

**BOSSIL TECHNOLOGY SDN. BHD.****Safety Data Sheet****BS-8510
All Purpose Structural Epoxy**

Issued date: 27/12/16

Revision date : -

Revision No.: 0

1. Identification of the substance/preparation and of the company/undertaking**Product name** : BS-8510 All Purpose Structural Epoxy (Part A)**Product use** : Epoxy adhesive**Company** : Bossil Technology Sdn. Bhd.
22A-1, Jalan Tasik Utama 10,
The Trillium @ Lake Fields,
Sg. Besi, 57000 Kuala Lumpur,
Malaysia.**Telephone** : +6016 - 2119190**Fax** : -**Email** : sales@bossil.com**Website** : www.bossil.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.

**BOSSIL TECHNOLOGY SDN. BHD.****Safety Data Sheet****BS-8510
All Purpose Structural Epoxy**

Issued date: 27/12/16

Revision date : -

Revision No.: 0

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.

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 \leq 700)	25068-38-6	500-033-5	30 - 50
Oxirane, mono[(C ₁₂ -C ₁₄ -alkyloxy)methyl] derivatives	68609-97-2	271-846-8	1 - 10
Limestone	1317-65-3	215-279-6	30 - 50

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.

Personal protection equipment for first-aiders:

**BOSSIL TECHNOLOGY SDN. BHD.****Safety Data Sheet****BS-8510
All Purpose Structural Epoxy**

Issued date: 27/12/16

Revision date : -

Revision No.: 0

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

**BOSSIL TECHNOLOGY SDN. BHD.****Safety Data Sheet****BS-8510
All Purpose Structural Epoxy**

Issued date: 27/12/16

Revision date : -

Revision No.: 0

Components	CAS No.	Form of exposure (Value type)	Control Parameter	Basis
Limestone	1317-62-3	8 hours TWA (Particulate matter containing no asbestos and <1% crystalline silica)	10 mg/m ³	Malaysia OSHA
Limestone (total dust)	1317-62-3	8 hours TWA	10 mg/m ³	US OSHA
Limestone (respirable fraction)	1317-62-3	8 hours TWA	5 mg/m ³	US OSHA
Limestone (inhalable dust)	1317-62-3	8 hours TWA	10 mg/m ³	UK WEL
Limestone (respirable dust)	1317-62-3	8 hours TWA	4 mg/m ³	UK WEL
Limestone	1317-62-3	8 hours TWA (Particulate matter containing no asbestos and <1% crystalline silica)	10 mg/m ³	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

Appearance	: Thixotropic paste
Odour	: Mild odour
Odour threshold	: Not determined
pH	: Not applicable
Freezing/Melting point	: Not determined
Boiling point range	: Not applicable
Flash point	: Not applicable
Evaporation rate	: Not applicable
Flammability	: Not classified as flammable
Explosive properties	: Not classified as explosive

**BOSSIL TECHNOLOGY SDN. BHD.****Safety Data Sheet****BS-8510
All Purpose Structural Epoxy**

Issued date: 27/12/16

Revision date : -

Revision No.: 0

Oxidising properties	: Not classified as oxidising
Vapour pressure	: Not applicable
Vapour density	: Not applicable
Relative density	: Approx. 1.85
Solubility in water	: Not determined
N-octanol/water partition coefficient	: Not determined
Decomposition temperature	: Not determined
Viscosity	: 300,000 - 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, LD₅₀ (rat):

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

Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight \leq 700)	>15,000 mg/kg
Oxirane, mono[(C ₁₂ -C ₁₄ -alkyloxy)methyl] derivatives	26,800 mg/kg
Limestone	>2,000 mg/kg

Acute dermal toxicity, LD₅₀ (rabbit):

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

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

**BOSSIL TECHNOLOGY SDN. BHD.****Safety Data Sheet****BS-8510
All Purpose Structural Epoxy**

Issued date: 27/12/16

Revision date : -

Revision No.: 0

Acute inhalation toxicity, LC₅₀ (4 hours, rat):

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

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 ₁₂ -C ₁₄ -alkyloxy)methyl] derivatives	Causes slight irritation to eyes.
Limestone	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 ₁₂ -C ₁₄ -alkyloxy)methyl] derivatives	Not skin irritant.
Limestone	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 ₁₂ -C ₁₄ -alkyloxy)methyl] derivatives	Causes sensitisation on skin.
Limestone	Not sensitising on skin.

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 ₁₂ -C ₁₄ -alkyloxy)methyl] derivatives	Negative genotoxicity <i>in vitro</i> . Negative genotoxicity <i>in vivo</i> .
Limestone	Negative genotoxicity <i>in vitro</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.
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**BOSSIL TECHNOLOGY SDN. BHD.****Safety Data Sheet****BS-8510
All Purpose Structural Epoxy**

Issued date: 27/12/16

Revision date : -

Revision No.: 0

Oxirane, mono[(C ₁₂ -C ₁₄ -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
Limestone	Exposure for 6 weeks by ingestion on rats. NOAEL: 1,000 mg/kg

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 ₅₀ : 2.3 mg/L Exposure for 48 hours, EC ₅₀ : 1.1 mg/L Exposure for 72 hours, EC ₅₀ : 9.4 mg/L
Oxirane, mono[(C ₁₂ -C ₁₄ -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 ₅₀ : 7.2 mg/L Exposure for 72 hours, NOEC: 844 mg/L
Limestone Toxicity to fish Toxicity to crustacean Toxicity to algae or other aquatic plants	Exposure for 96 hours, LC ₅₀ : >100 mg/L Exposure for 48 hours, EC ₅₀ : >100 mg/L Exposure for 72 hours, EC ₅₀ : >14 mg/L

Persistence and degradability:

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

**BOSSIL TECHNOLOGY SDN. BHD.****Safety Data Sheet****BS-8510
All Purpose Structural Epoxy**

Issued date: 27/12/16

Revision date : -

Revision No.: 0

Reaction product: bisphenol-A-(epichlorhydrin); epoxy resin (number average molecular weight \leq 700)	No biodegradation observed, but significant hydrolysis observed. Exposure for 28 days, hydrolysis of $>82\%$.
Oxirane, mono[(C ₁₂ -C ₁₄ -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 \leq 700)	BCF: 31
Oxirane, mono[(C ₁₂ -C ₁₄ -alkyloxy)methyl] derivatives	Not expected to bioaccumulate in the food chain because it does not exceed the US EPA BCF criteria.

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

**BOSSIL TECHNOLOGY SDN. BHD.****Safety Data Sheet****BS-8510
All Purpose Structural Epoxy**

Issued date: 27/12/16

Revision date : -

Revision No.: 0

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)

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

LD₅₀ : 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.

TCSA : 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.

**BOSSIL TECHNOLOGY SDN. BHD.****Safety Data Sheet****BS-8510
All Purpose Structural Epoxy**

Issued date: 27/12/16

Revision date : -

Revision No.: 0

1. Identification of the substance/preparation and of the company/undertaking**Product name** : BS-8510 All Purpose Structural Epoxy (Part B)**Product use** : Epoxy adhesive**Company** : Bossil Technology Sdn. Bhd.
22A-1, Jalan Tasik Utama 10,
The Trillium @ Lake Fields,
Sg. Besi, 57000 Kuala Lumpur,
Malaysia.**Telephone** : +6016 - 2119190**Fax** : -**Email** : sales@bossil.com**Website** : www.bossil.com**2. Hazard(s) identification****Substance/Mixture** : Mixture**Hazard classification** : Skin Corr.1B

Skin Sens.1

Eye Dam.1

Pictogram

: GHS05



Corrosive



GHS07

Exclamation mark

Signal word

: Warning

Hazard statement(s):

H314	Causes severe skin burns and eye damage.
H317	May cause an allergic skin reaction.
H318	Causes serious eye damage.

Precautionary statement(s):

P260	Do not breathe 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.

**BOSSIL TECHNOLOGY SDN. BHD.****Safety Data Sheet****BS-8510
All Purpose Structural Epoxy**

Issued date: 27/12/16

Revision date : -

Revision No.: 0

P301+P330+P331	IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P302+P352	IF ON SKIN: Wash with soap and water.
P303+P361+P353	IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water.
P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse continuously with water for several minutes. Remove contact lenses if present and easy to do – continue rinsing.
P310	Immediately call a POISON CENTER or doctor/physician.
P333+P313	If skin irritation or a rash occurs: Get medical advice/attention.
P363	Wash contaminated clothing before reuse.
P405	Store locked up.

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-piperazin-1-ylethylamine	140-31-8	205-411-0	10 - 30
Nonylphenol	84852-15-3	284-325-5	1 - 10
Benzyl alcohol	100-51-6	202-859-9	1 - 10
Limestone	1317-65-3	215-279-6	30 - 50

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.

**BOSSIL TECHNOLOGY SDN. BHD.****Safety Data Sheet****BS-8510
All Purpose Structural Epoxy**

Issued date: 27/12/16

Revision date : -

Revision No.: 0

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:

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:

**BOSSIL TECHNOLOGY SDN. BHD.****Safety Data Sheet****BS-8510
All Purpose Structural Epoxy**

Issued date: 27/12/16

Revision date : -

Revision No.: 0

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
Limestone	1317-62-3	8 hours TWA (Particulate matter containing no asbestos and <1% crystalline silica)	10 mg/m ³	Malaysia OSHA
Limestone (total dust)	1317-62-3	8 hours TWA	10 mg/m ³	US OSHA
Limestone (respirable fraction)	1317-62-3	8 hours TWA	5 mg/m ³	US OSHA
Limestone (inhalable dust)	1317-62-3	8 hours TWA	10 mg/m ³	UK WEL
Limestone (respirable dust)	1317-62-3	8 hours TWA	4 mg/m ³	UK WEL
Limestone	1317-62-3	8 hours TWA (Particulate matter containing no asbestos and <1% crystalline silica)	10 mg/m ³	Safe Work Australia

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

Appearance : Thixotropic paste
Odour : Ammoniacal odour
Odour threshold : Not determined

**BOSSIL TECHNOLOGY SDN. BHD.****Safety Data Sheet****BS-8510
All Purpose Structural Epoxy**

Issued date: 27/12/16

Revision date : -

Revision No.: 0

pH	: Not applicable
Freezing/Melting point	: Not determined
Boiling point range	: Not applicable
Flash point	: Not applicable
Evaporation rate	: Not applicable
Flammability	: Not classified as flammable
Explosive properties	: Not classified as explosive
Oxidising properties	: Not classified as oxidising
Vapour pressure	: Not applicable
Vapour density	: Not applicable
Relative density	: 1.75
Solubility in water	: Not determined
N-octanol/water partition coefficient	: Not determined
Decomposition temperature	: Not determined
Viscosity	: 300,000 - 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.

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, LD₅₀ (rat):

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

2-piperazin-1-ylethylamine	>1,000 mg/kg
Nonylphenol	1,412 mg/kg
Benzyl alcohol	1,620 mg/kg

**BOSSIL TECHNOLOGY SDN. BHD.****Safety Data Sheet****BS-8510
All Purpose Structural Epoxy**

Issued date: 27/12/16

Revision date : -

Revision No.: 0

Limestone	>2,000 mg/kg
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Acute dermal toxicity, LD₅₀ (rabbit):

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

2-piperazin-1-ylethylamine	866 mg/kg
Benzyl alcohol	2,000 mg/kg

Acute inhalation toxicity, LC₅₀ (4 hours, rat):

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

Benzyl alcohol	4.178 mg/L
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Serious eye damage/eye irritation:

Classified as causing serious eye damage.

2-piperazin-1-ylethylamine	Slightly irritating to eyes.
Nonylphenol	Irreversible effects on the eyes.
Benzyl alcohol	Not eye irritant.
Limestone	Not eye irritant.

Skin corrosion/skin irritation:

Classified as skin corrosive

2-piperazin-1-ylethylamine	Corrosive on skin.
Nonylphenol	Causes severe skin burns and eye damage.
Benzyl alcohol	Not skin irritant.
Limestone	Not skin irritant.

Respiratory/Skin sensitisation:

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

2-piperazin-1-ylethylamine	Sensitising on skin.
Nonylphenol	Not sensitising on skin.
Benzyl alcohol	Not sensitising on skin.
Limestone	Not sensitising on skin.

Germ cell mutagenicity:

**BOSSIL TECHNOLOGY SDN. BHD.****Safety Data Sheet****BS-8510
All Purpose Structural Epoxy**

Issued date: 27/12/16

Revision date : -

Revision No.: 0

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

2-piperazin-1-ylethylamine	Negative genotoxicity <i>in vitro</i> . Negative genotoxicity <i>in vivo</i> .
Nonylphenol	Negative genotoxicity <i>in vitro</i> . Negative genotoxicity <i>in vivo</i> .
Benzyl alcohol	Negative genotoxicity <i>in vitro</i> .
Limestone	Negative genotoxicity <i>in vitro</i> .

Carcinogenicity:

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

Benzyl alcohol	No evidence of carcinogenic activity.
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Reproductive toxicity:

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

2-piperazin-1-ylethylamine	No effect on fertility and foetal development.
Nonylphenol	No effect on fertility. Maternal toxicity at >300 mg/kg bw/day. NOAEL: 75 mg/kg bw/day
Benzyl alcohol	No effect on fertility and foetal development.
Limestone	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-piperazin-1-ylethylamine	Exposure by oral on rat for 28 days. NOAEL: 2,000 mg/L drinking water
	Exposure by dermal on rats for 4 days. NOAEL: 800 mg/kg bw/day
Benzyl alcohol	Exposure by oral on rats for 103 weeks. NOAEL: 400 mg/kg bw/day
	Exposure by inhalation on rats for 4 weeks. NOAEC: 1,072 mg/m ³
Limestone	Exposure for 6 weeks by ingestion on rats. NOAEL: 1000 mg/kg bw/day

Aspiration toxicity:

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

Likely route of administration:

Inhalation, skin contact, and ingestion.

**BOSSIL TECHNOLOGY SDN. BHD.****Safety Data Sheet****BS-8510
All Purpose Structural Epoxy**

Issued date: 27/12/16

Revision date : -

Revision No.: 0

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-piperazin-1-ylethylamine Toxicity to fish Toxicity to crustacean Toxicity to algae or other aquatic plants	Exposure for 96 hours, LC ₅₀ : 2,190 mg/L Exposure for 48 hours, EC ₅₀ : 58 mg/L Exposure for 72 hours, EC ₅₀ : >1,000 mg/L
Nonylphenol Toxicity to fish Toxicity to crustacean Toxicity to algae or other aquatic plants	M-factor: 10 Exposure for 96 hours, LC ₅₀ : 0.08 mg/L Exposure for 24 hours, EC ₅₀ : 0.218 mg/L Exposure for 72 hours, EC ₅₀ : 1.3 mg/L
Benzyl alcohol Toxicity to fish Toxicity to crustacean Toxicity to algae or other aquatic plants	Exposure for 96 hours, LC ₅₀ : 460 mg/L Exposure for 48 hours, LC ₅₀ : 230 mg/L Exposure for 72 hours, EC ₅₀ : >770 mg/L
Limestone Toxicity to fish Toxicity to crustacean Toxicity to algae or other aquatic plants	Exposure for 96 hours, LC ₅₀ : >100 mg/L Exposure for 48 hours, EC ₅₀ : >100 mg/L Exposure for 72 hours, EC ₅₀ : >14 mg/L

Persistence and degradability:

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

2-piperazin-1-ylethylamine	No biodegradation observed after 28 days.
Nonylphenol	Readily biodegradable. Exposure for 10 days, >60% 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.

Nonylphenol	BCF: 740
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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.

**BOSSIL TECHNOLOGY SDN. BHD.****Safety Data Sheet****BS-8510
All Purpose Structural Epoxy**

Issued date: 27/12/16

Revision date : -

Revision No.: 0

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.

14. Transport information**Road transport (UNRTDG)**

:
UN number : UN2735
Proper shipping name : POLYAMINES, LIQUID, CORROSIVE, N.O.S.
Technical name : Modified cycloaliphatic polyamine
Hazard class : 8
Classification code : C7
Packing group : PG III

Marine transport (IMDG)

:
UN number : UN2735
Proper shipping name : POLYAMINES, LIQUID, CORROSIVE, N.O.S.
Technical name : Modified cycloaliphatic polyamine
Hazard class : 8
EmS : F-A, S-B
Packing group : PG III
Marine pollutant : No

Air transport (IATA)

:
UN number : UN2735
Proper shipping name : POLYAMINES, LIQUID, CORROSIVE, N.O.S.
Technical name : Modified cycloaliphatic polyamine
Hazard class : 8
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)

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.

**BOSSIL TECHNOLOGY SDN. BHD.****Safety Data Sheet****BS-8510
All Purpose Structural Epoxy**

Issued date: 27/12/16

Revision date : -

Revision No.: 0

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
LD₅₀	: 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.