



## SAFETY DATA SHEET

SDS Number: SDS-70404

Version No: 003

Revision Date/Version No:01-04-2020 /3/2.2.2

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### 1. IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

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Product Name:	HI-PON 80-03 EPOXY PHENOLIC PRIMER RED OXIDE
Intended Use:	Solvent-Based Protective Coating
Manufacturer:	Nippon Paint (S) Co. Pte Ltd No. 1 First Lok Yang Road Jurong Singapore 629728
Emergency Phone Number:	(65) 6 265 5355
Fax Numbers:	(65) 6 264 1603

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### 2. HAZARDS IDENTIFICATION

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#### GHS Classification:

##### Physical Hazard

Flammable Hazard Category 2

##### Health Hazard

Skin corrosion/irritation Category 2

Serious eye damage/irritation Category 1

Skin sensitization Category 1

##### Environmental Hazard

Not classified as an environmental hazard under GHS criteria

##### GHS Pictogram



##### Signal Word

Danger

##### Hazard statements

H225: Highly flammable liquid and vapour

H315: Causes skin irritation

H317: May cause an allergic skin reaction

H318: Causes serious eye damage

##### Precautionary statements

- 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  
 P261: Avoid breathing dust/fume/gas/mist/vapours/spray  
 P264: Wash hands thoroughly after handling  
 P272: Contaminated work clothing should not be allowed out of the workplace  
 P280: Wear protective gloves/protective clothing/eye protection/face protection

Response

- P310: Immediately call a POISON CENTER or doctor/physician  
 P321: Specific treatment (see Section 4 of SDS)  
 P362: Take off contaminated clothing and wash before reuse  
 P363: Wash contaminated clothing before reuse  
 P302+352: IF ON SKIN: Wash with soap and water  
 P332+313: If skin irritation occurs: Get medical advice/attention  
 P333+313: If skin irritation or a rash 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

- 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

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### 3. COMPOSITION / INFORMATION ON INGREDIENTS

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Substances	CAS No.	%
Bisphenol-A type solid epoxy resin	25036-25-3	6-14
Xylene	1330-20-7	5-12
Phenol-fomaldehyde novolac with epichlorohydrin	28064-14-4	5-11
Iron(III) oxide	1309-37-1	4-8
Methyl isobutyl ketone	108-10-1	2-5
1-Butanol	71-36-3	2-3
Substances determined to be non-hazardous	-	Balance
		100%

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### 4. FIRST-AID MEASURES

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**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.

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## **5. FIRE FIGHTING MEASURES**

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#### **SUITABLE FIRE EXTINGUISHING MEDIA**

- Alcohol - resistant foam, Carbon dioxide, or dry chemical type.

#### **SPECIFIC HAZARDS ARISING FROM THE CHEMICAL**

- Combustion products may include and are not limited to: Carbon monoxide and Carbon dioxide.

#### **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.

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## **6. ACCIDENTAL RELEASE MEASURES**

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#### **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.

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## 7. HANDLING AND STORAGE

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### 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 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 20oC to 40oC away from heat and sources of ignition

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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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### CONTROL PARAMETERS/OCCUPATIONAL LIMITS

Substances	ACGIH TLV-TWA		OSHA PEL-TWA	
	ppm	mg/m3	ppm	mg/m3
Bisphenol-A type solid epoxy resin	-	-	-	-
Xylene	100	434.00	-	-
Phenol-fomaldehyde novolac with epichlorohydrin	-	-	-	-
Iron(III) oxide	-	-	-	-
Methyl isobutyl ketone	50	-	-	-
1-Butanol	-	-	-	-

### 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.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

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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 80 and 175 °C
Flash point	: 13.3 °C
Evaporation rate	: Not available
Flammability (solid, gas)	: Not applicable
Lower flammability or explosive limit	: 0.8 % by vol
Upper flammability or explosive limit	: 16 % by vol
Vapour pressure	: Not available
Vapour density	: > 1.00 (Vapour is heavier than air)
Relative density	: Not available
Solubility	: Not Miscible in water
Partition coefficient	: Not available
Auto-ignition temperature	: > 515 °C
Decomposition temperature	: Not available
Viscosity	: 90 - 94 KU

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## 10. STABILITY AND REACTIVITY

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### REACTIVITY

- No dangerous reaction known under condition of normal use

### CHEMICAL STABILITY

- The product is stable under recommended storage and handling conditions. (see section7)

### POSSIBILITY OF HAZARDOUS REACTION

- Under normal conditions of storage and use, hazardous reaction will not occur

### CONDITIONS TO AVOID

- Keep away from oxidising agents, strongly alkaline and strongly acidic materials in order to avoid exothermic reactions. Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, drill, grind or expose containers to heat or sources of ignition

### HAZARDOUS DECOMPOSITION PRODUCTS

- When exposed to high temperatures may produce hazardous decomposition products such as carbon monoxide, carbon dioxide, oxides of nitrogen and smoke.

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## 11. TOXICOLOGICAL INFORMATION

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There is no data available on the product itself.

Toxicological information of substances:

### Acute oral toxicity

Harmful if swallowed

<u>Substances</u>	<u>Oral LD50(Rat), mg/kg</u>
Bisphenol-A type solid epoxy resin	2001
Xylene	4300

<u>Substances</u>	<u>Oral LD50(Rat), mg/kg</u>
Phenol-fomaldehyde novolac with epichlorohydrin	Data not available
Iron(III) oxide	Data not available
Methyl isobutyl ketone	2080
1-Butanol	790

**Acute dermal/skin toxicity**

May be harmful if in contact with skin

<u>Substances</u>	<u>Dermal LD50 (Rabbit), mg/kg</u>
Bisphenol-A type solid epoxy resin	2001
Xylene	1700
Phenol-fomaldehyde novolac with epichlorohydrin	Data not available
Iron(III) oxide	Data not available
Methyl isobutyl ketone	16000
1-Butanol	3400

**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.

<u>Substances</u>	<u>Inhalation Vapor LC50 (Rat), mg/L/4hr</u>
Bisphenol-A type solid epoxy resin	Data not available
Xylene	5000
Phenol-fomaldehyde novolac with epichlorohydrin	Data not available
Iron(III) oxide	Data not available
Methyl isobutyl ketone	16.4
1-Butanol	8000

**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**

Titanium Dioxide

The International Agency for Research on Cancer (IARC) has classified Titanium Dioxide as possibly carcinogenic to humans (Group 2B) 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

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**12. ECOLOGICAL INFORMATION**

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**Toxicity**

Aquatic toxicity -No data available

**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.

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**13. DISPOSAL CONSIDERATIONS**

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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.

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**14. TRANSPORT INFORMATION**

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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: 3

Subsidiary Risk(s): -

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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: 3

Subsidiary Risk(s): -

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: 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: 3

Subsidiary Risk(s): -

Packaging Group: II

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## 15. REGULATORY INFORMATION

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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.

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## 16. OTHER INFORMATION

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Revision Date/Version No.: 01-04-2020 /3/2.2.2

History



Previous Revision Date /Version No.: 29-12-2016 /3/2.1.1

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

IARC 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

SDS Number: SDS-70038

Version No: 003

Revision Date/Version No:01-04-2020 /3/1.2.2

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### 1. IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

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Product Name:	HI-PON 80-03 HARDENER
Intended Use:	Hardener for Paint
Manufacturer:	Nippon Paint (S) Co. Pte Ltd No. 1 First Lok Yang Road Jurong Singapore 629728
Emergency Phone Number:	(65) 6 265 5355
Fax Numbers:	(65) 6 264 1603

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### 2. HAZARDS IDENTIFICATION

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#### GHS Classification:

##### Physical Hazard

Flammable Hazard Category 3

##### Health Hazard

Acute Toxicity:	
- Oral	Category 4
Skin corrosion/irritation	Category 1
Serious eye damage/irritation	Category 1
Respiratory sensitization	Category 1
Skin sensitization	Category 1
Germ cell mutagenicity	Category 1
Carcinogenicity	Category 1

##### Environmental Hazard

Not classified as an environmental hazard under GHS criteria

##### GHS Pictogram



##### Signal Word

Danger

##### Hazard statements

H226: Flammable liquid and vapour

H302: Harmful if swallowed  
H314: Causes severe skin burns and eye damage  
H317: May cause an allergic skin reaction  
H318: Causes serious eye damage  
H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled  
H340: May cause genetic defects  
H350: May cause cancer

#### 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  
P280: Wear protective gloves/protective clothing/eye protection/face protection  
P281: Use personal protective equipment as required  
P285: In case of inadequate ventilation wear respiratory protection

#### Response

P310: Immediately call a POISON CENTER or doctor/physician  
P321: Specific treatment (see Section 4 of SDS)  
P330: Rinse mouth  
P363: Wash contaminated clothing before reuse  
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  
P304+341: IF INHALED: If breathing is difficult, 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  
P333+313: If skin irritation or a rash occurs: Get medical advice/attention  
P342+311: Call a POISON CENTER or doctor/physician  
P370+378: In case of fire: Use appropriate media for extinction  
P301+330+331: IF SWALLOWED: Rinse mouth. Do NOT induce vomiting  
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

Substances	CAS No.	%
Alkylated phenolic polyamine	68413-28-5	12-26
Alkylated phenolic polyamine	68413-29-6	12-26
Fatty acids, C18-unsatd., dimers, oligomeric reaction products with 4-4'-isopropylidenediphenol-1-chloro-2,3-epoxypropane co-oligomer, tall-oil fatty acids, tetraethylenepentamine and triethylenetetramine	106906-26-7	9-20
Cashew, nutshell liq., polymer with epichlorohydrin	68413-24-1	7-15
1-Butanol	71-36-3	2-4
Diethylenetriamine	111-40-0	2-4
Substances determined to be non-hazardous	-	Balance
		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

- Alcohol - resistant foam, Carbon dioxide, or dry chemical type.

#### SPECIFIC HAZARDS ARISING FROM THE CHEMICAL

- Combustion products may include and are not limited to: Carbon monoxide and Carbon dioxide.

#### 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.

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## 6. ACCIDENTAL RELEASE MEASURES

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### 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.

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## 7. HANDLING AND STORAGE

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### 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 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 20oC to 40oC away from heat and sources of ignition

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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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### CONTROL PARAMETERS/OCCUPATIONAL LIMITS

Substances	ACGIH TLV-TWA		OSHA PEL-TWA	
	ppm	mg/m3	ppm	mg/m3
Alkylated phenolic polyamine	-	-	-	-
Alkylated phenolic polyamine	-	-	-	-
Fatty acids, C18-unsatd., dimers, oligomeric reaction products with 4-4'-isopropylidenediphenol-1-chloro-2,3-epoxypropane co-oligomer, tall-oil fatty acids, tetraethylenepentamine and triethylenetetramine	-	-	-	-
Cashew, nutshell liq., polymer with epichlorohydrin	-	-	-	-
1-Butanol	-	-	-	-
Diethylenetriamine	1	4.20	1	4.00

**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 117 and 305 °C

Flash point : 35 °C

Evaporation rate : Not available

Flammability (solid, gas) : Not applicable

Lower flammability or explosive limit : 1.4 % by vol

Upper flammability or explosive limit : 11.2 % by vol

Vapour pressure : Not available

Vapour density : > 1.00 (Vapour is heavier than air)

Relative density : Not available

Solubility : Not Miscible in water

Partition coefficient : Not available

Auto-ignition temperature : > 715 °C

Decomposition temperature : Not available

Viscosity : 74.5 - 78.5 KU

**10. STABILITY AND REACTIVITY**

**REACTIVITY**

- No dangerous reaction known under condition of normal use

**CHEMICAL STABILITY**

- The product is stable under recommended storage and handling conditions. (see section7)

**POSSIBILITY OF HAZARDOUS REACTION**

- Under normal conditions of storage and use, hazardous reaction will not occur

**CONDITIONS TO AVOID**

- Keep away from oxidising agents, strongly alkaline and strongly acidic materials in order to avoid exothermic reactions. Avoid all possible sources of ignition (spark or flame). Do not pressurize, cut, weld, braze, drill, grind or expose containers to heat or sources of ignition

**HAZARDOUS DECOMPOSITION PRODUCTS**

- When exposed to high temperatures may produce hazardous decomposition products such as carbon monoxide, carbon dioxide, oxides of nitrogen and smoke.

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**11. TOXICOLOGICAL INFORMATION**


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There is no data available on the product itself.

Toxicological information of substances:

**Acute oral toxicity**

Harmful if swallowed

<u>Substances</u>	<u>Oral LD50(Rat), mg/kg</u>
Alkylated phenolic polyamine	Data not available
Alkylated phenolic polyamine	Data not available
Fatty acids, C18-unsatd., dimers, oligomeric reaction products with 4-4'-isopropylidenediphenol-1-chloro-2,3-epoxypropane co-oligomer, tall-oil fatty acids, tetraethylenepentamine and triethylenetetramine	Data not available
Cashew, nutshell liq., polymer with epichlorohydrin	Data not available
1-Butanol	790
Diethylenetriamine	Data not available

**Acute dermal/skin toxicity**

May be harmful if in contact with skin

<u>Substances</u>	<u>Dermal LD50 (Rabbit), mg/kg</u>
Alkylated phenolic polyamine	Data not available
Alkylated phenolic polyamine	Data not available
Fatty acids, C18-unsatd., dimers, oligomeric reaction products with 4-4'-isopropylidenediphenol-1-chloro-2,3-epoxypropane co-oligomer, tall-oil fatty acids, tetraethylenepentamine and triethylenetetramine	Data not available
Cashew, nutshell liq., polymer with epichlorohydrin	Data not available
1-Butanol	3400
Diethylenetriamine	Data not available

**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.

<u>Substances</u>	<u>Inhalation Vapor LC50 (Rat), mg/L/4hr</u>
Alkylated phenolic polyamine	Data not available
Alkylated phenolic polyamine	Data not available
Fatty acids, C18-unsatd., dimers, oligomeric reaction products with 4-4'-isopropylidenediphenol-1-chloro-2,3-epoxypropane co-oligomer, tall-oil fatty acids, tetraethylenepentamine and triethylenetetramine	Data not available
Cashew, nutshell liq., polymer with epichlorohydrin	Data not available
1-Butanol	8000
Diethylenetriamine	Data not available

**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

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## **12. ECOLOGICAL INFORMATION**

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**Toxicity**

Aquatic toxicity -No data available

**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.

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## **13. DISPOSAL CONSIDERATIONS**

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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.

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## **14. TRANSPORT INFORMATION**

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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: 3

Subsidiary Risk(s): -

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: 3

Subsidiary Risk(s): -

Packaging Group: III

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: 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: 3

Subsidiary Risk(s): -  
Packaging Group: III

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## 15. REGULATORY INFORMATION

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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.

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## 16. OTHER INFORMATION

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Revision Date/Version No.: 01-04-2020 /3/1.2.2

History

Previous Revision Date /Version No.: 23-08-2016 /3/1.1.1

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

IARC 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.