

Issued date : 31/03/08

Revision date : 01/12/16

Revision No.: 10

## 1. Identification of the substance/preparation and of the company/undertaking

**Product name** : VT-140 / VT-144 / VT-191V Rapid Steel 4 Minutes Epoxy (Part A)

**Product use** : Epoxy adhesive



**Company** : Vital Technical Sdn. Bhd.  
No. 93, Jalan Industri 3/3,  
Rawang Integrated Industrial Park,  
48000 Rawang, Selangor,  
Malaysia.

**Telephone** : +603 - 6092 0000  
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**Website** : http://www.vitaltechnical.com

## 2. Hazard(s) identification

**Substance/Mixture** : Mixture

**Hazard classification** : Skin Irrit.2  
Skin Sens.1  
Eye Irrit.2  
Aquatic Chronic 2

**Pictogram** : GHS07  Exclamation mark  
GHS09  Environment




**Signal word** : Warning

**Hazard statement(s):**

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H411	Toxic to aquatic life with long lasting effects.

**Precautionary statement(s):**

P261	Avoid breathing vapours.
P264	Wash hands thoroughly after handling.

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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.
P302+P352	IF ON SKIN: Wash with soap and water.
P305+P351+P338	IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.
P333+P313	If skin irritation or a rash occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P362	Take off contaminated clothing and wash before reuse.
P391	Collect spillage.

**Other hazards which do not result in classification but contribute to overall hazards:** None known

### 3. Composition/Information on ingredients

Chemical name	CAS No.	EINECS No.	%
Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)	25068-38-6	500-033-5	30 - 50
Oxirane, mono[(C <sub>12</sub> -C <sub>14</sub> -alkyloxy)methyl] derivatives	68609-97-2	271-846-8	1 - 10
Silicon dioxide	14808-60-7	238-878-4	50 - 70

### 4. First-aid measures

**In case of inhalation:**

Remove to fresh air, keep warm and at rest. Contact physician if symptom persists.

**In case of skin contact:**




Remove contaminated clothing. Rinse with copious amount of water and soap. Get medical advice if skin irritation or a rash occurs. Wash clothing before reuse.

**In case of eye contact:**

Contact lenses should be removed. Rinse with copious amount of water immediately. Seek medical advice if eye irritation develops and persists.

**In case of ingestion:**

DO NOT induce vomiting. Rinse mouth thoroughly with water. Get medical attention if symptom persists.

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**Personal protection equipment for first-aiders:**

Pay attention to any potential hazards and use recommended personal protection equipment if potential for exposure exists.

**Most important symptoms and effects, acute and delayed:**

Causes skin irritation and allergic skin reaction. Causes serious eye irritation.

## 5. Fire-fighting measures

**Suitable extinguishing media:**

Water, alcohol-resistant foam, carbon dioxide, dry chemical.

**Unsuitable extinguishing media:**

High volume water jet.

**Specific firefighting procedures:**

Remove undamaged containers from fire area if it is safe to do so. Use extinguishing media that is suitable to local circumstances and surrounding environment.

**Special person protection equipment for firefighters:**

NIOSH-approved self-contained breathing apparatus and full protective clothing must be worn in case of fire.

**Specific hazards arising from firefighting:**

Exposure to combustion products may be a hazard to health.

**Thermal decomposition products:**

Not limited to carbon monoxide, carbon dioxide, hydrogen sulphide, oxides of sulphur and barium fume.

## 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedure:**

Use recommended personal protective equipment. Keep unprotected persons away. Ensure adequate ventilation.

**Measure for cleaning/collecting:**

Wipe or soak with inert liquid binding material (sand, sawdust, etc). Scrape away cured material. Dispose the spilt material according to local or national regulations. Section 13 of this safety data sheet provides information regarding certain local or national requirements.

**Additional information:**

Prevent spillage from entering drainage/sewer systems. Spillages or uncontrolled discharges into watercourses must be IMMEDIATELY alerted to the Environmental Agency or other appropriate regulatory body.

## 7. Handling and storage

**Handling:**

Ensure good ventilation during processing. Do not eat, drink or smoke while handling.

**Storage:**

Keep containers and syringes tightly closed and dry. Store in a well-ventilated area, protected from direct sunlight and heat, with temperature below 30 °C. Keep away from incompatibles. Refer to section 10 for incompatible materials.

## 8. Exposure controls/personal protection

Components	CAS No.	Form of exposure (Value type)	Control Parameter	Basis
Silicon dioxide (respirable fraction)	14808-60-7	8 hours TWA	0.1 mg/m <sup>3</sup>	Malaysia OSHA
Silicon dioxide (total dust)	14808-60-7	8 hours TWA	30/(%silica+2)	US OSHA
Silicon dioxide (respirable dust)	14808-60-7	8 hours TWA	10/(%silica+2)	US OSHA
Silicon dioxide (respirable fraction)	14808-60-7	8 hours TWA	0.1 mg/m <sup>3</sup>	Safe Work Australia

**Engineering controls:**

Ensure adequate ventilation and minimise workplace exposure concentrations.

**Industrial hygiene:**

Remove immediately all contaminated clothing. Do not inhale dust. Wash hands and contaminated areas with water and soap before leaving the work site. Change clothing before leaving workplace and wash before reuse. Do not eat, drink, or smoke while using product.

**Hand protection:**

Suitable impervious protective gloves (latex, nitrile, etc.). Breakthrough time is not tested for this product. Change gloves often if possible.

**Respiratory protection:**




A NIOSH-approved respirator with filter for organic vapours is recommended where local ventilation is not adequate.

**Eye/Face protection:**

Protective goggles/safety glasses.

## 9. Physical and chemical properties

<b>Appearance</b>	: Thixotropic paste
<b>Odour</b>	: Mild odour
<b>Odour threshold</b>	: Not determined
<b>pH</b>	: Not applicable
<b>Freezing/Melting point</b>	: Not determined
<b>Boiling point range</b>	: Not applicable
<b>Flash point</b>	: Not applicable
<b>Evaporation rate</b>	: Not applicable
<b>Flammability</b>	: Not classified as flammable
<b>Explosive properties</b>	: Not classified as explosive
<b>Oxidising properties</b>	: Not classified as oxidising
<b>Vapour pressure</b>	: Not applicable
<b>Vapour density</b>	: Not applicable
<b>Relative density</b>	: 1.78
<b>Solubility in water</b>	: Not determined
<b>N-octanol/water</b>	
<b>partition coefficient</b>	: Not determined
<b>Decomposition temperature</b>	: Not determined

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**Viscosity** : 200,000 - 500,000 cPs

## 10. Stability and reactivity

### **Reactivity:**

No reactive hazards known.

### **Stability:**

Stable under recommended handling and storage conditions.

### **Conditions to avoid:**

Avoid temperatures above 300 °C. At 350 °C violent decomposition might occur and cause rapid pressure build-up.

### **Hazardous reactions:**

Will not occur by itself. Amine, amide, and mercaptan compounds will cause irreversible polymerisation.

### **Hazardous decomposition products:**

During normal storage, hazardous decomposition will not occur. At higher temperatures, decomposition products depends on the temperature, air supply and presence of other materials. Irritant gas and vapors will be produced.

### **Incompatible materials:**

Avoid unintended contact with amines, amides, mercaptans, oxidizing materials, acids and bases.

## 11. Toxicology information

No specific oral, inhalation or dermal toxicology data is known for this product. Any toxicological data included in this section is based on the data associated with the components.

### **Acute oral toxicity, LD<sub>50</sub> (rat):**

Not classified based on available information and/or concentration of components.

Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)	>15,000 mg/kg
Oxirane, mono[(C <sub>12</sub> -C <sub>14</sub> -alkyloxy)methyl] derivatives	26,800 mg/kg
Silicon dioxide	>3,300 mg/kg

### **Acute dermal toxicity, LD<sub>50</sub> (rabbit):**




Not classified based on available information and/or concentration of components.

Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)	>23,000 mg/kg
Oxirane, mono[(C <sub>12</sub> -C <sub>14</sub> -alkyloxy)methyl] derivatives	>4,000 mg/kg
Silicon dioxide	>5,000 mg/kg

### **Acute inhalation toxicity, LC<sub>50</sub> (4 hours, rat):**

Not classified based on available information and/or concentration of components.

Silicon dioxide	>2.08 mg/L
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**Serious eye damage/eye irritation:**

Classified as eye irritant.

Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight $\leq$ 700)	Causes eye irritation.
Oxirane, mono[(C <sub>12</sub> -C <sub>14</sub> -alkyloxy)methyl] derivatives	Causes slight irritation to eyes.
Silicon dioxide	Not eye irritant.

**Skin corrosion/skin irritation:**

Classified as skin irritant.

Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight $\leq$ 700)	Causes skin irritation.
Oxirane, mono[(C <sub>12</sub> -C <sub>14</sub> -alkyloxy)methyl] derivatives	Not skin irritant.
Silicon dioxide	Not skin irritant.

**Respiratory/Skin sensitisation:**

Not classified as respiratory sensitiser, but may cause an allergic skin reaction.

Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight $\leq$ 700)	Causes sensitisation on skin.
Oxirane, mono[(C <sub>12</sub> -C <sub>14</sub> -alkyloxy)methyl] derivatives	Causes sensitisation on skin.
Silicon dioxide	Not skin sensitiser.

**Germ cell mutagenicity:**

Not classified based on available information and/or concentration of components.

Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight $\leq$ 700)	Positive genotoxicity <i>in vitro</i> , but activity was eliminated by addition of metabolising enzyme. Negative genotoxicity <i>in vivo</i> .
Oxirane, mono[(C <sub>12</sub> -C <sub>14</sub> -alkyloxy)methyl] derivatives	Negative genotoxicity <i>in vitro</i> . Negative genotoxicity <i>in vivo</i> .
Silicon dioxide	Negative genotoxicity <i>in vitro</i> . Negative genotoxicity <i>in vivo</i> .

**Carcinogenicity:**




Not classified based on available information and/or concentration of components.

Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight $\leq$ 700)	No carcinogenic potential. NOAEL: 15 mg/kg bw/day
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**Reproductive toxicity:**

Not classified based on available information and/or concentration of components.

Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight $\leq$ 700)	No effect on fertility and foetal development.
Oxirane, mono[(C <sub>12</sub> -C <sub>14</sub> -alkyloxy)methyl] derivatives	No effect on fertility and foetal development. NOAEL: 100 mg/kg bw/day (fertility) NOAEL: 200 mg/kg bw/day (tetragenotoxicity)

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**Specific target organ toxicity – single exposure:**

Not classified based on available information and/or concentration of components.

**Specific target organ toxicity – repeated exposure:**

Not classified based on available information and/or concentration of components.

Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)	Exposure by dermal for 13 weeks on rats. NOEL: 1 mg/kg bw/day
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**Aspiration toxicity:**

Not classified based on available information and/or concentration of components.

**Likely route of administration:**

Inhalation, skin contact, and ingestion.

**Additional notes:**

This product contains trace residual quantities of epichlorohydrin (CAS no. 106-89-8; EC no. 203-439-8). It is very unlikely that normal work practices with it in this workplace would release it to the atmosphere. Nevertheless, you should be aware that epichlorohydrin has been reported to produce cancer in laboratory animals and to produce mutagenic changes in bacteria and cultured human cells.

## 12. Ecological information

Individual components of this mixture have been independently tested by the raw material suppliers and any known results have been presented below. The results for the individual components may not be representative of the ecological toxicity of this finished product. This finished product has not been tested to determine individual toxicological/ecological limits.

**Ecology toxicity:**

Toxic to aquatic life with long lasting effects.

Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700) Toxicity to fish Toxicity to crustacean Toxicity to algae or other aquatic plants	Exposure for 96 hours, LC <sub>50</sub> : 2.3 mg/L Exposure for 48 hours, EC <sub>50</sub> : 1.1 mg/L Exposure for 72 hours, EC <sub>50</sub> : 9.4 mg/L
Oxirane, mono[(C <sub>12</sub> -C <sub>14</sub> -alkyloxy)methyl] derivatives Toxicity to fish Toxicity to crustacean Toxicity to algae or other aquatic plants	Exposure for 96 hours, NOEC: >100 mg/L Exposure for 48 hours, EL <sub>50</sub> : 7.2 mg/L Exposure for 72 hours, NOEC: 844 mg/L

**Persistence and degradability:**




Not likely to be persistent based on available information and/or concentration of components.

Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)	No biodegradation observed, but significant hydrolysis observed. Exposure for 28 days, hydrolysis of >82%.
Oxirane, mono[(C <sub>12</sub> -C <sub>14</sub> -alkyloxy)methyl] derivatives	Readily biodegradable. Exposure for 28 days, 87% biodegradation.

**Bioaccumulative potential:**

No bioaccumulation potential based on available information and/or concentration of components..

Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight ≤ 700)	BCF: 31
Oxirane, mono[(C <sub>12</sub> -C <sub>14</sub> -alkyloxy)methyl] derivatives	Not expected to bioaccumulate in the food chain because it does not exceed the US EPA BCF criteria.

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**Mobility in soil:**

No data available.

### 13. Disposal information

**Waste treatment/disposal methods - unused products**

Should not be released into the environment. Classified as hazardous waste according to (national equivalent of EC-Dir. 91/689; disposal of toxic and hazardous waste). It must undergo special treatment, e.g. at suitable disposal site, to comply with local regulations. Use a registered waste disposal company and supply accurate information about the nature of the hazard.

Waste disposal number: 08 04 09\*

**Waste treatment/disposal methods - contaminated packaging**

Contaminated packaging is classified as hazardous waste. Empty containers should be transported/delivered using a registered waste carrier for local recycling or waste disposal. Fully drained containers which are drop- and scrape-free can be treated as industrial waste, and can possibly be recycled.

Waste disposal number: 15 01 10\*

### 14. Transport information

**Road transport (UNRTDG)**

UN number : UN3082  
 Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
 Technical name : Epoxy resin  
 Hazard class : 9  
 Classification code : M6  
 Packing group : PG III

**Marine transport (IMDG)**

UN number : UN3082  
 Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
 Technical name : Epoxy resin  
 Hazard class : 9  
 EmS : F-A, S-F  
 Packing group : PG III  
 Marine pollutant : No

**Air transport (IATA)**

UN number : UN3082  
 Proper shipping name : ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S.  
 Technical name : Epoxy resin  
 Hazard class : 9  
 Packing group : PG III




### 15. Regulatory information

**Safety, health, and environmental regulations specific for the hazardous chemical in question:**

Occupational Safety and Health (Use and Standards of Exposure of Chemicals Hazardous to Health) Regulations 2010 (Malaysia)

Occupational Safety and Health (Classification, Labelling, and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 (Malaysia)



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Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures (European Union)

Occupational Safety and Health Administration (OSHA) (2006) Air Contaminants. 29 CFR 1910.1000 (United States of America)

Work Health and Safety Act 2011 (Australia)

EH40/2005 Workplace exposure limits (United Kingdom)

**Chemical inventory status:**

Australia AICS : All ingredients listed or exempt.  
 Canada DSL : All ingredients listed or exempt.  
 China IECSC : All ingredients listed or exempt.  
 Korea KECI : All ingredients listed or exempt.  
 Philippines PICCS : All ingredients listed or exempt.  
 United States TCSA : All ingredients listed or exempt.

**16. Other information**

**Definitions:**

**TWA** : Time-weighted average.  
**STEL** : Short-term exposure level.  
**OSHA** : Occupational Safe and Health Act  
**WEL** : Workplace exposure limits  
**LD<sub>50</sub>** : The minimum dose required for lethal effects in 50% of a given population of test specimens.  
**ppm** : part per million  
**bw** : body weight  
**NOAEL** : No-observed-adverse-effect-level  
**NIOSH** : National Institute for Occupational Safety and Health.  
**UNRTDG** : United Nations Recommendations on the Transport of Dangerous Goods  
**IMDG** : International Maritime Dangerous Goods  
**IATA** : International Air Transport Association  
**AICS** : Australian Inventory of Chemical Substances  
**DSL** : Domestic Substance List  
**IECSC** : Inventory of Existing Chemical Substances in China.  
**KECI** : Korea Existing Chemicals Inventory.  
**HSNO** : Hazardous Substance and New Organisms  
**PICCS** : Philippines Inventory of Chemicals and Chemical Substances.  
**TSCA** : Toxic Substances Control Act.

All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee these are the only hazards that exist. The details contained herein are based on our present state of knowledge and experience in characterising our product with regard to any possible safety requirement at the date of its publication. We do, however, pass them on without any warranty or property assurances.

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## 1. Identification of the substance/preparation and of the company/undertaking

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**Product use** : Epoxy adhesive

**Company** : Vital Technical Sdn. Bhd.  
No. 93, Jalan Industri 3/3,  
Rawang Integrated Industrial Park,  
48000 Rawang, Selangor,  
Malaysia.

**Telephone** : +603 - 6092 0000  
**Fax** : +603 - 6092 0099  
**Email** : sales@vitaltechnical.com  
**Website** : http://www.vitaltechnical.com

## 2. Hazard(s) identification

**Substance/Mixture** : Mixture

**Hazard classification** : Skin Irrit.2  
Skin Sens.1  
Eye Irrit.2



**Pictogram** : GHS07 Exclamation mark




**Signal word** : Warning

### **Hazard statement(s):**

H315	Causes skin irritation.
H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.

### **Precautionary statement(s):**

P261	Avoid breathing vapours.
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.
P302+P352	IF ON SKIN: Wash with soap and water.
P305+P351+P338	IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.

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P333+P313	If skin irritation or a rash occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P362	Take off contaminated clothing and wash before reuse.

**Other hazards which do not result in classification but contribute to overall hazards:** None known

### 3. Composition/Information on ingredients

Chemical name	CAS No.	EINECS No.	%
2,4,6-tris(dimethylaminomethyl)phenol	90-72-2	202-013-9	1 - 10
Benzyl alcohol	100-51-6	202-859-9	1 - 10
Silicon dioxide	14808-60-7	238-878-4	50 - 70

### 4. First-aid measures

**In case of inhalation:**

Remove to fresh air, keep warm and at rest. Contact physician if symptom persists.

**In case of skin contact:**

Remove contaminated clothing. Rinse with copious amount of water and soap. Get medical advice if skin irritation or a rash occurs. Wash clothing before reuse.

**In case of eye contact:**

Contact lenses should be removed. Rinse with copious amount of water immediately. Seek medical advice if eye irritation develops and persists.

**In case of ingestion:**

DO NOT induce vomiting. Rinse mouth thoroughly with water. Get medical attention if a symptom persists.

**Personal protection equipment for first-aiders:**

Pay attention to any potential hazards and use recommended personal protection equipment if potential for exposure exists.

**Most important symptoms and effects, acute and delayed:**




May cause skin irritation and allergic skin reaction. Causes serious eye irritation.

### 5. Fire-fighting measures

**Suitable extinguishing media:**

Water, alcohol-resistant foam, carbon dioxide, dry chemical.

**Unsuitable extinguishing media:**

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None known.

**Specific firefighting procedures:**

Remove undamaged containers from fire area if it is safe to do so. Use extinguishing media that is suitable to local circumstances and surrounding environment.

**Special person protection equipment for firefighters:**

NIOSH-approved self-contained breathing apparatus and full protective clothing must be worn in case of fire.

**Specific hazards arising from firefighting:**

Exposure to combustion products may be a hazard to health.

**Thermal decomposition products:**

Not limited to carbon monoxide, carbon dioxide, hydrogen sulphide, oxides of sulphur and barium fume.

## 6. Accidental release measures

**Personal precautions, protective equipment and emergency procedure:**

Use recommended personal protective equipment. Keep unprotected persons away. Ensure adequate ventilation.

**Measure for cleaning/collecting:**

Wipe or soak with inert liquid binding material (sand, sawdust, etc.). Scrape away cured material. Dispose the spilt material according to local or national regulations. Section 13 of this safety data sheet provides information regarding certain local or national requirements.

**Additional information:**

Prevent spillage from entering drainage/sewer systems. Spillages or uncontrolled discharges into watercourses must be IMMEDIATELY alerted to the Environmental Agency or other appropriate regulatory body.

## 7. Handling and storage

**Handling:**




Ensure good ventilation during processing. Do not eat, drink or smoke while handling.

**Storage:**

Keep containers and syringes tightly closed and dry. Store in a well-ventilated area, protected from direct sunlight and heat, with temperature below 30 °C. Keep away from incompatibles. Refer to section 10 for incompatible materials.

## 8. Exposure controls/personal protection

Components	CAS No.	Form of exposure (Value type)	Control Parameter	Basis
Silicon dioxide (respirable fraction)	14808-60-7	8 hours TWA	0.1 mg/m <sup>3</sup>	Malaysia OSHA
Silicon dioxide (total dust)	14808-60-7	8 hours TWA	30/(%silica+2)	US OSHA
Silicon dioxide (respirable dust)	14808-60-7	8 hours TWA	10/(%silica+2)	US OSHA
Silicon dioxide (respirable fraction)	14808-60-7	8 hours TWA	0.1 mg/m <sup>3</sup>	Safe Work Australia

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**Engineering controls:**

Product curing may form hazardous compounds. Ensure adequate ventilation and minimise workplace exposure concentrations.

**Industrial hygiene:**

Remove immediately all contaminated clothing. Do not inhale vapour. Wash hands and contaminated areas with water and soap before leaving the work site. Change clothing before leaving workplace and wash before reuse. Do not eat, drink, or smoke while using product.

**Hand protection:**

Suitable impervious protective gloves (latex, nitrile, etc.). Breakthrough time is not tested for this product. Change gloves often if possible.

**Respiratory protection:**

A NIOSH-approved respirator with filter for organic vapours is recommended where local ventilation is not adequate.

**Eye/Face protection:**

Protective goggles/safety glasses.

## 9. Physical and chemical properties

<b>Appearance</b>	: Thixotropic paste
<b>Odour</b>	: Slight unique odour
<b>Odour threshold</b>	: Not determined
<b>pH</b>	: Not applicable
<b>Freezing/Melting point</b>	: Not determined
<b>Boiling point range</b>	: Not applicable
<b>Flash point</b>	: Not applicable
<b>Evaporation rate</b>	: Not applicable
<b>Flammability</b>	: Not classified as flammable
<b>Explosive properties</b>	: Not classified as explosive
<b>Oxidising properties</b>	: Not classified as oxidising
<b>Vapour pressure</b>	: Not applicable
<b>Vapour density</b>	: Not applicable
<b>Relative density</b>	: 1.74
<b>Solubility in water</b>	: Not determined
<b>N-octanol/water partition coefficient</b>	: Not determined
<b>Decomposition temperature</b>	: Not determined
<b>Viscosity</b>	: 200,000 - 500,000 cPs

## 10. Stability and reactivity

**Reactivity:**

No reactive hazards known.

**Stability:**




Stable under recommended handling and storage conditions.

**Conditions to avoid:**

None known.

**Hazardous reactions:**

Will not occur by itself.

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**Hazardous decomposition products:**

During normal storage, hazardous decomposition will not occur. At higher temperatures, decomposition products depends on the temperature, air supply and presence of other materials. Irritant gas and vapors will be produced.

**Incompatible materials:**

Avoid contact with oxidizing materials, acids and bases.

## 11. Toxicology information

No specific oral, inhalation or dermal toxicology data is known for this product. Any toxicological data included in this section is based on the data associated with the components.

**Acute oral toxicity, LD<sub>50</sub> (rat):**

Not classified based on available information and/or concentration of components.

2,4,6-tris(dimethylaminomethyl)phenol	2,169 mg/kg
Benzyl alcohol	1,620 mg/kg
Silicon dioxide	>3,300 mg/kg

**Acute dermal toxicity, LD<sub>50</sub> (rabbit):**

Not classified based on available information and/or concentration of components.

2,4,6-tris(dimethylaminomethyl)phenol	>980 mg/kg
Benzyl alcohol	>2,000 mg/kg
Silicon dioxide	>5,000 mg/kg

**Acute inhalation toxicity, LC<sub>50</sub> (4 hours, rat):**

Not classified based on available information and/or concentration of components.

Benzyl alcohol	4.178 mg/L
Silicon dioxide	2.08 mg/L




**Serious eye damage/eye irritation:**

Classified as eye irritant.

2,4,6-tris(dimethylaminomethyl)phenol	Causes serious eye damage.
Benzyl alcohol	Not eye irritant.
Silicon dioxide	Not eye irritant.

**Skin corrosion/skin irritation:**

Classified as skin irritant.

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2,4,6-tris(dimethylaminomethyl)phenol	Causes skin corrosion.
Benzyl alcohol	Not skin irritant.
Silicon dioxide	Not skin irritant.

**Respiratory/Skin sensitisation:**

Not classified as respiratory sensitiser, but may cause an allergic skin reaction.

2,4,6-tris(dimethylaminomethyl)phenol	Causes skin sensitisation.
Benzyl alcohol	Not skin sensitising.
Silicon dioxide	Not skin sensitising.

**Germ cell mutagenicity:**

Not classified based on available information and/or concentration of components.

2,4,6-tris(dimethylaminomethyl)phenol	Negative genotoxicity <i>in vitro</i> .
Benzyl alcohol	Negative genotoxicity <i>in vitro</i> .
Silicon dioxide	Negative genotoxicity <i>in vitro</i> . Negative genotoxicity <i>in vivo</i> .

**Carcinogenicity:**

Not classified based on available information and/or concentration of components.

Benzyl alcohol	Negative carcinogenicity activity.
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**Reproductive toxicity:**

Not classified based on available information and/or concentration of components.

2,4,6-tris(dimethylaminomethyl)phenol	No effect on fertility and foetal development. NOEL: 15 mg/kg bw/day (fertility)
Benzyl alcohol	No effect on fertility and foetal development.




**Specific target organ toxicity – single exposure:**

Not classified based on available information and/or concentration of components.

**Specific target organ toxicity – repeated exposure:**

Not classified based on available information and/or concentration of components.

2,4,6-tris(dimethylaminomethyl)phenol	Exposure by oral for 54 days on rats. NOEL: 15 mg/kg bw/day
	Exposure by dermal for 4 weeks on rats. NOEL: 5 mg/kg bw/day
Benzyl alcohol	Exposure by oral on rats for 103 weeks. NOAEL: 400 mg/kg bw/day

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Exposure by inhalation on rats for 4 weeks. NOAEC: 1,072 mg/m <sup>3</sup>
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**Aspiration toxicity:**

Not classified based on available information and/or concentration of components.

**Likely route of administration:**

Inhalation, skin contact, and ingestion.

## 12. Ecological information

Individual components of this mixture have been independently tested by the raw material suppliers and any known results have been presented below. The results for the individual components may not be representative of the ecological toxicity of this finished product. This finished product has not been tested to determine individual toxicological/ecological limits.

**Ecology toxicity:**

No adverse effect on aquatic organisms is predicted based on available information and/or concentration of components.

2,4,6-tris(dimethylaminomethyl)phenol Toxicity to fish Toxicity to crustacean Toxicity to algae or other aquatic plants	Exposure for 96 hours, LC <sub>50</sub> : 180 - 240 mg/L Exposure for 96 hours, LC <sub>50</sub> : 718 mg/L Exposure for 72 hours, EC <sub>50</sub> : 84 mg/L
Benzyl alcohol Toxicity to fish Toxicity to crustacean Toxicity to algae or other aquatic plants	Exposure for 96 hours, LC <sub>50</sub> : 460 mg/L Exposure for 48 hours, LC <sub>50</sub> : 230 mg/L Exposure for 72 hours, EC <sub>50</sub> : 770 mg/L

**Persistence and degradability:**

Not likely to be persistent based on available information and/or concentration of components.

2,4,6-tris(dimethylaminomethyl)phenol	Not readily biodegradable. Exposure for 28 days, 4% biodegradation.
Benzyl alcohol	Readily biodegradable. Exposure for 14 days, 92 - 96% biodegradation.

**Bioaccumulative potential:**

No bioaccumulation potential based on available information and/or concentration of components.

**Mobility in soil:**

No data available.

## 13. Disposal information




**Waste treatment/disposal methods - unused products**

Waste disposal must be in compliance with environmental protection requirements and local regulations.

**Waste treatment/disposal methods - contaminated packaging**

Dispose of as unused product. Empty container should be taken to an approved waste handling site for recycling or disposal.



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## 14. Transport information

**Road transport (UNRTDG)** : Not regulated as dangerous goods.  
**UN number** : Not applicable  
**Proper shipping name** : Not applicable  
**Technical name** : Not applicable  
**Hazard class** : Not applicable  
**Classification code** : Not applicable  
**Packing group** : Not applicable

**Marine transport (IMDG)** : Not regulated as dangerous goods.  
**UN number** : Not applicable  
**Proper shipping name** : Not applicable  
**Technical name** : Not applicable  
**Hazard class** : Not applicable  
**EmS** : Not applicable  
**Packing group** : Not applicable  
**Marine pollutant** : Not applicable

**Air transport (IATA)** :  
**UN number** : UN3334  
**Proper shipping name** : AVIATION REGULATED LIQUID N.O.S.  
**Technical name** : Polymercaptan  
**Hazard class** : 9  
**Packing group** : Not applicable

## 15. Regulatory information

**Safety, health, and environmental regulations specific for the hazardous chemical in question:**  
Occupational Safety and Health (Use and Standards of Exposure of Chemicals Hazardous to Health) Regulations 2010 (Malaysia)

Occupational Safety and Health (Classification, Labelling, and Safety Data Sheet of Hazardous Chemicals) Regulations 2013 (Malaysia)

Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures (European Union)




Occupational Safety and Health Administration (OSHA) (2006) Air Contaminants. 29 CFR 1910.1000 (United States of America)

Work Health and Safety Act 2011 (Australia)

EH40/2005 Workplace exposure limits (United Kingdom)

**Chemical inventory status:**

Australia AICS : All ingredients listed or exempt.  
Canada DSL : All ingredients listed or exempt.  
China IECSC : All ingredients listed or exempt.  
Korea KECI : All ingredients listed or exempt.  
Philippines PICCS : All ingredients listed or exempt.  
United States TCSA : All ingredients listed or exempt.

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## 16. Other information

### Definitions:

<b>TWA</b>	: Time-weighted average.
<b>STEL</b>	: Short-term exposure level.
<b>OSHA</b>	: Occupational Safe and Health Act
<b>WEL</b>	: Workplace exposure limits
<b>LD<sub>50</sub></b>	: The minimum dose required for lethal effects in 50% of a given population of test specimens.
<b>ppm</b>	: part per million
<b>bw</b>	: body weight
<b>NOAEL</b>	: No-observed-adverse-effect-level
<b>NIOSH</b>	: National Institute for Occupational Safety and Health.
<b>UNRTDG</b>	: United Nations Recommendations on the Transport of Dangerous Goods
<b>IMDG</b>	: International Maritime Dangerous Goods
<b>IATA</b>	: International Air Transport Association
<b>AICS</b>	: Australian Inventory of Chemical Substances
<b>DSL</b>	: Domestic Substance List
<b>IECSC</b>	: Inventory of Existing Chemical Substances in China.
<b>KECI</b>	: Korea Existing Chemicals Inventory.
<b>HSNO</b>	: Hazardous Substance and New Organisms
<b>PICCS</b>	: Philippines Inventory of Chemicals and Chemical Substances.
<b>TSCA</b>	: Toxic Substances Control Act.

All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee these are the only hazards that exist. The details contained herein are based on our present state of knowledge and experience in characterising our product with regard to any possible safety requirement at the date of its publication. We do, however, pass them on without any warranty or property assurances.