

**BOSSIL TECHNOLOGY SDN. BHD.****Safety Data Sheet****BS-8252
High Performance MS Sealant**

Issued date: 22/12/16

Revision date: -

Revision No.: 0

1. Identification of the substance/preparation and of the company/undertaking**Product name** : BS-8252 High Performance MS Sealant**Product use** : MS sealant**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 Sens. 1
Eye Irrit. 2
Aquatic Chronic 3**Pictogram** : GHS07 Exclamation mark**Signal word** : Warning**Hazard statement(s):**

H317	May cause an allergic skin reaction.
H319	Causes serious eye irritation.
H412	Harmful to aquatic life with long lasting effects.

Precautionary statement(s):

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.
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 cautiously 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.
P363	Wash contaminated clothing 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.	%
Diisononylphthalate	28553-12-0	249-079-5	10 - 30
Vinyltrimethoxysilane	2768-02-7	220-449-8	1 - 10
3-(2-aminoethylamino)propyltrimethoxysilane	1760-24-3	217-164-6	1 - 10
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	2530-83-8	219-784-2	0.1 – 1.0
Dibutyltin bis(acetylacetonate)	22673-19-4	245-152-0	0.1 – 1.0

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 an allergic skin reaction. Causes serious eye irritation.

5. Fire-fighting measures

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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:

Carbon dioxide, carbon monoxide, nitrogen oxides, and other irritant gases.

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 use. Avoid contact with skin and eyes. Do not eat, drink, or smoke when using the product.

Storage:

Ensure containers and cartridges are tightly closed. Store in a dry, well-ventilated area, and protected from direct sunlight with temperature not exceeding 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
Diisononylphthalate	28553-12-0	8 hours TWA	5 mg/m ³	UK WEL

Engineering controls:

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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	: Characteristic 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
Oxidising properties	: Not classified as oxidising
Vapour pressure	: Not applicable
Vapour density	: Not applicable
Relative density	: Approximately 1.46
Solubility in water	: Not determined
N-octanol/water partition coefficient	: Not determined
Decomposition temperature	: Not determined
Viscosity	: Not applicable

10. Stability and reactivity**Reactivity:**

No reactive hazards known.

Stability:

Stable under recommended handling and storage conditions.

Conditions to avoid:

Exposure to water/water vapour and humid air.

Hazardous reactions:

Hazardous polymerisation will not occur.

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Hazardous decomposition products:

None known.

Incompatible materials:

Water, alcohol, and amines.

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.

Diisononylphthalate	>10,000 mg/kg
3-(2-aminoethylamino)propylmethoxysilane	2,295 mg/kg
Vinyltrimethoxysilane	7,120 mg/kg
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	8,025 mg/kg
Dibutyltin bis(acetylacetonate)	1,864 mg/kg

Acute dermal toxicity, LD₅₀ (rabbit):

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

Diisononylphthalate	>3,160 mg/kg
3-(2-aminoethylamino)propylmethoxysilane	2,000 mg/kg
Vinyltrimethoxysilane	3,460 mg/kg
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	4,250 mg/kg
Dibutyltin bis(acetylacetonate)	>2,000 mg/kg

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

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

Diisononylphthalate	>4.4 mg/L (aerosol)
3-(2-aminoethylamino)propyltrimethoxysilane	>1.49 mg/L (mist)
Vinyltrimethoxysilane	2,773 ppm
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	>5.3 mg/L (aerosol)

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Serious eye damage/eye irritation:

Classified as eye irritant.

Diisononylphthalate	Not eye irritant.
3-(2-aminoethylamino)propylmethoxysilane	Irreversible effects on the eye.
Vinyltrimethoxysilane	Not eye irritant.
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	Causes eye irritation.
Dibutyltin bis(acetylacetonate)	Causes eye irritation.

Skin corrosion/skin irritation:

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

Diisononylphthalate	Very mild skin irritation.
3-(2-aminoethylamino)propylmethoxysilane	Not skin irritant.
Vinyltrimethoxysilane	Not skin irritant.
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	Not skin irritant.
Dibutyltin bis(acetylacetonate)	Causes skin irritation.

Respiratory/Skin sensitisation:

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

Diisononylphthalate	Not sensitising to respiratory and skin.
3-(2-aminoethylamino)propylmethoxysilane	Probability or evidence of skin sensitisation in humans.
Vinyltrimethoxysilane	Not sensitising on skin.
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	Not sensitising on skin.
Dibutyltin bis(acetylacetonate)	Sensitising on skin.

Germ cell mutagenicity:

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

Diisononylphthalate	Negative genotoxicity <i>in vitro</i> . Negative genotoxicity <i>in vivo</i> .
Vinyltrimethoxysilane	Negative genotoxicity <i>in vitro</i> . Negative genotoxicity <i>in vivo</i> .
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	Negative genotoxicity <i>in vitro</i> . Negative genotoxicity <i>in vivo</i> .



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Dibutyltin bis(acetylacetonate)	Negative genotoxicity <i>in vitro</i> . Negative genotoxicity <i>in vivo</i> .
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Carcinogenicity:

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

Diisononylphthalate	Negative carcinogenicity. NOAEL: 88.3 mg/kg bw/day
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	Negative carcinogenicity. NOAEL: >5 mg/kg bw/day
Dibutyltin bis(acetylacetonate)	No statistically significant increase in tumour incidences. NOAEL: 152 ppm

Reproductive toxicity:

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

Diisononylphthalate	No effect on fertility and foetal development.
3-(2-aminoethylamino)propylmethoxysilane	No effect on fertility and foetal development.
Vinyltrimethoxysilane	No effect on fertility and foetal development.
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	No effect on fertility and foetal development.
Dibutyltin bis(acetylacetonate)	No data on fertility. No effect on foetal development.

Specific target organ toxicity – single exposure:

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

3-(2-aminoethylamino)propylmethoxysilane	Exposure by ingestion. No significant health effect at concentration of 100 mg/kg body weight or less.
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Specific target organ toxicity – repeated exposure:

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

Diisononylphthalate	Exposure for 104 weeks by ingestion on rats. NOAEL: 88.3 mg/kg bw/day
	Exposure by inhalation on rats. NOAEC: 500 mg/m ³
	Exposure for 6 weeks by dermal on rabbits. NOAEL: 500 mg/kg bw/day
3-(2-aminoethylamino)propylmethoxysilane	Exposure by ingestion for 28 days on rats. NOAEL: 500 mg/kg bw/day
	Exposure by dermal for 11 days on rats. NOAEL: 1,545 mg/kg bw/day
Vinyltrimethoxysilane	Exposure by ingestion for 43 days on rats. NOAEL: <62.5 mg/kg bw/day LOAEL: 62.5 mg/kg bw/day
	Exposure by inhalation for 14 days on rats. NOAEL: 10 ppm LOAEL: 100 ppm

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[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	Exposure by ingestion for 28 days on rats. NOAEL: >1,000 mg/kg bw/day
	Exposure by inhalation for 2 weeks on rats. NOAEC: 225 mg/m ³
Dibutyltin bis(acetylacetonate)	Exposure by ingestion for 2 weeks on rats. NOAEL: <50 ppm LOAEL: 50 ppm

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:

Harmful to aquatic life with long lasting effects.

Diisononylphthalate Toxicity to fish Toxicity to crustacean Toxicity to algae or other aquatic plants	Exposure for 96 hours, LC ₅₀ : >102 mg/L Exposure for 48 hours, EC ₅₀ : >74 mg/L Exposure for 72 hours, EC ₅₀ : >88 mg/L
3-(2-aminoethylamino)propylmethoxysilane Toxicity to fish Toxicity to crustacean Toxicity to algae or other aquatic plants	Exposure for 96 hours, LC ₅₀ : 597 mg/L Exposure for 48 hours, EC ₅₀ : 81 mg/L Exposure for 72 hours, EC ₅₀ : 8.8 mg/L
Vinyltrimethoxysilane Toxicity to fish Toxicity to crustacean Toxicity to algae or other aquatic plants	Exposure for 96 hours, LC ₅₀ : 191 mg/L Exposure for 48 hours, EC ₅₀ : 168.7 mg/L Exposure for 7 days, EC ₅₀ : 210 mg/L
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane Toxicity to fish Toxicity to crustacean Toxicity to algae or other aquatic plants	Exposure for 96 hours, LC ₅₀ : 55 mg/L Exposure for 48 hours, EC ₅₀ : 324 mg/L Exposure for 7 days, EC ₅₀ : 268 mg/L
Dibutyltin bis(acetylacetonate) Toxicity to fish Toxicity to crustacean Toxicity to algae or other aquatic plants	Exposure for 96 hours, LC ₅₀ : >2 mg/L Exposure for 48 hours, EC ₅₀ : 0.0036 mg/L Exposure for 72 hours, EC ₅₀ : >2 mg/L

Persistence and degradability:

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

Diisononylphthalate	Readily biodegradable. Exposure for 28 days, 81% biodegradation.
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3-(2-aminoethylamino)propylmethoxysilane	Not readily biodegradable. 39% biodegradation. 0.025 hours half-life degradation.
Vinyltrimethoxysilane	Not readily biodegradable. Exposure for 28 days, 51% biodegradation.
[3-(2,3-epoxypropoxy)propyl]trimethoxysilane	Not readily biodegradable. Exposure for 28 days, 37% biodegradation.

Bioaccumulative potential:

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

Diisononylphthalate	BCF: <3
3-(2-aminoethylamino)propylmethoxysilane	Log K _{ow} : -0.3

Mobility in soil:

No data available.

13. Disposal information**Waste treatment/disposal methods - unused products**

Disposal of waste to be in accordance with the Environmental Quality (Scheduled Wastes) Regulations and other guidelines issuance by DOE and/or local authorities.

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)** : 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)** : Not regulated as dangerous goods.**UN number** : Not applicable**Proper shipping name** : Not applicable**Technical name** : Not applicable**Hazard class** : Not applicable

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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.

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**BCF** : Bioconcentration factor**NOAEL** : No-observed-adverse-effect-level**LOAEL** : Lowest-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**ENCS** : Existing and New Chemical Substances.**KECI** : Korea Existing Chemicals Inventory.**ECSN** : Existing Chemical Substance Nomination.

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



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safety requirement at the date of its publication. We do, however, pass them on without any warranty or property assurances.