SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: NOA PC 250 BUFF BASE
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
Skin corrosion/irritation Category 2
Serious eye damage/irritation Category 2
Skin sensitization Category 1
Germ cell mutagenicity Category 1
Carcinogenicity Category 1
Specific target organ toxicity:
- Single exposure Category 1
- Repeated exposure Category 1
Aquatic Chronic Category 2

GHS Pictogram

Signal Word
Danger

Hazard statements
H225: Highly flammable liquid and vapour
H315: Causes skin irritation
H317: May cause an allergic skin reaction
H319: Causes serious eye irritation
H340: May cause genetic defects
H350: May cause cancer
H370: Causes damage to organs
H372: Causes damage to organs through prolonged or repeated exposure
H411: 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
P272: Contaminated work clothing should not be allowed out of the workplace
P273: Avoid release to the environment
P280: Wear protective gloves/protective clothing/eye protection/face protection
P281: Use personal protective equipment as required
Response
P314: Get medical advice/attention if you feel unwell
P321: Specific treatment (see Section 4 of SDS)
P362: Take off contaminated clothing and wash before reuse
P363: Wash contaminated clothing before reuse
P391: Collect spillage
P302+352: IF ON SKIN: Wash with soap and water
P307+311: IF exposed: Call a POISON CENTER or doctor/physician
P308+313: IF exposed or concerned: Get medical advice/attention
P332+313: If skin irritation occurs: Get medical advice/attention
P333+313: If skin irritation or a rash occurs: Get medical advice/attention
P337+313: If eye irritation persists: 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+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: Epoxy resin paint

<table>
<thead>
<tr>
<th>Substances</th>
<th>CAS No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnesium Silicate Hydrate</td>
<td>14807-96-6</td>
<td>12.4 - 27.4</td>
</tr>
<tr>
<td>Poly(Bisphenol A-Co-Epichlorohydrin) Glycidyl End-Capped</td>
<td>25036-25-3</td>
<td>11.7 - 25.6</td>
</tr>
<tr>
<td>Xylene</td>
<td>1330-20-7</td>
<td>8.5 - 18.7</td>
</tr>
<tr>
<td>Propan-2-OI</td>
<td>67-63-0</td>
<td>2.6 - 5.6</td>
</tr>
<tr>
<td>4-Methylpentane-2-One, Iso Butyl Methyl Ketone</td>
<td>108-10-1</td>
<td>0.6 - 1.3</td>
</tr>
<tr>
<td>Substances determined to be non-hazardous</td>
<td>-</td>
<td>Balance</td>
</tr>
</tbody>
</table>

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

SUITEABLE 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.
- Take precautionary measures against static discharge.
- Protect from frost and extremes of temperature.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES
- 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

<table>
<thead>
<tr>
<th>Substances</th>
<th>ACGIH TLV-TWA</th>
<th>OSHA PEL-TWA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ppm</td>
<td>mg/m3</td>
</tr>
<tr>
<td>Magnesium Silicate Hydrate</td>
<td>-</td>
<td>2.00</td>
</tr>
<tr>
<td>Poly(Bispheon A-Co-Epichlorohydrin) Glycidyl End-Capped</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Xylene</td>
<td>100</td>
<td>-</td>
</tr>
<tr>
<td>Propan-2-OL</td>
<td>200</td>
<td>-</td>
</tr>
<tr>
<td>4-Methylpentane-2-One,Iso Butyl Methyl Ketone</td>
<td>20</td>
<td>-</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Liquid</td>
</tr>
<tr>
<td>Odour</td>
<td>Aromatic hydrocarbon odour</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>Not available</td>
</tr>
<tr>
<td>pH</td>
<td>Not available</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>Not available</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>Between 82 and 155 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>14 °C</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Lower flammability or explosive limit</td>
<td>2 % by vol</td>
</tr>
<tr>
<td>Upper flammability or explosive limit</td>
<td>12.7 % by vol</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapour density</td>
<td>&gt; 1.00 (Vapour is heavier than air)</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>1.45 - 1.55</td>
</tr>
<tr>
<td>Solubility</td>
<td>Not Miscible in water</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>Not available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>&gt; 399 °C</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not available</td>
</tr>
</tbody>
</table>

### 10. STABILITY AND REACTIVITY

Stability: Stable under recommended storage and handling 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

<table>
<thead>
<tr>
<th>Substances</th>
<th>Oral LD50(Rat), mg/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnesium Silicate Hydrate</td>
<td>Data not available</td>
</tr>
<tr>
<td>Poly(Bisphenol A-Co-Epichlorohydrin) Glycidyl End-Capped</td>
<td>Data not available</td>
</tr>
<tr>
<td>Xylene</td>
<td>5000</td>
</tr>
<tr>
<td>Propan-2-Oi</td>
<td>1870</td>
</tr>
<tr>
<td>4-Methylpentane-2-One, Iso Butyl Methyl Ketone</td>
<td>2080</td>
</tr>
</tbody>
</table>
Acute dermal/skin toxicity
May be harmful if in contact with skin

<table>
<thead>
<tr>
<th>Substances</th>
<th>Dermal LD50 (Rabbit), mg/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnesium Silicate Hydrate</td>
<td>Data not available</td>
</tr>
<tr>
<td>Poly(Bisphenol A-Co-Epichlorohydrin) Glycidyl End-Capped</td>
<td>Data not available</td>
</tr>
<tr>
<td>Xylene</td>
<td>4350</td>
</tr>
<tr>
<td>Propan-2-OI</td>
<td>2000</td>
</tr>
<tr>
<td>4-Methylpentane-2-One,Iso Butyl Methyl Ketone</td>
<td>16000</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Substances</th>
<th>Inhalation Vapor LC50 (Rat), mg/L/4hr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnesium Silicate Hydrate</td>
<td>Data not available</td>
</tr>
<tr>
<td>Poly(Bisphenol A-Co-Epichlorohydrin) Glycidyl End-Capped</td>
<td>Data not available</td>
</tr>
<tr>
<td>Xylene</td>
<td>8000</td>
</tr>
<tr>
<td>Propan-2-OI</td>
<td>72600</td>
</tr>
<tr>
<td>4-Methylpentane-2-One,Iso Butyl Methyl Ketone</td>
<td>8.2</td>
</tr>
</tbody>
</table>

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.

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

<table>
<thead>
<tr>
<th>Substances name</th>
<th>LC 50(fish) mg/l</th>
<th>Exposure hours</th>
<th>EC 50(for crustacea) mg/l</th>
<th>Exposure hours</th>
<th>Erc50(for algae or other aquatic plants) mg/l</th>
<th>Exposure hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylbenzene</td>
<td>4.2</td>
<td>96</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Xylene</td>
<td>10</td>
<td>48</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Substances name</td>
<td>LC 50(fish) mg/l</td>
<td>Exposure hours</td>
<td>EC 50(for crustacea) mg/l</td>
<td>Exposure hours</td>
<td>ErC50(for algae or other aquatic plants) mg/l</td>
<td>Exposure hours</td>
</tr>
<tr>
<td>-----------------</td>
<td>------------------</td>
<td>----------------</td>
<td>---------------------------</td>
<td>----------------</td>
<td>---------------------------------------------</td>
<td>----------------</td>
</tr>
<tr>
<td>Poly(Bisphenol A-Co-Epichlorohydrin) Glycidyl End-Capped</td>
<td>5</td>
<td>48</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**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: II

**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: II
- 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)
15. REGULATORY INFORMATION

Applicable national regulations:

- Standards on Hazard communication for hazardous chemicals and dangerous goods
- 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
cautions.
# SAFETY DATA SHEET

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</thead>
<tbody>
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<td>Intended Use:</td>
<td>Paint</td>
</tr>
<tr>
<td>Manufacturer:</td>
<td>Nippon Paint (Singapore) Co Pte Ltd</td>
</tr>
<tr>
<td>Supplier:</td>
<td>Nippon Paint Marine (Singapore) Pte Ltd</td>
</tr>
<tr>
<td>No. 1 First Lok Yang Road, Jurong Singapore 629728</td>
<td></td>
</tr>
<tr>
<td>Telephone Number:</td>
<td>+65 6268 1161 / +65 6265 5355</td>
</tr>
<tr>
<td>(Within Hours of Operation Mon- Fri: 0900-1700)</td>
<td></td>
</tr>
<tr>
<td>Facsimile Number:</td>
<td>+65 6268 1191 / +65 6264 1603</td>
</tr>
</tbody>
</table>

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### Classification Code:

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<tr>
<th>Flammable Hazard</th>
<th>Category 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin corrosion/irritation</td>
<td>Category 2</td>
</tr>
<tr>
<td>Serious eye damage/irritation</td>
<td>Category 2</td>
</tr>
<tr>
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<td>Category 1</td>
</tr>
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<td>Germ cell mutagenicity</td>
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</tr>
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</tr>
<tr>
<td>Specific target organ toxicity:</td>
<td></td>
</tr>
<tr>
<td>- Single exposure</td>
<td>Category 1</td>
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<td>Category 1</td>
</tr>
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<td>Aquatic Chronic</td>
<td>Category 2</td>
</tr>
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### GHS Pictogram

#### Signal Word

**Danger**

#### Hazard statements

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<td>11.7 - 25.8</td>
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<td>Magnesium Silicate Hydrate</td>
<td>14807-96-6</td>
<td>11.5 - 25.4</td>
</tr>
<tr>
<td>Xylene</td>
<td>1330-20-7</td>
<td>8.5 - 18.6</td>
</tr>
<tr>
<td>Propan-2-Ol</td>
<td>67-63-0</td>
<td>2.6 - 5.6</td>
</tr>
<tr>
<td>4-Methylpentane-2-One, Iso Butyl Methyl Ketone</td>
<td>108-10-1</td>
<td>0.6 - 1.3</td>
</tr>
<tr>
<td>Substances determined to be non-hazardous</td>
<td>-</td>
<td>Balance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100%</td>
</tr>
</tbody>
</table>

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

SUITEABLE 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.
- Take precautionary measures against static discharge.
- Protect from frost and extremes of temperature.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES
- 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

<table>
<thead>
<tr>
<th>Substances</th>
<th>ACGIH TLV-TWA</th>
<th>OSHA PEL-TWA</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>ppm</td>
<td>mg/m3</td>
</tr>
<tr>
<td>Poly(Bisphenol A-Co-Epichlorohydrin) Glycidyl End-Capped</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Magnesium Silicate Hydrate</td>
<td>-</td>
<td>2.00</td>
</tr>
<tr>
<td>Xylene</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Propan-2-OI</td>
<td>200</td>
<td>-</td>
</tr>
<tr>
<td>4-Methylpentane-2-One,Iso Butyl Methyl Ketone</td>
<td>20</td>
<td>50</td>
</tr>
</tbody>
</table>

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**

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Liquid</td>
</tr>
<tr>
<td>Odour</td>
<td>Aromatic hydrocarbon odour</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>Not available</td>
</tr>
<tr>
<td>pH</td>
<td>Not available</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>Not available</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>Between 82 and 155 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>14 °C</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Lower flammability or explosive limit</td>
<td>2 % by vol</td>
</tr>
<tr>
<td>Upper flammability or explosive limit</td>
<td>12.7 % by vol</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapour density</td>
<td>&gt; 1.00 (Vapour is heavier than air)</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>1.45 - 1.55</td>
</tr>
<tr>
<td>Solubility</td>
<td>Not Miscible in water</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>Not available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>&gt; 399 °C</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not available</td>
</tr>
</tbody>
</table>

10. **STABILITY AND REACTIVITY**

Stability: Stable under recommended storage and handling 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

<table>
<thead>
<tr>
<th>Substances</th>
<th>Oral LD50(Rat), mg/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poly[(Bisphenol A-Co-Epichlorohydrin) Glycidyl End-Capped]</td>
<td>Data not available</td>
</tr>
<tr>
<td>Magnesium Silicate Hydrate</td>
<td>Data not available</td>
</tr>
<tr>
<td>Xylene</td>
<td>5000</td>
</tr>
<tr>
<td>Propan-2-Ol</td>
<td>1870</td>
</tr>
<tr>
<td>4-Methylpentane-2-One, Iso Butyl Methyl Ketone</td>
<td>2080</td>
</tr>
</tbody>
</table>
Acute dermal/skin toxicity
May be harmful if in contact with skin

<table>
<thead>
<tr>
<th>Substances</th>
<th>Dermal LD50 (Rabbit), mg/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poly(Bisphenol A-Co-Epichlorohydrin) Glycidyl End-Capped</td>
<td>Data not available</td>
</tr>
<tr>
<td>Magnesium Silicate Hydrate</td>
<td>Data not available</td>
</tr>
<tr>
<td>Xylene</td>
<td>4350</td>
</tr>
<tr>
<td>Propan-2-OI</td>
<td>2000</td>
</tr>
<tr>
<td>4-Methylpentane-2-One, Iso Butyl Methyl Ketone</td>
<td>16000</td>
</tr>
</tbody>
</table>

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.

<table>
<thead>
<tr>
<th>Substances</th>
<th>Inhalation Vapor LC50 (Rat), mg/L/4hr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poly(Bisphenol A-Co-Epichlorohydrin) Glycidyl End-Capped</td>
<td>Data not available</td>
</tr>
<tr>
<td>Magnesium Silicate Hydrate</td>
<td>Data not available</td>
</tr>
<tr>
<td>Xylene</td>
<td>8000</td>
</tr>
<tr>
<td>Propan-2-OI</td>
<td>72600</td>
</tr>
<tr>
<td>4-Methylpentane-2-One, Iso Butyl Methyl Ketone</td>
<td>8.2</td>
</tr>
</tbody>
</table>

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.

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

Asphyxiations 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

<table>
<thead>
<tr>
<th>Substances name</th>
<th>LC 50(fish) mg/l</th>
<th>Exposure hours</th>
<th>EC 50(for crustacea) mg/l</th>
<th>Exposure hours</th>
<th>Erc50(for algae or other aquatic plants) mg/l</th>
<th>Exposure hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Substances name</td>
<td>LC 50(fish) mg/l</td>
<td>Exposure hours</td>
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<td>Exposure hours</td>
<td>ErC50(for algae or other aquatic plants) mg/l</td>
<td>Exposure hours</td>
</tr>
<tr>
<td>-----------------</td>
<td>------------------</td>
<td>----------------</td>
<td>---------------------------</td>
<td>---------------</td>
<td>-----------------------------------------------</td>
<td>---------------</td>
</tr>
<tr>
<td>Poly(Bisphenol A-Co-Epichlorohydrin) Glycidyl End-Capped</td>
<td>5</td>
<td>48</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**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: II

**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: II
- 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)
15. REGULATORY INFORMATION

Applicable national regulations:

- Standards on Hazard communication for hazardous chemicals and dangerous goods
- 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
cautions.
SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: NOA PC GRAY BASE
Intended Use: Paint
Manufacturer: Nippon Paint (Singapore) Co Pte Ltd
Supplier: Nippon Paint Marine (Singapore) Pte Ltd
Address: 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
- Skin corrosion/irritation: Category 2
- Serious eye damage/irritation: Category 2
- Skin sensitization: Category 1
- Germ cell mutagenicity: Category 1
- Carcinogenicity: Category 1
- Specific target organ toxicity:
  - Single exposure: Category 1
  - Repeated exposure: Category 1
- Aquatic Chronic: Category 2

GHS Pictogram

Signal Word
Danger

Hazard statements
H225: Highly flammable liquid and vapour
H315: Causes skin irritation
H317: May cause an allergic skin reaction
H319: Causes serious eye irritation
H340: May cause genetic defects
H350: May cause cancer
H370: Causes damage to organs
H372: Causes damage to organs through prolonged or repeated exposure
H411: 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
P272: Contaminated work clothing should not be allowed out of the workplace
P273: Avoid release to the environment
P280: Wear protective gloves/protective clothing/eye protection/face protection
P281: Use personal protective equipment as required
Response
P314: Get medical advice/attention if you feel unwell
P321: Specific treatment (see Section 4 of SDS)
P362: Take off contaminated clothing and wash before reuse
P363: Wash contaminated clothing before reuse
P391: Collect spillage
P302+352: IF ON SKIN: Wash with soap and water
P307+311: IF exposed: Call a POISON CENTER or doctor/physician
P308+313: IF exposed or concerned: Get medical advice/attention
P332+313: If skin irritation occurs: Get medical advice/attention
P333+313: If skin irritation or a rash occurs: Get medical advice/attention
P337+313: If eye irritation persists: 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+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:Epoxy resin paint

<table>
<thead>
<tr>
<th>Substances</th>
<th>CAS No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnesium Silicate Hydrate</td>
<td>14807-96-6</td>
<td>12.9 - 28.3</td>
</tr>
<tr>
<td>Poly(Bisphenol A-Co-Epichlorohydrin) Glycidyl End-Capped</td>
<td>25036-25-3</td>
<td>11.8 - 25.9</td>
</tr>
<tr>
<td>Xylene</td>
<td>1330-20-7</td>
<td>8.7 - 19.1</td>
</tr>
<tr>
<td>Propan-2-Ol</td>
<td>67-63-0</td>
<td>2.8 - 6.1</td>
</tr>
<tr>
<td>4-Methylpentane-2-One,Iso Butyl Methyl Ketone</td>
<td>108-10-1</td>
<td>0.8 - 1.8</td>
</tr>
<tr>
<td>Substances determined to be non-hazardous</td>
<td>-</td>
<td>Balance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100%</td>
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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

SUITSABLE 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.
- Take precautionary measures against static discharge.
- Protect from frost and extremes of temperature.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

- 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

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</tr>
</thead>
<tbody>
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<td></td>
<td>ppm</td>
<td>mg/m3</td>
</tr>
<tr>
<td>Magnesium Silicate Hydrate</td>
<td>-</td>
<td>2.00</td>
</tr>
<tr>
<td>Xylene</td>
<td>100</td>
<td>-</td>
</tr>
<tr>
<td>Poly(Bisphenol A-Co-Epichlorohydrin) Glycidyl End-Capped</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Propan-2-OI</td>
<td>200</td>
<td>260.00</td>
</tr>
<tr>
<td>4-Methylpentane-2-One, Iso Butyl Methyl Ketone</td>
<td>20</td>
<td>205.00</td>
</tr>
</tbody>
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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**

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<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Liquid</td>
</tr>
<tr>
<td>Odour</td>
<td>Aromatic hydrocarbon odour</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>Not available</td>
</tr>
<tr>
<td>pH</td>
<td>Not available</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>Not available</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>Between 82 and 155 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>14 °C</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Lower flammability or explosive limit</td>
<td>2 % by vol</td>
</tr>
<tr>
<td>Upper flammability or explosive limit</td>
<td>12.7 % by vol</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapour density</td>
<td>&gt; 1.00 (Vapour is heavier than air)</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>1.43 - 1.53</td>
</tr>
<tr>
<td>Solubility</td>
<td>Not Miscible in water</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>Not available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>&gt; 399 °C</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not available</td>
</tr>
</tbody>
</table>

---

**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

<table>
<thead>
<tr>
<th>Substances</th>
<th>Oral LD50(Rat), mg/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnesium Silicate Hydrate</td>
<td>Data not available</td>
</tr>
<tr>
<td>Poly(Bisphenol A-Co-Epichlorohydrin) Glycidyl End-Capped</td>
<td>Data not available</td>
</tr>
<tr>
<td>Xylene</td>
<td>5000</td>
</tr>
<tr>
<td>Propan-2-OI</td>
<td>1870</td>
</tr>
<tr>
<td>4-Methylpentane-2-One,Iso Butyl Methyl Ketone</td>
<td>2080</td>
</tr>
</tbody>
</table>
**Acute dermal/skin toxicity**
May be harmful if in contact with skin

<table>
<thead>
<tr>
<th>Substances</th>
<th>Dermal LD50 (Rabbit), mg/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnesium Silicate Hydrate</td>
<td>Data not available</td>
</tr>
<tr>
<td>Poly(Bisphenol A-Co-Epichlorohydrin) Glycidyl End-Capped</td>
<td>Data not available</td>
</tr>
<tr>
<td>Xylene</td>
<td>4350</td>
</tr>
<tr>
<td>Propan-2-OI</td>
<td>2000</td>
</tr>
<tr>
<td>4-Methylpentane-2-One, Iso Butyl Methyl Ketone</td>
<td>16000</td>
</tr>
</tbody>
</table>

**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.

<table>
<thead>
<tr>
<th>Substances</th>
<th>Inhalation Vapor LC50 (Rat), mg/L/4hr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Magnesium Silicate Hydrate</td>
<td>Data not available</td>
</tr>
<tr>
<td>Poly(Bisphenol A-Co-Epichlorohydrin) Glycidyl End-Capped</td>
<td>Data not available</td>
</tr>
<tr>
<td>Xylene</td>
<td>8000</td>
</tr>
<tr>
<td>Propan-2-OI</td>
<td>72600</td>
</tr>
<tr>
<td>4-Methylpentane-2-One, Iso Butyl Methyl Ketone</td>
<td>8.2</td>
</tr>
</tbody>
</table>

**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.

**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

<table>
<thead>
<tr>
<th>Substances name</th>
<th>LC 50(fish) mg/l</th>
<th>Exposure hours</th>
<th>EC 50(for crustacea) mg/l</th>
<th>Exposure hours</th>
<th>Erc50(for algae or other aquatic plants) mg/l</th>
<th>Exposure hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethylbenzene</td>
<td>4.2</td>
<td>96</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Xylene</td>
<td>10</td>
<td>48</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>
### Substances name

<table>
<thead>
<tr>
<th>Substances name</th>
<th>LC 50(fish) mg/l</th>
<th>Exposure hours</th>
<th>EC 50(for crustacea) mg/l</th>
<th>Exposure hours</th>
<th>Erc50(for algae or other aquatic plants) mg/l</th>
<th>Exposure hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poly(Bisphenol A-Co-Epichlorohydrin) Glycidyl End-Capped</td>
<td>5</td>
<td>48</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

### 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: II

#### 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: II
- 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)
15. REGULATORY INFORMATION

Applicable national regulations:

- Standards on Hazard communication for hazardous chemicals and dangerous goods
- 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.
SAFETY DATA SHEET

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: NOA PC HARDENER
Intended Use: Hardener for 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 3
Skin corrosion/irritation Category 2
Serious eye damage/irritation Category 2
Reproductive toxicity Category 1
Specific target organ toxicity:
- Single exposure Category 2
- Repeated exposure Category 1
Not classified as an environmental hazard under GHS criteria

GHS Pictogram

Signal Word
Danger
Hazard statements
H225: Highly flammable liquid and vapour
H301: Toxic if swallowed
H315: Causes skin irritation
H319: Causes serious eye irritation
H360: May damage fertility or the unborn child
H371: May cause damage to organs
H372: Causes damage to organs through prolonged or repeated exposure

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
P264: Wash hands thoroughly after handling
P270: Do not eat, drink or smoke when using this product
P280: Wear protective gloves/protective clothing/eye protection/face protection
P281: Use personal protective equipment as required

Response
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  
P301+310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician  
P302+352: IF ON SKIN: Wash with soap and water  
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  
P337+313: IF eye irritation persists: 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+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: Polyamideamine resin solution  

<table>
<thead>
<tr>
<th>Substances</th>
<th>CAS No.</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propan-2-Ol</td>
<td>67-63-0</td>
<td>5 - 15</td>
</tr>
<tr>
<td>Xylene</td>
<td>1330-20-7</td>
<td>5 - 15</td>
</tr>
<tr>
<td>Toluene</td>
<td>108-88-3</td>
<td>0.5 - 1.5</td>
</tr>
<tr>
<td>Substances determined to be non-hazardous</td>
<td>-</td>
<td>Balance</td>
</tr>
<tr>
<td></td>
<td></td>
<td>100%</td>
</tr>
</tbody>
</table>

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.
- Take precautionary measures against static discharge.
- Protect from frost and extremes of temperature.

CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES
- 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

<table>
<thead>
<tr>
<th>Substances</th>
<th>ACGIH TLV-TWA (ppm)</th>
<th>OSHA PEL-TWA (ppm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propan-2-Ol</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td>Xylene</td>
<td>100</td>
<td>100</td>
</tr>
<tr>
<td>Toluene</td>
<td>50</td>
<td>100</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Appearance</td>
<td>Liquid</td>
</tr>
<tr>
<td>Odour</td>
<td>Aromatic hydrocarbon odour</td>
</tr>
<tr>
<td>Odour threshold</td>
<td>Not available</td>
</tr>
<tr>
<td>pH</td>
<td>Not available</td>
</tr>
<tr>
<td>Melting point/freezing point</td>
<td>Not available</td>
</tr>
<tr>
<td>Initial boiling point and boiling range</td>
<td>Between 82 and 155 °C</td>
</tr>
<tr>
<td>Flash point</td>
<td>6 °C</td>
</tr>
<tr>
<td>Evaporation rate</td>
<td>Not available</td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not applicable</td>
</tr>
<tr>
<td>Lower flammability or explosive limit</td>
<td>2 % by vol</td>
</tr>
<tr>
<td>Upper flammability or explosive limit</td>
<td>12.7 % by vol</td>
</tr>
<tr>
<td>Vapour pressure</td>
<td>Not available</td>
</tr>
<tr>
<td>Vapour density</td>
<td>&gt; 1.00 (Vapour is heavier than air)</td>
</tr>
<tr>
<td>Specific gravity</td>
<td>0.92 - 0.96</td>
</tr>
<tr>
<td>Solubility</td>
<td>Not Miscible in water</td>
</tr>
<tr>
<td>Partition coefficient</td>
<td>Not available</td>
</tr>
<tr>
<td>Auto-ignition temperature</td>
<td>&gt; 287 °C</td>
</tr>
<tr>
<td>Decomposition temperature</td>
<td>Not available</td>
</tr>
<tr>
<td>Viscosity</td>
<td>Not available</td>
</tr>
</tbody>
</table>

10. STABILITY AND REACTIVITY

- **Stability:** Stable under recommended storage and handling 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

<table>
<thead>
<tr>
<th>Substances</th>
<th>Oral LD50 (Rat), mg/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propan-2-OI</td>
<td>1870</td>
</tr>
<tr>
<td>Xylene</td>
<td>5000</td>
</tr>
<tr>
<td>Toluene</td>
<td>2600</td>
</tr>
</tbody>
</table>

**Acute dermal/skin toxicity**

May be harmful if in contact with skin

<table>
<thead>
<tr>
<th>Substances</th>
<th>Dermal LD50 (Rabbit), mg/kg</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propan-2-OI</td>
<td>2000</td>
</tr>
<tr>
<td>Xylene</td>
<td>4350</td>
</tr>
<tr>
<td>Toluene</td>
<td>12000</td>
</tr>
</tbody>
</table>

**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.

<table>
<thead>
<tr>
<th>Substances</th>
<th>Inhalation Vapor LC50 (Rat), mg/L/4hr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Propan-2-OI</td>
<td>72600</td>
</tr>
</tbody>
</table>
Substances | Inhalation Vapor LC50 (Rat), mg/L/4hr
---|---
Xylene | 8000
Toluene | 12.5

**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**
No information available on the product

**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

<table>
<thead>
<tr>
<th>Substances name</th>
<th>LC 50(fish) mg/l</th>
<th>Exposure hours</th>
<th>EC 50(for crustacea) mg/l</th>
<th>Exposure hours</th>
<th>Erc50(for algae or other aquatic plants) mg/l</th>
<th>Exposure hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatty Acid, C18- Unsatd., Dimers, Polymer With Bisphenol A, Epichlorohydrin, Tall-Oil Fatty Acids, Tetraethylenepentamine and TETA</td>
<td>N/A</td>
<td>N/A</td>
<td>0.048</td>
<td>48</td>
<td>N/A</td>
<td>N/A</td>
</tr>
<tr>
<td>Xylene</td>
<td>10</td>
<td>48</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
</tr>
</tbody>
</table>

**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: 1993
Proper shipping name: Flammable Liquid N.O.S
Class: Class 3
Packaging Group: II

SEA TRANSPORT
Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport of Sea
UN Number: 1993
Proper shipping name: Flammable Liquid N.O.S
Class: Class 3
Packaging Group: II
Marine Pollutant: No

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: 1993
Proper shipping name: Flammable Liquid N.O.S
Class: Class 3
Packaging Group: II

15. REGULATORY INFORMATION

Applicable national regulations:
- Standards on Hazard communication for hazardous chemicals and dangerous goods
- 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.