James Hardie Australia Pty Limited
ABN 12 084 635 558

1. IDENTIFICATION

Product Identifier	HardieFire™ Insulation
Other means of identification	None
Recommended use of the chemical and restrictions on use	Used as acoustic, thermal and fire insulation with HardieSmart™ fire rated wall systems.
Suppliers Name and Address	James Hardie Australia Pty Limited 10 Colquhoun Street Rosehill NSW 2142 Australia
Emergency phone number	13 11 03 (General Information and Emergency)

2. HAZARD IDENTIFICATION

Classification of the Hazardous Chemical	Classified as non-hazardous
Label Elements, including precautionary Statements	None
Other hazards which do not result in classification	None

3. COMPOSITION/INFORMATION ON INGREDIENTS

Identity of chemical ingredients	**CAS number**	**Concentration of ingredients (%)**
Rock wool	65997-17-3	>95
Cured binder	25104-55-6	1-5

This is a commercial product whose exact ratio of components may vary. Trace quantities of impurities are also likely. Traces of Formaldehyde may be released from the substance (<0.1%).

4. FIRST AID MEASURES

Swallowed	Do not induce vomiting. Give a glass of water to drink. If any symptoms occur seek medical advice.
Eye Contact	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Apply continuous irrigation with water for at least 15 minutes holding eyelids apart. If eye irritation persists, seek medical advice.
Skin Contact	If on skin: Wash with plenty of soap and water.
Inhaled	If Inhaled: Dust may cause irritation but not likely to be harmful by inhalation. Call a Poisons Centre or a doctor/physician if you feel unwell.
Advice to Doctor	Treat symptomatically

5. FIRE FIGHTING MEASURES

Suitable extinguishing media	Carbon dioxide, extinguishing powder, foam, fog sprays, water jets.

Specific hazards arising from the chemical	Mineral wool is non-flammable. The packaging and the resin binder may decompose in a fire resulting in carbon dioxide, and if combustion is incomplete, carbon monoxide and smoke. Water. The packaging may form toxic mixtures in air and may accumulate in sumps, pits and other low-lying spaces, forming potentially explosive mixtures
Special protective equipment and precautions for fire fighters	No special measures are required.

6. ACCIDENTAL RELEASE MEASURES

Containment	Containment of product is not required. Prevent product from entering environment as it may block drains and cause excess sediment in waterways.
Emergency Procedures	If a significant spill occurs: If there is any loose material, cover with packaging material, e.g. plastic and reseal. Recycle or transfer to container for disposal. Dispose of according to guidelines below (Section 14).
Clean-up method	This product is not considered flammable or ecotoxic. Small spills do not require any special clean up method. Larger spills should be collected. Avoid dust formation. Use a HEPA vacuum or wet clean up methods. Do not wash material down stormwater drains.
Disposal	Collect recoverable material into labelled containers for recycling or salvage. Recycle packaging wherever possible. This material may be suitable for approved landfill. Dispose of only in accord with local regulations.
Precautions	Use gloves and eye protection. See Section 8

7. HANDLING AND STORAGE

Storage	Avoid storage of harmful substances with food. Keep from extreme heat, open flames and direct sunlight. Avoid contact with incompatible substances as listed in Section 11.
Handling	Keep exposure to a minimum, and minimise the quantities kept in work areas. See section 8 with regard to personal protective equipment requirements.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

A Workplace Exposure Standard (WES) has not been established by Safe work Australia for this product. There is a general limit of 10mg/m^3 for inhalable dusts when limits have not otherwise been established.

Ingredient	**WES-TWA**	**WES-STEL**
Rock Wool	2 mg/m^3 (Inhalable dust)	Not Applicable
Cured Binder	Not Applicable	Not applicable
Formaldehyde	1 ppm	2 ppm

Appropriate engineering controls

In industrial situations, it is expected that employee exposure to hazardous chemical will be controlled to a level as far below the WES as practicable by applying the hierarchy of control. 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 dusts are high, you are advised to modify processes or increase ventilation.

Personal protective equipment (PPE)

Eyes

Avoid contact with eyes. Use safety glasses or goggles if irritant levels of fibres and dust are present. AS/NZS1336 “Recommended Practices for Eye Protection in the Industrial Environment” provides further guidance.

Skin

Protective gloves and clothing should be worn when handling mineral insulation.

To prevent irritation which occurs by contact of the loose fibres with the skin, it is advisable to wear either disposable or single-use overalls or light weight nylon overalls complete with hoods when handling the insulation material. The overalls should be close fitting at the neck wrists and ankles to prevent problems of skin irritation. Where overalls are to be laundered, they should be laundered in separate laundry facilities and not in the home.

Respiratory

In general use, a respirator is not likely to be required. A respirator should be used when airborne concentrations approach the WES (section 8), if there is air born dust or fibres. It is recommended to use an half face air purifying respirator with a minimum of a P1 particulate filter. If using a respirator, ensure that the cartridges are correct for the potential air contamination and are in good working order.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	solid odourless amorphous fibres
Odour	No odour
pH	No pH data
Melting point/freezing point	Not applicable
Boiling point and boiling range	>1090°C
Flash point	Not flammable

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Evaporation rate	No data
Flammability	Non-combustible according to AS 1530.1
Upper/lower flammability or explosive limits	No data
Vapour pressure	No data
Vapour density	No data
Relative density	80kg/m^3
Solubility	Not applicable
Partition coefficient: n-octanol/water	No data
Auto-ignition temperature	No data
Decomposition temperature	No data
Viscosity	No data
Specific heat value	No data
Particle size	No data
Volatile organic compounds content	No data
% volatile	No data
Saturated vapour concentration	No data
Release of invisible flammable vapours and gases	36 µg/m^3/hr

10. STABILITY AND REACTIVITY

Reactivity	Stable
Chemical stability	Stable
Conditions to avoid	Packaging should be kept intact in order to avoid contamination. Keep from extreme heat, open flames and direct sunlight.
Incompatible materials and possible hazardous reactions	Acids, alkalis or organic solvents.
Hazardous decomposition products	None Known

11. TOXICOLOGICAL INFORMATION

Summary

No specific data is available for this product. Where available, toxicological data has been researched and data for the mixture calculated. The results of these calculations are presented below.

Acute	**Oral**	The substance is not considered acutely toxic if ingested. Using LD50's for ingredients, the calculated LD50 (oral, rat) for the mixture is >5,000 mg/kg. Data considered includes: synthetic mineral fibres >5000mg/kg, Cured binder 7000mg/kg, Formaldehyde: 0 260 mg/kg (Guinea pig).
	Dermal	The substance is not considered acutely toxic by dermal contact. Using LD50's for ingredients, the calculated LD50 (dermal, rat) for the mixture is >2,000 mg/kg. Data considered includes: Synthetic mineral fibres >5000mg/kg, Cured binder no data, Formaldehyde 270 mg/kg (rabbit).
	Inhaled	The substance is not considered acutely toxic if inhaled, however there may be irritation of the respiratory tract if dust is inhaled.

	Eye	The mixture is considered to be an eye irritant. The dust of the mineral fibres (rock wool) may cause eye irritation.
	Skin	Insulation wools can cause acute symptoms such as irritation and itching of the eyes, nose, respiratory tract and the skin. Skin reactions are generally transient and superficial; the rash is an irritant response to mechanical microtrauma, arising from the relatively large (non-respirable) fibre fraction (over 4 to 5 microns in diameter).
Chronic	**Sensitisation**	No evidence of skin sensitisation or respiratory sensitisation.
	Mutagenicity	No ingredient present at concentrations > 0.1% is considered a mutagen.
	Carcinogenicity	IARC concluded its re-evaluation (October 2001) of the carcinogenic risk of mineral wool fibres. The result was a reclassification of the fibres from Group 2B (possibly carcinogenic to humans) to Group 3 (not classifiable as to the carcinogenicity to humans). Epidemiological studies published during the 15 years prior to the 2001 IARC review provide no evidence of increased risk of cancer from occupational exposure during manufacture or use of mineral wool fibre. Carcinogenicity classification not triggered.
	Reproductive/Developmental	No ingredient present at concentrations > 0.1% is considered a reproductive or developmental toxicant or have any effects on or via lactation.
	Systemic	The most relevant evidence points to an absence of risk for developing serious long-term respiratory disease from typical uses of glass wool fibre. There may be some irritation of the respiratory tract.
	Aggravation of existing conditions	None known

12. ECOLOGICAL INFORMATION

Summary

No specific data is available for this product. Where available, ecotoxicological data has been researched and data for the mixture calculated. The results of these calculations are presented below.

Ecotoxicity	The mixture is not considered to be toxic in the aqueous environment.
Persistence and degradability	Mineral fibres area not considered biopersistent.
Bioaccumulative potential	No data
Mobility in soil	No data
Other adverse effects	None

13. DISPOSAL CONSIDERATIONS

Safe handling and disposal methods	There are no product-specific restrictions, however, local environmental legislative requirements may apply
Disposal of any contaminated packaging	Preferably re-cycle packaging, otherwise send to landfill or similar.
Environmental regulations	Dispose of in accordance with local regulations.

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14. TRANSPORT INFORMATION

Not classified as a Dangerous Good by the Australian Code for the Transport of Dangerous Goods by Road and Rail

UN number	Not Applicable
Proper shipping name	Not Applicable
Transport hazard class(es)	Not Applicable
Packing group	Not Applicable
Environmental hazards	Not Applicable
Special precautions during transport	Not Applicable
Hazchem Code	1T (recommended, no signage required)

15. REGULATORY INFORMATION

Safety, health and environmental regulations specific for the product in question	None
Poisons Schedule number	Not Applicable

16. OTHER INFORMATION

Date of preparation	25/09/2014
Key abbreviations or acronyms used	
AS 1530.1	AS 1530.1-1994 Methods for fire tests on building materials, components and structures - Combustibility test for materials
CAS Number	Unique Chemical Abstracts Service Registry Number
EC_{50}	Ecotoxic Concentration 50% – concentration in water which is fatal to 50% of a test population (e.g. daphnia, fish species)
HAZCHEM Code	Emergency action code of numbers and letters that provide information to emergency services, especially fire fighters
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)
ppm	parts per million
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 in a work day.