1. Identification of Substance & Company

Company Details:
Hilti (New Zealand) Ltd
Unit 1/B, 525 Great South Rd
Penrose
Auckland, 1061
PO Box 112- 030, Penrose
Ph 09 526 7783 (between 7-30 AM and 6-30 PM)
EMERGENCY TELEPHONE NUMBER
0800 623 000 (National Poisons Centre)

Product

Product name	HIT-RE 500-SD
Other names	Hilti HIT-RE 500-SD
HSNO approval	Component A: HSR002670 Component B: HSR002658
Approval description	Component A: Surface Coatings and Colourants (Subsidiary Hazard) Group Standard 2006 Component B: Surface Coatings and Colourants (Corrosive) Group Standard 2006
UN number	3259/3077
Proper Shipping Name	AMINES, SOLID, CORROSIVE, n.o.s. (m-Xylylenediamine), ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, n.o.s. (Bisphenol A/F Epoxy Resin)
Packaging group	PGII/PGIII
Hazchem code	2X
Uses	Injection adhesive epoxy anchor

2. Hazard Identification

Approval

This product has been approved under the Hazardous Substances and New Organisms Act (HSNO, Approval HSR002670, Surface Coatings and Colourants (Subsidiary Hazard) Group Standard 2006, Approval HSR002658, Surface Coatings and Colourants (Corrosive) Group Standard 2006), and is classified as follows:

Classes	Hazard Statements
Component A:	
6.3B	Causes mild skin irritation.
6.4A	Causes eye irritation.
6.5B	May cause an allergic skin reaction.
6.9B	May cause damage to organs
9.1B	Toxic to aquatic life with long lasting effects.
Component B:	
6.1D (inhalation)	Harmful if inhaled.
6.1D (oral)	Harmful if swallowed.
6.5A	May cause allergy or asthma symptoms or breathing difficulties if inhaled.
6.5B	May cause an allergic skin reaction.
8.2B	Causes severe skin burns and eye damage.
8.3A	Causes serious eye damage.
9.1C	Harmful to aquatic life. May cause long lasting harmful effects to aquatic life.

SYMBOLS

DANGER

Other Classifications

This substance does contain silica (quartz) which is classed as a carcinogen (6.7A) if in an inhalable form (e.g. fine dust).
This substance is a paste.

Precautionary Statements

Keep out of reach of children.
Read label before use.
Avoid breathing vapours.
Use only outdoors or in a well-ventilated area.
Wash hands thoroughly after handling.
Do not eat, drink or smoke when using this product.
Contaminated work clothing should not be allowed out of the workplace.
Wear protective gloves/eye protection/face protection.

Avoid release to the environment. Collect spillage.

Further precautionary statements can be found in Section 4 – First Aid.

3. Composition / Information on Ingredients

Component A - ingredients	CAS/ Identification	Class for ingredient(s)	Conc (%)
Bisphenol-A epichlorhydrin resin	25068-38-6	6.3B, 6.4A, 6.5B (contact), 6.9B, 9.1B	25-50%
Bisphenol-F epichlorhydrin resin MW<700	28064-14-4	6.3B, 6.4A, 6.5B (contact), 6.9B, 9.1B (similar to Bisphenol A)	10-30%
2,2'-[1,6-hexanediylbis(oxymethylene)]bisoxirane	16096-31-4	6.3B, 6.4A, 6.5B, 9.1C	10-25%
Trimethylolpropane, (chloromethyl)oxirane polymer	30499-70-8	6.3B, 6.4A, 6.5B, 9.1C	2.5-10%
Quartz (SiO2)	14808-60-7	6.7A, 6.9A	25-50%

Component B - ingredients	CAS/ Identification	Class for ingredient(s)	Conc (%)
Benzene-1,3-Dimethylamine (MXDA)	1477-55-0	6.1C (inhalation, vapour), 6.1D (oral), 6.5A, 6.5B, 8.2C, 8.3B, 9.1C	25-40%
Quartz (SiO2)	14808-60-7	6.7A, 6.9A	25-50%

This is a commercial product whose exact ratio of components may vary. Trace quantities of impurities are also likely.

4. First Aid

General Information

If medical advice is needed, have product container or label at hand. You should call the National Poisons Centre if you feel that you may have been harmed or irritated by this product. The number is 0800 764 766 (0800 POISON) (24 hr emergency service).
Recommended first aid facilities Ready access to running water is required. Accessible eyewash is required.

Exposure

Swallowed IF SWALLOWED: Do NOT induce vomiting. Rinse mouth. If vomiting occurs, place victim face downwards, with the head turned to the side and lower than the hips to prevent vomit entering the lungs.

Eye contact IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Apply continuous irrigation with water for at least 15 minutes holding eyelids apart. Immediately call a POISON CENTER or doctor/physician.

Skin contact IF ON SKIN: Remove immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. Immediately call a POISON CENTER or physician.

Inhaled IF INHALED: If breathing is difficult, remove to fresh air and keep at rest in a position comfortable for breathing. If patient is unconscious, place in the recovery position (on the side) for transport and contact a doctor. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician.

Advice to Doctor

Treat symptomatically

5. Firefighting Measures

Fire and explosion hazards:	There are no specific risks for fire/explosion for this chemical. It is not classed as flammable.
Suitable extinguishing substances:	Carbon dioxide, extinguishing powder, foam, fog sprays.
Unsuitable extinguishing substances:	Water jets
Products of combustion:	Carbon dioxide, and if combustion is incomplete, carbon monoxide, oxides of nitrogen and smoke. May form toxic mixtures in air and may accumulate in sumps, pits and other low-lying spaces, forming potentially explosive mixtures.
Protective equipment:	Self-contained breathing apparatus. Safety boots, non-flammable overalls, gloves, hat and eye protection.
Hazchem code:	2X

6. Accidental Release Measures

Containment	If greater than 1000kg is stored, secondary containment and emergency plans to manage any potential spills must be in place.
Emergency procedures	The container size will generally prevent a major spill. In the event of a large spillage (>100kg) alert the fire brigade to location and give brief description of hazard. Stop the source of the leak, if safe to do so. Wear protective equipment to prevent skin, eye and respiratory exposure. Clear area of any unprotected personnel. Contain using sand, earth or vermiculite. Prevent by whatever means possible any spillage from entering drains, sewers, or water courses. (If this occurs contact your regional council immediately).
Clean-up method	Collect product and seal in properly labelled containers or drums for disposal. If contamination of crops, sewers or waterways has occurred advise local emergency services.
Disposal	Mop up and collect recoverable material into labelled containers for recycling or salvage. Recycle containers wherever possible. This material may be suitable for approved landfill. Dispose of only in accord with all regulations.
Precautions	Wear protective equipment to prevent skin and eye contamination and the inhalation of vapours. Work up wind or increase ventilation

7. Storage & Handling

Storage	Avoid storage of harmful substances with food. Keep in a cool, dry and dark place; 5°C to 25°C. Store out of reach of children. Containers should be kept closed in order to minimise contamination. Protect from heat and direct sunlight. Keep away from ignition sources. Keep in a cool, dry place. Avoid contact with incompatible substances as listed in Section 10.
Handling	Keep exposure to a minimum, and minimise the quantities kept in work areas. See section 8 with regard to personal protective equipment requirements. Avoid skin and eye contact and inhalation of vapour. Do not smoke.Use only as directed; avoid uncontrolled mixing with other material, esp polymerisable or combustible materials.

8. Exposure Controls / Personal Protective Equipment

Workplace Exposure Standards

A workplace exposure standard (WES) has not been established by WorkSafe NZ for this product. There is a general limit of 10mg/m^3 for dusts and mists when limits have not otherwise been established.

NZ Workplace Exposure Stds (2013)	Ingredient	WES-TWA	WES-STEL
	Component A:		
	Bisphenol-A epichlorhydrin resin	no data	no data
	Bisphenol-F epichlorhydrin resin MW<700	no data	no data
	2,2'-[1,6-hexanediylbis(oxymethylene)]bisoxirane	no data	no data
	Trimethylolpropane, (chloromethyl)oxirane polymer	no data	no data
	Quartz (SiO2)	0.2mg/m^3 (Respirable dust) 0.1mg/m3 (Respirable dust, cristabolite)	no data
	Component B:		
	Benzene-1,3-Dimethylamine (MXDA)	Ceiling: 0.1mg/m^3	no data
	Quartz (SiO2)	See above	no data

Engineering Controls

In industrial situations, it is expected that employee exposure to hazardous substances will be controlled to a level as far below the WES as practicable by applying the hierarchy of control required by the Health and Safety in Employment Act 1992 (HSE). Exposure can be reduced by process modification, use of local exhaust ventilation, capturing substances at the source, or other methods. If you believe air borne concentrations of mists, dusts or vapours are high, you are advised to modify processes or increase ventilation.

Personal Protective Equipment

Eyes

To protect eyes, it is recommended that goggles, safety glasses or full face mask be worn. Avoid wearing contact lenses.

Skin

Avoid repeated or prolonged skin contact. Wear overalls, rubber boots and impervious gloves, e.g. nitrile rubber, NBR gloves. Replace frequently. Gloves should be checked for tears or holes before use. Natural rubber, NR, Leather gloves are not suitable for this purpose.
Remove protective clothing and wash exposed areas with soap and water prior to eating, drinking or smoking. Wash hands after handling.

Respiratory

A respirator with an organic vapour cartridge when airborne concentrations approach the WES (section 8) should be used. If using a respirator, ensure that the cartridges are correct for the potential air contamination and are in good working order.

WES Additional Information

Not applicable

9. Physical & Chemical Properties

Appearance	Component A: grey paste Component B: red paste
Odour	amine like
pH	Component A: 7 Component B: 11.5 Mixture: 11.5
Vapour pressure	0.04hPa at 20°C
Viscocity	~50 Pa.s (dynamic at 20°C), >20 s (kinematic at 20°C)
Boiling point	>200°C
Volatile materials	0% organic solvents
Freezing / melting point	not determined
Solubility	insoluble in water
Specific gravity / density	1.47g/cm^3
Flash point	>100°C
Danger of explosion	no data
Auto-ignition temperature	no data
Upper & lower flammable limits	no data
Corrosiveness	Component B: Corrosive to skin and eyes

10. Stability & Reactivity

Stability	Stable
Conditions to be avoided	Containers should be kept closed in order to avoid contamination. Keep from extreme heat and open flames.
Incompatible groups	No specific incompatibility known
Substance Specific Incompatibility	none known
Hazardous decomposition products	None known
Hazardous reactions	none known

11. Toxicological Information

Summary

IF SWALLOWED: harmful if swallowed.
IF IN EYES: may cause severe eye injury.
IF ON SKIN: may cause burns to the skin. May cause sensitisation for some individuals.
IF INHALED: harmful if inhaled.

Supporting Data

Acute	**Oral**	Using LD50's for ingredients, the calculated LD_{50} (oral, rat) for the Component A is > 5,000 mg/kg. LD_{50} (oral) data: Bisphenol A diglycidyl ether resin : 15600mg/kg (mouse), 10.7mL/kg (rat). Using LD_{50}'s for ingredients, the calculated LD_{50} (oral, rat) for the Component B is between 300 and 2,000 mg/kg. Benzene-1,3-Dimethylamine (MXDA) 930mg/kg (rat).
	Dermal	Using LD_{50}'s for ingredients, the calculated LD_{50} (dermal, rat) for both Component A and Component B is >5000mg/kg. LD_{50} (dermal) data: Bisphenol A diglycidyl ether resin : >20mL/kg (rabbit). Benzene-1,3-Dimethylamine (MXDA) 2000mg/kg (rabbit).
	Inhaled	Using LC_{50}'s for ingredients, the calculated LC_{50} (inhalation, rat) for the mixture is between 10-20mg/L. Data considered includes: Benzene-1,3-Dimethylamine (MXDA) 700ppm (1hr, rat) .
	Eye	Component A is considered to be irritating to the eye, because some of the ingredients (Bisphenol A diglycidyl ether resin), present is considered an eye irritant. Component B is considered to be corrosive to the eye, because one of the ingredients (Benzene-1,3-Dimethylamine (MXDA) present at >3% is considered eye corrosives.
	Skin	Component A is considered to be a mild skin irritant, because some of the ingredients (Bisphenol A diglycidyl ether resin) present are considered mild skin irritants. Component B is considered to be corrosive to the skin, because one of the ingredients (Benzene-1,3-Dimethylamine (MXDA) present at >3% is considered skin corrosives.
Chronic	**Sensitisation**	Component A is considered to be a contact sensitizer due to the presence of Bisphenol A diglycidyl ether resin, bisphenol-F epichlorhydrin, the bisoxirane and oxirane polymer. Component B is considered to be a contact and respiratory sensitiser due to the presence of Benzene-1,3-Dimethylamine (MXDA).
	Mutagenicity	No evidence of mutagenicity for the mixture or any of the ingredients.
	Carcinogenicity	This mixture does contain crystalline silica, however it is not in an inhalable form. Crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (IARC Group 1). The mixture is a paste and does not trigger this classification, however if sanding the cured mixture, respirable dust may result.
	Reproductive / Developmental	No ingredient present in the mixture at concentrations > 0.1% is considered a reproductive toxicant.
	Systemic	Component A is suspected to be a target organ toxicant by dermal contact and by inhalation, because one of the ingredients (Bisphenol A diglycidyl ether resin) present in greater than 1% are suspected to be a target organ toxicant. This mixture also contains crystalline silica. This substance is in the form of a paste. Crystalline silica triggers 6.9A classification if it is in the form of a fine respirable dust in an occupational (chronic exposure) setting. This is due to the development of acute silicosis which can occur following exposure to extremely high levels of fine silica dust. Silicosis is a type of pneumoconiosis – a disease of the lung that causes inflammation, scar tissue, lesions and fibrosis in the lung (alveolar). Symptoms include shortness of breath, cough, fever, loss of appetite and cyanosis (bluish skin). Silicosis can occur following prolonged exposure (e.g., 10 years) to relatively high levels of fine crystalline silica dust.
	Aggravation of existing conditions	None known.

12. Ecological Data

Summary

Component A is expected to be toxic to the aquatic environment and Component B is harmful to the aquatic environment.

Supporting Data

Aquatic	For component A: Using EC_{50}'s for ingredients, the calculated EC_{50} for component A is between 1mg/L and 10mg/L. The R-phrases for Part A are R51/53: Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment. For Component B: benzene-1,3-dimethylamine: >100mg/l (96hr, Oncorhynchus mykiss, rainbow trout), 16mg/L (48hr, Daphnia magna).
Bioaccumulation	No data
Degradability	not readily biodegradable
Soil	No data available for the mixture.
Terrestrial vertebrate	This product is considered harmful to terrestrial vertebrates. No LC_{50} (diet) data for ingredients are available and the classification is based on the LD_{50} (oral) – see section 11 – oral toxicity.
Terrestrial invertebrate	The mixture is not considered harmful to terrestrial invertebrates.
Biocidal	Not applicable
Environmental effect levels	No EELs are available for this mixture or ingredients

13. Disposal Considerations

Restrictions	There are no product-specific restrictions, however, local council and resource consent conditions may apply, including requirements of trade waste consents.
Disposal method	Disposal of this product must comply with the requirements of the Resource Management Act for which approval should be sought from the Regional Authority. The substance must be treated and therefore rendered non-hazardous before discharge to the environment.
Contaminated packaging	The cartridges are a disposable injection system and therfore cannot be recycled. Send to landfill or similar.

14. Transport Information

Transport according to NZS 5433 (Transport of Hazardous Substances on Land). Considered a hazardous substance for transport.

UN number:	3259/3077	**Proper shipping name:**	AMINES, SOLID, CORROSIVE, n.o.s. (m-Xylylenediamine), ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, n.o.s. (Bisphenol A/F Epoxy Resin)
Class(es)	8, 9.	**Packing group:**	PGII, PGIII
Precautions:	Ecotoxic, corrosive	**Hazchem code:**	2X

IMDG

Classified as Dangerous Goods by the criteria of the International Maritime Dangerous Goods Code (IMDG Code) for transport by sea.

UN number:	3259/3077	**Proper shipping name:**	AMINES, SOLID, CORROSIVE, n.o.s. (m-Xylylenediamine), ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, n.o.s. (Bisphenol A/F Epoxy Resin)
Class(es)	8, 9.	**Packing group:**	PGII, PGIII
Precautions:	Ecotoxic, corrosive	**EmS**	F-A, S-B, F-A, S-F
Limited Quantities:	1kg, 5kg.		

IATA

Classified as Dangerous Goods by the criteria of the International Air Transport Association (IATA) Dangerous Goods Regulations for transport by air.

UN number:	3259/3077	**Proper shipping name:**	AMINES, SOLID, CORROSIVE, n.o.s. (m-Xylylenediamine), ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, n.o.s. (Bisphenol A/F Epoxy Resin)
Class(es)	8, 9.	**Packing group:**	PGII, PGIII
Precautions:	Ecotoxic, corrosive	**ERG Guide**	154, 171

15. Regulatory Information

This product is an approved substance under the Hazardous Substances and New Organisms Act (HSNO). Approval code: HSR002670, Surface Coatings and Colourants (Subsidiary Hazard) Group Standard 2006. And HSR002658, Surface Coatings and Colourants (Corrosive) Group Standard 2006.

Specific Workplace Controls (as per HSNO approval referenced to Controls Matrix)

Key workplace requirements are:	
SDS	To be available within 10 minutes in workplaces storing > any quantity.
Labelling	No removal of labels and/or decanting of product into other containers can occur.
Emergency plan	Required if > 1000kg is stored.
Approved handler	Not required.
Tracking	Not required.
Bunding & secondary containment	Required if > 1000kg is stored.
Signage	Required if > 250kg is stored in any one location.
Location test certificate	Not required.
Flammable zone	Not required.
Fire extinguisher	Not required.

Note: The above workplace requirements apply if only this particular substance is present. The complete set of controls for a location will depend on the classification and total quantities of other substances present in that location.

Other Legislation

In New Zealand, the use of this product may come under the Resource Management Act and Regulations, the Health, Safety in Employment Act and Regulations, local Council Rules and Regional Council Plans.

16. Other Information

Abbreviations

Approval Code	Approval HSR002670, Surface Coatings and Colourants (Subsidiary Hazard) Group Standard 2006 and HSR002658, Surface Coatings and Colourants (Corrosive) Group Standard 2006 Controls, EPA. www.epa.govt.nz
CAS Number	Unique Chemical Abstracts Service Registry Number
Controls Matrix	List of default controls linking regulation numbers to Matrix code (e.g. T1, I16).
EC_{50}	Ecotoxic Concentration 50% – concentration in water which is fatal to 50% of a test population (e.g. daphnia, fish species)
ERMA	Environmental Risk Management Authority (now EPA)
EPA	Environmental Protection Agency (previously known as ERMA)
HAZCHEM Code	Emergency action code of numbers and letters that provide information to emergency services, especially fire fighters
HSNO	Hazardous Substances and New Organisms (Act and Regulations)
IARC	International Agency for Research on Cancer
LEL	Lower Explosive Limit
LD_{50}	Lethal Dose 50% – dose which is fatal to 50% of a test population (usually rats).
LC_{50}	Lethal Concentration 50% – concentration in air which is fatal to 50% of a test population (usually rats)
MSDS (SDS)	Material Safety Data Sheet (or Safety Data Sheet)
STEL	Short Term Exposure Limit - The maximum airborne concentration of a chemical or biological agent to which a worker may be exposed in any 15 minute period, provided the TWA is not exceeded
TWA	Time Weighted Average – generally referred to WES averaged over typical work day (usually 8 hours)
UEL	Upper Explosive Limit
UN Number	United Nations Number
WES	Workplace Exposure Standard - The airborne concentration of a biological or chemical agent to which a worker may be exposed.

References

Data	Unless otherwise stated comes from the EPA HSNO chemical classification information database (CCID) http://www.epa.govt.nz/hs/compliance/chemicals.html , for specific chemicals.
EPA Transfer Gazettes	Classifications and controls assigned for specific ingredients (consolidated gazette, 2004)
Controls Matrix	Part of the EPA New Zealand User Guide to the HSNO Control Regulations
WES 2013	The NZ Workplace Exposure Standards Effective from 2013, published by WorkSafe NZ and available on their web site – www.worksafe.govt.nz.
Other References:	Suppliers SDS

Review

Date	Reason for review
December 2011	DRAFT SDS generated (to be reviewed)
January 2012	Reviewed (Hilti). Alternative names, address updated. SDS finalised.
June 2012	Additional information (silica)
November 2014	Update, review of classes for ingredients. Review of toxicological data, formatting. DoL to WorkSafe, including IATA and IMDG information.

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