1. Identification of Substance & Company

Product

Product name	SET-XP
Product code	SET-XP
HSNO approval	HSR002658 for the hardener part, HSR002679 for the resin part
Approval description	Hardener: Surface Coatings and Colourants (Corrosive) Group Standard 2006 Resin: Surface Coatings and Colourants (Toxic [6.7]) Group Standard 2006
UN number	2735
Proper Shipping Name	AMINES, LIQUID, CORROSIVE, n.o.s. (contains m-phenylenebis(methylamine), phenol)
DG class	8
Packaging group	III
Hazchem code	2X
Uses	Anchoring adhesive

Company Details

Company	**Simpson Strong-Tie New Zealand**
Address	28 Arrenway Drive Albany Auckland 0632 New Zealand
Telephone	+64 9 477 4440
Fax	+64 9 475 9724
Website	www.strongtie.co.nz

Emergency Telephone Number: 0800 POISON (0800 764 766)

2. Hazard Identification

Approval

The final hardened material is considered non hazardous.

The two parts of this product has been approved under the Hazardous Substances and New Organisms Act (HSNO),

Approval HSR002658, Surface Coatings and Colourants (Corrosive) Group Standard 2006) for the Hardener Part, and
Approval HSR002679, Surface Coatings and Colourants (Toxic [6.7]) Group Standard 2006) for the Resin Part
and are classified as follows:

Classes	Hazard Statements
Hardener part:	
6.1E (oral)	May be harmful if swallowed
6.1D (inhalation)	Harmful if inhaled.
8.2C	Causes severe skin burns and eye damage.
8.3A	Causes serious eye damage.
6.5B	May cause an allergic skin reaction.
6.6B	Suspected of causing genetic defects
6.8B	Suspected of damaging fertility or the unborn child
6.9B	May cause damage to organs
9.1C	Harmful to aquatic life with long lasting effects.

SYMBOLS

DANGER

Resin part:

6.3B	Causes mild skin irritation.
6.4A	Causes eye irritation.
6.5B	May cause an allergic skin reaction.
6.6B	Suspected of causing genetic defects
6.7B	Suspected of causing cancer
6.8B	Suspected of damaging fertility or the unborn child
9.1B	Toxic to aquatic life with long lasting effects.

DANGER

Other Classifications

There are no other Classifications that are known to apply.

Precautionary Statements

Precautionary

Keep out of reach of children.
Read label before use. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.
Use only outdoors or in a well-ventilated area.
Do not breathe vapours.
Wash hands thoroughly after handling.
Wear protective gloves/protective clothing/eye protection/face protection.
In case of inadequate ventilation wear respiratory protection.
Contaminated work clothing should not be allowed out of the workplace.
Do not eat, drink or smoke when using this product.
Avoid release to the environment. Collect spillage.
Store locked up.

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

3. Composition / Information on Ingredients

Hardener Part - Components	CAS/ Identification	Class for ingredient(s)	Concentration
Quartz (SiO2)	14808-60-7	6.7A, 6.9A	25-50%
Benzene-1,3-Dimethylamine (MXDA)	1477-55-0	6.1C (inhalation), 6.1D (oral), 6.5B, 8.2C, 8.3A, 9.1C	2.5 -10%
2,4,6 Tris(dimethylaminomethyl)phenol	90-72-2	6.1D (oral, dermal), 8.2C, 8.3A, 9.3C	2.5-10%
Phenol	108-95-2	6.1B (inhalation), 6.1C (oral, dermal), 6.6B, 6.8B, 6.9A (dermal, oral), 8.2B, 8.3A, 9.1D (fish, crustacean, algal), 9.2D, 9.3B	1-2.5%
Triethylene tetramine (TETA)	112-24-3	6.1C (dermal), 6.1D (oral), 6.5B (contact), 6.8B, 6.9A (oral), 6.9B (dermal), 8.2C, 8.3A, 9.1B (algal), 9.1C (crustacean), 9.3B	0-1%

Resin Part - Components	CAS/ Identification	Class for ingredient(s)	Concentration
Bisphenol-F epichlorhydrin resin MW<700	28064-14-4	6.3B, 6.4A, 6.5B (contact), 6.9B, 9.1B (similar to Bisphenol A)	25-50%
Bisphenol A diglycidyl ether resin	25068-38-6	6.3B, 6.4A, 6.5B (contact), 6.9B, 9.1B	25-50%
Titanium dioxide	13463-67-7	6.4A, 6.7B (IARC 2B)	2.5-10%
Butyl glycidyl ether	2426-08-6	3.1C, 6.1D (oral, inhalation), 6.3A, 6.4A, 6.5B, 6.6B, 6.8B, 9.1C, 9.3C	1-2.5%

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 poisoned, burned or irritated by this product. The number is 0800 764 766 (0800 POISON) (24 hr emergency service). IF exposed or concerned: Get medical advice/ attention.

Recommended first aid facilities Ready access to running water is required. Accessible eyewash is required.

Exposure

Swallowed IF SWALLOWED: Rinse mouth. Do NOT induce vomiting. 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. Call a POISON CENTER or doctor/physician if you feel unwell.

Eye contact IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor/physician.

Skin contact IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Wash contaminated clothing before reuse. Immediately call a POISON CENTER or doctor/physician.
If skin irritation or rash occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

Inhaled IF INHALED: Remove to fresh air and keep at rest in a position comfortable for breathing. 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 classed as non-flammable.

Suitable extinguishing substances: Carbon dioxide, extinguishing powder, foam, fog sprays.

Unsuitable extinguishing substances: Do not use water jets.

Products of combustion: Carbon dioxide, and if combustion is incomplete, carbon monoxide and thick black smoke. Water. May form toxic mixtures in air and may accumulate in sumps, pits and other low-lying spaces, forming potentially explosive mixtures.

Protective equipment: Do not breathe in smoke. Use 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.In all cases design storage to prevent discharge to stormwater.

Emergency procedures 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. Do not use sawdust on concentrate.
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 Use absorbent (soil, sand or other inert material). Rags are not recommended for the clean-up of spills, as they may create fire or environmental hazard. Collect and seal in properly labelled containers or drums for disposal. If contamination of crops, sewers or waterways has occurred advise local emergency services. Use detergents to clean up spill site, do not use solvents.

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 original packaging.
Store out of reach of children. Containers should be kept closed in order to minimise contamination. Keep from extreme heat and open flames. Keep away from water and moisture.
Avoid contact with incompatible substances as listed in Section 10.

Handling

Individuals with a history of skin sensitisation should not, under any circumstance, handle this mixture.
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, mist or aerosols.

8. Exposure Controls / Personal Protective Equipment

Workplace Exposure Standards

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

	Ingredient	WES-TWA	WES-STEL
NZ Workplace Exposure Stds (OSH – DoL 2011)	Quartz (SiO2)	0.2mg/m^3 (quartz, respirable dust) 0.1mg/m^3 (cristobalite, respirable dust)	data unavailable
	Benzene-1,3-Dimethylamine (MXDA)	Ceiling: 0.1mg/m^3	data unavailable
	Phenol	5ppm, 19mg/m^3 (skin)	data unavailable
	Titanium dioxide	10mg/m^3	data unavailable
	Butyl glycidyl ether	25ppm, 133mg/m^3	data unavailable

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

Protect eyes with goggles, safety glasses or full face mask. Avoid wearing contact lenses.

Skin

Avoid skin contact. Wear overalls, rubber boots and impervious gloves. Nitrile or butyl rubber gloves are recommended. Replace frequently. Gloves should be checked for tears or holes before use. Remove protective clothing and wash exposed areas with soap and water prior to eating, drinking or smoking.

Respiratory

A respirator when airborne concentrations approach the WES (section 8). Use a respirator with an organic vapour cartridge and a particulate filter (dust/mists). 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	Hardener: Viscous liquid, Resin: Fluid liquid
Odour	Hardener: amine odour, Resin: characteristic odour
pH	Not applicable
Vapour pressure	No data
Viscosity	No data
Boiling point	No data
Volatile materials	No data
Freezing / melting point	No data
Solubility	Insoluble in water
Specific gravity / density	>1
Flash point	Not flammable
Danger of explosion	No data
Auto-ignition temperature	No data
Upper & lower flammable limits	No data
Corrosiveness	Hardener is corrosive to skin and eyes.

10. Stability & Reactivity

Stability	The Hardener and resin are stable, if not in contact. The product is stable under recommended handling and storage conditions.
Conditions to be avoided	Containers should be kept closed in order to avoid contamination. Keep from extreme heat and open flames. Protect from moisture, reaction with waer can cause exothermic reaction.
Incompatible groups	Resin; Strong acids, bases, amines, oxidising agents. Hardener: Acids, metals, peroxides, oxidising agents.
Substance Specific Incompatibility	none known
Hazardous decomposition products	Carbon dioxide, carbon monoxide, oxides of nitrogen, silicon
Hazardous reactions	Exothermic reaction can occur with water. Hardener and Resin will react (polymerisation)

11. Toxicological Information

Summary

ON SKIN CONTACT: may cause irreversible damage (inflammable, erythema, oedema. Repeated or prolonged contact may cause defatting and non-allergic contact dermatitis. Absorption through the skin is possible. May cause allergic reaction by skin contact.
ON EYE CONTACT: may cause irreversible damage (burning) of the eyes (tissue damage, blindness)
IF SWALLOWED: may be harmful if swallowed, may cause damage to gastrointestinal tract (corrosive).
IF INHALED: May be harmful if inhaled. Respiratory tract irritation may occur (coughing, choking and breathing difficulties). Sensitised individual may have allergic reaction to the vapours (symptoms of asthma)
CHRONIC EXPOSURE: Cause for concern owing to the possibility that it may induce heritable mutations in the germ cells of humans. It is suspected of damaging fertility or the unborn child. The resin is a suspected human carcinogen.

NOTE: The final hardened material is considered non hazardous.

Supporting Data

Acute Oral	For the Hardener Using LD_{50}'s for ingredients, the calculated LD_{50} (oral, rat) for the mixture is between 2000 and 5,000 mg/kg. Data considered includes: Benzene-1,3-Dimethylamine (MXDA) 930mg/kg (rat), 2,4,6 Tris(dimethylaminomethyl)phenol 1673 mg/kg (rat), Phenol 100 mg/kg (cat), 282 mg/kg bw (mouse), Triethylene tetramine (TETA) 1600 mg/kg bw (mouse). For the Resin: Using LD_{50}s for ingredients, the calculated LD50 (oral, rat) for the mixture is >5,000 mg/kg. Data considered includes: Bisphenol-F epichlorhydrin resin MW<700 Bisphenol A: 15600mg/kg (mouse), 10.7mL/kg (rat), Bisphenol A diglycidyl ether resin 15600mg/kg (mouse), 10.7mL/kg (rat), Titanium dioxide >20000mg/kg (rat), Butyl glycidyl ether 2000mg/kg (rat).

	Dermal	For the Hardener: Using LD_{50}'s for ingredients, the calculated LD_{50} (dermal, rat) for the mixture is >5000 mg/kg. Data considered includes: Quartz (SiO2) data unavailable, Benzene-1,3-Dimethylamine (MXDA) 2000mg/kg (rabbit), 2,4,6 Tris(dimethylaminomethyl)phenol 1280 mg/kg (rat), Phenol 525 mg/kg bw (rat), Triethylene tetramine (TETA) 550 mg/kg bw (rabbit). For the Resin: Using LD_{50}'s for ingredients, the calculated LD50 (dermal, rat) for the mixture is >5000 mg/kg. Data considered includes: Bisphenol-F epichlorhydrin resin MW<700 Bisphenol A: >20mL/kg (rabbit), Bisphenol A diglycidyl ether resin >20mL/kg (rabbit), Titanium dioxide >10000mg/kg (hamster).
	Inhaled	For the Hardener: Using LC_{50}'s for ingredients, the calculated LC_{50} (inhalation, rat) for the mixture is between 1 and 5 mg/L (dust/mist). Data considered includes: Quartz (SiO2) data unavailable, Benzene-1,3-Dimethylamine (MXDA) 0.97mg/L (for dust mist, 4hr), Phenol 0.117 mg/L (mouse), dust/mist. For the Resin: No evidence of inhalation toxicity.
	Eye	The hardener is considered to be corrosive to the eye. The Benzene-1,3-Dimethylamine, 2,4,6 Tris(dimethylaminomethyl)phenol and phenol are corrosive to the eye. The Resin is considered to be an eye irritant. The Bisphenol resins and titanium dioxide are considered eye irritants.
	Skin	The hardener is considered to be corrosive to the skin. The Benzene-1,3-Dimethyl-amine, 2,4,6 Tris(dimethylaminomethyl)phenol and phenol are corrosive to the skin. The resin is considered to be a skin irritant. The Bisphenol resins and titanium dioxide are considered skin irritants.
Chronic	**Sensitisation**	Both parts of this product are considered to be contact sensitizers. Benzene-1,3-Dimethylamine, Butyl glycidyl ether, Bisphenol resins and Triethylene tetramine are considered contact sensitisers.
	Mutagenicity	Both parts of this mixture are considered to be suspected mutagens. Phenol and Butyl glycidyl ether are suspected mutagens and are classed 6.6B by EPA.
	Carcinogenicity	Titanium dioxide, present in the resin is classed group 2B by IARC - possibly carcinogenic to humans. Quartz present in the Hardener is a known carcinogen if present in a respirable form – not applicable for the hardener. However, if the hardened material is sanded and a fine dust is formed, the dust should be considered to be a carcinogenicity risk.
	Reproductive / Developmental	Both parts of this mixture are considered to be suspected reproductive or developmental toxicants. Phenol and Butyl glycidyl ether are suspected reproductive effectors and are classed 6.8B by EPA.
	Systemic	The mixture is considered to be a suspected target organ toxicant. Phenol, trietheylene tetramine are classed by EPA as 6.9A. Bisphenol resins are classed 6.9B.
	Aggravation of existing conditions	None known.

12. Ecological Data

Summary

The Hardener is considered harmful in the aquatic environment, and the Resin is considered toxic in the aquatic environment.

Supporting Data

Aquatic	For the Hardener: Using EC_{50}'s for ingredients, the calculated EC_{50} for the mixture is between 10 mg/L and 100 mg/L. Data considered includes: Benzene-1,3-Dimethylamine (MXDA) >100mg/l (96hr, Oncorhynchus mykiss, rainbow trout), 16mg/L (48hr, Daphnia magna), Phenol 8.9 mg/l (96hr, Oncorhynchus mykiss), 3.1 mg/l (48hr, Ceriodaphnia dubia), 150 mg/l (96hr, Selenastrum capricornutum (Algae)), Triethylene tetramine (TETA) 3.7 mg/l (96hr, Selenastrum capricornutum), 12 mg/l (48hr, Daphnia magna); >101 mg/kg (Adelaius phoenicus). For the Resin: Using EC_{50}'s for ingredients, the EC_{50} for the mixture is between 1 mg/L and 10 mg/L. The Bisphenol resins are classed 9.1B by EPA.
Bioaccumulation	No data
Degradability	Not readily biodegradable
Soil	No evidence of soil toxicity
Terrestrial vertebrate	This mixture is not considered ecotoxic to terrestrial vertebrates. See acute toxicity.
Terrestrial invertebrate	No evidence of toxicity towards terrestrial invertebrates.
Biocidal	no data
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	Rinse containers with water before disposal. Preferably re-cycle container, otherwise send to landfill or similar.

14. Transport Information

Hardener part:
Transport according to NZS 5433 (Transport of Hazardous Substances on Land). Considered a dangerous good for transport.

UN number:	2735	**Proper shipping name:**	AMINES, LIQUID, CORROSIVE, n.o.s. (contains m-phenylenebis(methylamine), phenol)
Class(es)	8	**Packing group:**	III
Precautions:	Corrosive	**Hazchem code:**	2X

Resin part:
Transport according to NZS 5433 (Transport of Hazardous Substances on Land). Considered a dangerous good for transport.

UN number:	3082	**Proper shipping name:**	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (contains bisphenol f epichlorhydrin resin with number average molecular weight <700, reaction product: bisphenol-a-(epichlorhydrin) epoxy resin (number average molecular weight)
Class(es)	9	**Packing group:**	III
Precautions:	Ecotoxic	**Hazchem code:**	3Z

15. Regulatory Information

This product is a two part substance. Both parts are approved substances under the Hazardous Substances and New Organisms Act (HSNO).
Hardener part: Approval code: HSR002658, Surface Coatings and Colourants (Corrosive) Group Standard 2006.
Resin part: Approval code: HSR002679, Surface Coatings and Colourants (Toxic [6.7]) Group Standard 2006.

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

Key workplace requirements are:	
MSDS	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 > 1000kg is stored.
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 HSR002658, Surface Coatings and Colourants (Corrosive) Group Standard 2006 Approval HSR002679, Surface Coatings and Colourants (Toxic [6.7]) Group Standard 2006 Controls, EPA. www.epa.govt.nz
CAS Number	Unique Chemical Abstracts Service Registry Number
Ceiling	Ceiling Exposure Value: The maximum airborne concentration of a biological or chemical agent to which a worker may be exposed at any time.
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	Material Safety Data Sheet (or Safety Data Sheet)
OSH - DoL	The Occupational Safety and Health Service of the Department of Labour (NZ)
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 2011	The NZ Workplace Exposure Standards Effective from 2011, published by OSH – DoL and available on their web site – www.osh.dol.govt.nz.
Other References:	Simpson Strong-tie MSDS from UK and US.

Review

Date	**Reason for review**
December 2012	Not applicable – new MSDS

Disclaimer