000
Quartz(Sio2)	Data not available
Bis(1-hydroxy-1H-pyridine-2-thionato-O,S)copper	1075
Ethylbenzene	3500

Acute dermal/skin toxicity
May be harmful if in contact with skin

Substances	Dermal LD50 (Rabbit), mg/kg
Dicopper Oxide	2000
Xylene	4350
Quartz(Sio2)	Data not available
Bis(1-hydroxy-1H-pyridine-2-thionato-O,S)copper	2000
Ethylbenzene	15400

Acute inhalation toxicity
Vapour concentrations above the recommended exposure levels may be irritating to the eyes and the respiratory tract, may cause headaches and dizziness, could be anesthetic and may have other central nervous system effects.

Substances	Inhalation Vapor LC50 (Rat), mg/L/4hr
Dicopper Oxide	5
Xylene	8000
Quartz(Sio2)	Data not available
Bis(1-hydroxy-1H-pyridine-2-thionato-O,S)copper	Data not available
Ethylbenzene	17.2

Skin corrosion or irritation
Causes skin irritation. Frequent or prolonged contact may dry the skin, leading to discomfort and dermatitis

Serious eye damage or irritation
May be an eye irritant

Respiratory or skin sensitisation
Vapour concentrations above the recommended exposure levels may be irritating to the eyes and the respiratory tract

Germ cell mutagenicity
No information available on the product

Carcinogenicity

CrystQuartz(SiO2)

The International Agency for Research on Cancer (IARC) has classified Crystalline Silica as probably carcinogenic to humans (Group 1) based on limited evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals.

Ethylbenzene

The International Agency for Research on Cancer (IARC) has classified Ethylbenzene as possibly carcinogenic to humans (Group 2) based on inadequate evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals.

Reproductive toxicity
No information available on the product

Specific Target Organ Toxicity (STOT)-single exposure
No information available on the product

Specific Target Organ Toxicity (STOT)-repeated exposure

No information available on the product

Asphyxiation hazard
May be harmful if swallowed and enters airways

12. ECOLOGICAL INFORMATION

For spills or waste, take care to avoid contaminating environment.
Prevent spills and wastewater from entering sewers, water courses or law areas to avoid pollution.
There are no data available on the product itself. Ecological information of ingredients

Toxicity

Substances name	LC 50(fish) mg/l	Exposure hours	EC 50(for crustacea) mg/l	Exposure hours	Erc50(for algae or other aquatic plants) mg/l	Exposure hours
Ethylbenzene	4.2	96	N/A	N/A	N/A	N/A
Dicopper Oxide	0.0412	48	N/A	N/A	N/A	N/A
Xylene	10	48	N/A	N/A	N/A	N/A
Bis(1-hydroxy-1H-pyridine-2-thionato-O,S)copper	0.0032	96	N/A	N/A	N/A	N/A

Persistence and degradability
Biodegradation -No data available

Bioaccumulative potential
No data available

Mobility in soil
No data available

Result of PBT and vPvB assessment
No data available

Other adverse effects
There is no ecotoxicological test data available on the product itself.
The product should not be allowed to enter drains or water courses.

13. DISPOSAL CONSIDERATIONS

The product should not be allowed to enter drains and watercourses.
Preferred methods of waste disposal are incineration or biological treatment in federal/state approved facility. Empty containers should be recycled or disposed through an approved waste management facility or licensed contractor. All federal, state and local environmental regulations shall be observed.

14. TRANSPORT INFORMATION

Transport to be in accordance with ADR/RID for road/rail, IMDG for sea and IATA for Air.

LAND TRANSPORT
Classified as Dangerous Goods by the criteria of the European Agreement concerning the international carriage of Dangerous Goods (ADR) by Road & Regulations concerning the international carriage of Dangerous goods (RID) by Rail

UN Number:	1263
Proper shipping name:	PAINT (including paint, lacquer, enamel , stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)
Class:	Class 3
Packaging Group:	III

SEA TRANSPORT
Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport of Sea

UN Number:	1263
Proper shipping name:	PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)
Class:	Class 3
Packaging Group:	III
Marine Pollutant	Yes

SEA (ANNEX II OF MARPOL 73/78 AND THE IBC CODE)

Not applicable

AIR TRANSPORT

Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by Air

UN Number:	1263
Proper shipping name:	PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)
Class:	Class 3
Packaging Group:	III

15. REGULATORY INFORMATION

Applicable national regulations:

- Standards on Hazard communication for hazardous chemicals and dangerous goods
  - SS 586: Part 1: 2014-Transport and storage of dangerous goods
  - SS 586: Part 2: 2014-GHS of classification and labelling of chemicals
  - SS 586: Part 3: 2008(2014)-Preparation of safety data sheet
- MOM: Workplace Safety and Health Act & Workplace Safety and Health (General Provisions) Regulations
  - This product is subject to SDS, labelling, PEL and other requirements in the Acts/Regulations.
- NEA: Environmental Protection and Management Act & Environmental Protection and Management (Hazardous Substances) Regulations
  - This product is not subject to control under this Acts/Regulations.
- SCDF: Fire Safety Act & Fire Safety (Petroleum and Flammable Materials) Regulations
  - This product is subject to the requirement of this Acts/Regulations.
- SPF: The Arms and Explosive Act, the Arms and Explosives (Explosives) Rules, and the Arms and Explosives (Explosive Precursors) Rules
  - This product is not subject to the requirement of this Acts/Regulations.

16. OTHER INFORMATION

Previous Revision Date /Version No.: 07-10-2016 /01

Abbreviation
ACGIH American Conference of Governmental Industrial Hygienists
TLV Threshold limit value
TWA Time-Weighted Average
OSHA Occupational Safety and Health Administration
PEL Permissible Exposure Limit
LD50 Lethal Dose
LC50 Median lethal concentration
IACR International Agency for Research in Cancer

Disclaimer
To the best of our knowledge, the information contained herein is accurate. However, the information is provided without any representation or warranty, expressed or implied, regarding its accuracy or completeness. Since the conditions of handling, storage, use and disposal are beyond our control and may be beyond our knowledge, for this and other reasons, we make no guarantee of results and assume no liability for damages incurred by the use of this product. Please be reminded that all chemicals may present unknown health hazards and should be used with caution.

Revision date/version no: 16-10-2017/ 02

SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name:	ECOLOFLEX SPC 400 HYB LIGHT BROWN
Intended Use:	Paint
Manufacturer:	Nippon Paint (Singapore) Co Pte Ltd
Supplier:	Nippon Paint Marine (Singapore) Pte Ltd No. 1 First Lok Yang Road, Jurong Singapore 629728
Telephone Number:	+65 6268 1161 / +65 6265 5355 (Within Hours of Operation Mon- Fri: 0900-1700)
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2. HAZARDS IDENTIFICATION

Classification Code:

Flammable Hazard	Category 2
Acute Toxicity:	
- Oral	Category 4
- Inhalation	Category 3
Skin corrosion/irritation	Category 2
Serious eye damage/irritation	Category 1
Germ cell mutagenicity	Category 1
Carcinogenicity	Category 1
Specific target organ toxicity:	
- Single exposure	Category 2
- Repeated exposure	Category 1
Aquatic Acute	Category 1
Aquatic Chronic	Category 1

GHS Pictogram

Signal Word

Danger

Hazard statements

H225: Highly flammable liquid and vapour
H302: Harmful if swallowed
H315: Causes skin irritation
H318: Causes serious eye damage
H331: Toxic if inhaled
H340: May cause genetic defects
H350: May cause cancer
H371: May cause damage to organs
H372: Causes damage to organs through prolonged or repeated exposure
H400: Very toxic to aquatic life
H410: Very toxic to aquatic life with long lasting effects

Precautionary statements

P201: Obtain special instructions before use
P202: Do not handle until all safety precautions have been read and understood
P210: Keep away from heat/sparks/open flames/hot surfaces – No smoking
P233: Keep container tightly closed
P240: Ground/bond container and receiving equipment
P241: Use explosion-proof electrical/ventilating/light/equipment
P242: Use only non-sparking tools
P243: Take precautionary measures against static discharge
P260: Do not breathe dust/fume/gas/mist/vapours/spray
P261: Avoid breathing dust/fume/gas/mist/vapours/spray

P264: Wash hands thoroughly after handling
P270: Do not eat, drink or smoke when using this product
P271: Use only outdoors or in a well-ventilated area
P273: Avoid release to the environment
P280: Wear protective gloves/protective clothing/eye protection/face protection
P281: Use personal protective equipment as required

Response

P310: Immediately call a POISON CENTER or doctor/physician
P311: Call a POISON CENTER or doctor/physician
P314: Get medical advice/attention if you feel unwell
P321: Specific treatment (see Section 4 of SDS)
P330: Rinse mouth
P362: Take off contaminated clothing and wash before reuse
P391: Collect spillage
P301+312: IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
P302+352: IF ON SKIN: Wash with soap and water
P304+340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
P308+313: IF exposed or concerned: Get medical advice/attention
P309+311: IF exposed or you feel unwell: Call a POISON CENTER or doctor/physician
P332+313: If skin irritation occurs: Get medical advice/attention
P370+378: In case of fire: Use appropriate media for extinction
P303+361+353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower
P305+351+338: IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing

Storage

P405: Store locked up
P403+233: Store in a well ventilated place. Keep container tightly closed
P403+235: Store in a well ventilated place. Keep cool

Disposal

P501: Dispose of contents/container to appropriate waste site or reclaimer in accordance with local or national regulations

3. COMPOSITION / INFORMATION ON INGREDIENTS

Substance or Preparation: Preparation

Chemical nature:Acrylic resin paint

Substances	CAS No.	%
Dicopper Oxide	1317-39-1	20 - 50
Xylene	1330-20-7	10 - 25
Quartz(Sio2)	14808-60-7	1 - 10
Titanium Dioxide	13463-67-7	1 - 10
Bis(1-hydroxy-1H-pyridine-2-thionato-O,S)copper	14915-37-8	1 - 5
Polyvinylethylether	proprietary	1 - 5
Ethylbenzene	100-41-4	0.5 - 2.5
Diiron Trioxide	1309-37-1	0.5 - 1.5
Fatty Acid Amide	proprietary	0.1 - 1.0
Ethanol	64-17-5	0.1 - 0.5
		100%

4. FIRST-AID MEASURES

INHALATION

- Move person to fresh air and call for medical assistance immediately.
- If not breathing, give artificial respiration, if breathing is difficult, give oxygen. Keep at rest.

SKIN CONTACT

- In case of contact, immediately flush skin with large amounts of water and soap while removing contaminated

clothing and shoes.
- If irritation persists, get medical attention.

EYE CONTACT
- Immediately flush eyes with large amounts of water until irritation subsides.
- Remove contact lens.
- Obtain medical attention, preferably by an ophthalmologist, immediately.

INGESTION
- DO NOT induce vomiting unless directed to do so by a medical personnel. Never give anything by mouth to an unconscious person. Keep at rest. Get medical attention immediately.

5. FIRE FIGHTING MEASURES

SUITABLE FIRE EXTINGUISHING MEDIA
- Water fog
- CO2
- Foam
- Dry chemicals
- Dry sand.

SPECIAL PROTECTIVE ACTIONS FOR FIRE FIGHTERS
- Wear full protective clothing and NIOSH - approved self - contained breathing apparatus.
- Use water spray to cool fire - exposed surfaces and to protect personnel. If a leak or spill has not ignited, use water spray to disperse the vapours.
- If possible, isolate product from heat, electrical equipments, sparks and open flames.
- Avoid spraying water directly into storage containers.
- Closed containers may explode when exposed to extreme heat.
- Avoid spreading burning liquid with water, isolate liquid.
- Do not allow runoff from fire fighting to enter drains or watercourses.

6. ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURE
- Wear appropriate protective equipment, e.g. respirators, eye protection, gloves and safety shoes.
- Avoid substance contact with eyes. Do not inhale vapours.
- Ensure supply of fresh air in enclosed rooms.

ENVIRONMENTAL PRECAUTIONS
- Eliminate sources of ignition.
- Keep public away.
- Contain spilled liquid with sand or other non-combustible absorbent materials.
- Wash area and prevent runoff into drains and sewerage system.
- Advise authorities if substance has entered a watercourse or sewer or has contaminated soil or vegetation.

METHODS AND MATERIALS FOR CONTAINMENTS AND CLEANING UP
- Clean up all spills immediately.
- Absorb spill with absorbent and inert material, then place in container.
- Disposal in accordance to local/national regulations.

7. HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING
- Use appropriate personal protective equipment.
- Keep out of reach of children.
- Handle containers with care. Open slowly in order to control possible pressure release.
- Do not pressurize containers.
- Do not ingest. Do not breathe in gas/fumes/vapour. Avoid contact with skin and eyes.
- For personal protection, see section 8.
- Use only in areas from which all naked lights and other sources of ignition have been excluded.
- Take precautionary measures against static discharge.
- Protect from frost and extremes of temperature.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILTIES
- Keep containers tightly closed.
- Containers that are opened should be properly resealed and kept upright to prevent leakage.

- Store in cool, dry and well - ventilated place at temperature between 20°C to 40°C away from heat and sources of ignition.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

CONTROL PARAMETERS/OCCUPATIONAL LIMITS

Substances	ACGIH TLV-TWA		OSHA PEL-TWA	
	ppm	mg/m3	ppm	mg/m3
Dicopper Oxide	-	-	-	-
Xylene	100	-	100	435.00
Quartz(Sio2)	-	0.03	-	0.10
Bis(1-hydroxy-1H-pyridine-2-thionato-O,S)copper	-	-	-	-
Ethylbenzene	20	-	100	435.00

APPROPRIATE ENGINEERING CONTROL MEASURES

- Provide exhaust ventilation or other engineering controls to keep the airborne concentrations of vapours below their respective occupational exposure limits.
- Ensure eyewash stations and safety showers are close to the workstation location.

PERSONAL PROTECTION

Respiratory Protection:	Use of NIOSH - approved respirators with organic vapour cartridges is recommended.
Hand Protection:	Use of solvent resistance type or chemical resistant type of protective gloves is recommended.
Eye Protection:	Use of safety glasses or goggles with side shields is recommended.
Skin / Body Protection:	Wear chemical resistant clothes and safety shoes when handling product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	:	Liquid
Odour	:	Aromatic hydrocarbon odour
Odour threshold	:	Not available
pH	:	Not available
Melting point/freezing point	:	Not available
Initial boiling point and boiling range	:	Between 136 and 155 °C
Flash point	:	24 °C
Evaporation rate	:	Not available
Flammability (solid, gas)	:	Not applicable
Lower flammability or explosive limit	:	1 % by vol
Upper flammability or explosive limit	:	6.7 % by vol
Vapour pressure	:	Not available
Vapour density	:	> 1.00 (Vapour is heavier than air)
Specific gravity	:	1.72 - 1.78
Solubility	:	Not Miscible in water
Partition coefficient	:	Not available
Auto-ignition temperature	:	> 432 °C
Decomposition temperature	:	Not available
Viscosity	:	Not available

10. STABILITY AND REACTIVITY

Stability:	Stable under recommended storage and handing conditions (see section 7). When exposed to high temperature, may produce hazardous decomposition products such as carbon monoxide, carbon dioxide, oxides of nitrogen and smoke.
Hazardous reaction:	Hazardous reaction will not occur.
Condition to avoid:	Avoid heating temperatures above 40 deg.C.
Materials to avoid:	Keep away from oxidizing agents, strongly alkaline and strongly acid materials in order to avoid possible exothermic reactions.
Hazardous decomposition:	The products decomposed on heating producing their oxide or monomers.

11. TOXICOLOGICAL INFORMATION

There is no data available on the product itself.
Toxicological information of substances:

Acute oral toxicity
Harmful if swallowed

Substances	Oral LD50(Rat), mg/kg
Dicopper Oxide	470
Xylene	5000
Quartz(Sio2)	Data not available
Bis(1-hydroxy-1H-pyridine-2-thionato-O,S)copper	1075
Ethylbenzene	3500

Acute dermal/skin toxicity
May be harmful if in contact with skin

Substances	Dermal LD50 (Rabbit), mg/kg
Dicopper Oxide	2000
Xylene	4350
Quartz(Sio2)	Data not available
Bis(1-hydroxy-1H-pyridine-2-thionato-O,S)copper	2000
Ethylbenzene	15400

Acute inhalation toxicity
Vapour concentrations above the recommended exposure levels may be irritating to the eyes and the respiratory tract, may cause headaches and dizziness, could be anesthetic and may have other central nervous system effects.

Substances	Inhalation Vapor LC50 (Rat), mg/L/4hr
Dicopper Oxide	5
Xylene	8000
Quartz(Sio2)	Data not available
Bis(1-hydroxy-1H-pyridine-2-thionato-O,S)copper	Data not available
Ethylbenzene	17.2

Skin corrosion or irritation
Causes skin irritation. Frequent or prolonged contact may dry the skin, leading to discomfort and dermatitis

Serious eye damage or irritation
May be an eye irritant

Respiratory or skin sensitisation
Vapour concentrations above the recommended exposure levels may be irritating to the eyes and the respiratory tract

Germ cell mutagenicity
No information available on the product

Carcinogenicity

CrystQuartz(SiO2)

The International Agency for Research on Cancer (IARC) has classified Crystalline Silica as probably carcinogenic to humans (Group 1) based on limited evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals.

Ethylbenzene

The International Agency for Research on Cancer (IARC) has classified Ethylbenzene as possibly carcinogenic to humans (Group 2) based on inadequate evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals.

Reproductive toxicity
No information available on the product

Specific Target Organ Toxicity (STOT)-single exposure
No information available on the product

Specific Target Organ Toxicity (STOT)-repeated exposure

No information available on the product

Asphyxiation hazard
May be harmful if swallowed and enters airways

12. ECOLOGICAL INFORMATION

For spills or waste, take care to avoid contaminating environment.
Prevent spills and wastewater from entering sewers, water courses or law areas to avoid pollution.
There are no data available on the product itself. Ecological information of ingredients

Toxicity

Substances name	LC 50(fish) mg/l	Exposure hours	EC 50(for crustacea) mg/l	Exposure hours	Erc50(for algae or other aquatic plants) mg/l	Exposure hours
Ethylbenzene	4.2	96	N/A	N/A	N/A	N/A
Dicopper Oxide	0.0412	48	N/A	N/A	N/A	N/A
Xylene	10	48	N/A	N/A	N/A	N/A
Bis(1-hydroxy-1H-pyridine-2-thionato-O,S)copper	0.0032	96	N/A	N/A	N/A	N/A

Persistence and degradability
Biodegradation -No data available

Bioaccumulative potential
No data available

Mobility in soil
No data available

Result of PBT and vPvB assessment
No data available

Other adverse effects
There is no ecotoxicological test data available on the product itself.
The product should not be allowed to enter drains or water courses.

13. DISPOSAL CONSIDERATIONS

The product should not be allowed to enter drains and watercourses.
Preferred methods of waste disposal are incineration or biological treatment in federal/state approved facility. Empty containers should be recycled or disposed through an approved waste management facility or licensed contractor. All federal, state and local environmental regulations shall be observed.

14. TRANSPORT INFORMATION

Transport to be in accordance with ADR/RID for road/rail, IMDG for sea and IATA for Air.

LAND TRANSPORT
Classified as Dangerous Goods by the criteria of the European Agreement concerning the international carriage of Dangerous Goods (ADR) by Road & Regulations concerning the international carriage of Dangerous goods (RID) by Rail

UN Number:	1263
Proper shipping name:	PAINT (including paint, lacquer, enamel , stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)
Class:	Class 3
Packaging Group:	III

SEA TRANSPORT
Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport of Sea

UN Number:	1263
Proper shipping name:	PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)
Class:	Class 3
Packaging Group:	III
Marine Pollutant	Yes

SEA (ANNEX II OF MARPOL 73/78 AND THE IBC CODE)
Not applicable
AIR TRANSPORT
Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by Air

UN Number:	1263
Proper shipping name:	PAINT (including paint, lacquer, enamel, stain, shellac, varnish, polish, liquid filler and liquid lacquer base) or PAINT RELATED MATERIAL (including paint thinning or reducing compound)
Class:	Class 3
Packaging Group:	III

15. REGULATORY INFORMATION

Applicable national regulations:

- Standards on Hazard communication for hazardous chemicals and dangerous goods
  - SS 586: Part 1: 2014-Transport and storage of dangerous goods
  - SS 586: Part 2: 2014-GHS of classification and labelling of chemicals
  - SS 586: Part 3: 2008(2014)-Preparation of safety data sheet
- MOM: Workplace Safety and Health Act & Workplace Safety and Health (General Provisions) Regulations
  - This product is subject to SDS, labelling, PEL and other requirements in the Acts/Regulations.
- NEA: Environmental Protection and Management Act & Environmental Protection and Management (Hazardous Substances) Regulations
  - This product is not subject to control under this Acts/Regulations.
- SCDF: Fire Safety Act & Fire Safety (Petroleum and Flammable Materials) Regulations
  - This product is subject to the requirement of this Acts/Regulations.
- SPF: The Arms and Explosive Act, the Arms and Explosives (Explosives) Rules, and the Arms and Explosives (Explosive Precursors) Rules
  - This product is not subject to the requirement of this Acts/Regulations.

16. OTHER INFORMATION

Previous Revision Date /Version No.: 07-10-2016 /01

Abbreviation
ACGIH American Conference of Governmental Industrial Hygienists
TLV Threshold limit value
TWA Time-Weighted Average
OSHA Occupational Safety and Health Administration
PEL Permissible Exposure Limit
LD50 Lethal Dose
LC50 Median lethal concentration
IACR International Agency for Research in Cancer

Disclaimer
To the best of our knowledge, the information contained herein is accurate. However, the information is provided without any representation or warranty, expressed or implied, regarding its accuracy or completeness. Since the conditions of handling, storage, use and disposal are beyond our control and may be beyond our knowledge, for this and other reasons, we make no guarantee of results and assume no liability for damages incurred by the use of this product. Please be reminded that all chemicals may present unknown health hazards and should be used with caution.