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MATERIAL SAFETY DATA SHEET

MSDS NUMBER: **0033** **In Accordance with NOHSC: 2011 (2003)**

DATE OF ISSUE: **6 September 2004**

1 IDENTIFICATION OF MATERIAL AND MANUFACTURER

Trade Name: ISOFRAX PUMPABLE MASTIC
Synonyms: Not Applicable
CAS No: Not Allocated

Recommended Use: High temperature expansion joint mastic, insulating gap filler.

Manufacturer/ Supplier: Unifrax Australia Pty Ltd
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2 HAZARD IDENTIFICATION

Classified as not hazardous according to the criteria of NOHSC (National Occupational Health and Safety Commission).

Irritant Effects:
Mild irritation to skin may result from exposure to this product; however, this effect is usually temporary. Pre-existing skin and respiratory conditions including dermatitis, asthma or chronic lung disease might be aggravated by exposure.

Risk Phrases: None assigned

Safety Phrases: None assigned

3 COMPOSITION/ INFORMATION ON INGREDIENTS

Ingredient	CAS No	Proportion (wt%)
Water	7732-18-5	>60 %
Alkaline earth silicate fibres* (Isofrax)	436-083-99-7	10-<30 %
Silicon dioxide, amorphous (fumed silica, colloidal silica)	7631-86-9	<10 %
Remaining ingredients not determined to be hazardous and/or hazardous ingredients below the concentration cut-off for classification.		

*Alkaline earth silicates (AES) consisting of silica (70-80wt%) and magnesia (18-27wt%).

4 FIRST AID MEASURES

Eye contact: Flush immediately with large amounts of water for at least 15 minutes after removing any contact lenses. Eyelids should be held away from the eyeball to ensure through rinsing. Do not rub eyes. Seek medical advice as good work safety practice in all cases of eye contamination.

Skin contact: In case of skin irritation, remove contaminated clothing. Rinse affected areas thoroughly with water and wash gently with soap and water. Do not rub or scratch exposed skin. Using a skin cream or lotion after washing may be helpful. If effects persist, seek medical advice.

Inhalation: Inhalation of the product is not anticipated. If it does take place, remove exposed person/s from source of exposure to fresh air, drink water and blow nose. Recovery should be rapid, but if effects persist seek medical advice.

Ingestion: Ingestion is unlikely, but if it does occur do not induce vomiting, rinse mouth with water immediately. Product should be excreted naturally but if effects persist, seek medical attention.

Advice to doctor: Acute effects are essentially temporary irritation in nature.

Additional Information: Pre-existing skin and respiratory conditions including dermatitis, asthma or chronic lung disease might be aggravated by exposure.

5 FIRE FIGHTING MEASURES

Non-combustible product. Packaging and surrounding materials may be combustible. Use extinguishing agent suitable for surrounding combustible materials.

No special measures are required to protect the product from fire and explosion.

No Hazchem code allocated.

6 ACCIDENTAL RELEASE MEASURES

Where possible, use a vacuum cleaner fitted with HEPA filter to clean up spilled product. Use dust suppressant (eg water) where sweeping is necessary. Do not use compressed air for clean up. Do not flush spillage to drain and prevent from entering natural watercourse. Refer to personal protection and exposure controls section below during clean up of spilled product.

Dispose of the contaminated product as waste according to section 13.

7 HANDLING AND STORAGE

Handling

(i) Installation of product:

- Regular good housekeeping will minimise dust generation from the handling processes, especially when the product is allowed to dry.
- Do not handle product with bare hands, wear rubber gloves
- Use hand tools to mould, shape, form or apply mastic product.
- Clean up all waste or excess product prior to completion of the job and seal in plastic bags.

(ii) Removal of product in same condition as installed but in a dry state:

- Adopt work practices designed to minimise the generation of any airborne dust/fibres eg lightly spraying of the product with water immediately before removal takes place.
- In large removals of several days/weeks duration, clearly designate the removal area and erect barriers to prevent casual access.
- On completion of job, seal all waste product in bags prior to removal from the designated work area. Vacuum the work area with a vacuum cleaner fitted with a HEPA filter. If a vacuum cleaner is not available, cleaning may be done by wet mopping and wiping.

(iii) Removal of embrittled product likely to contain cristobalite (see section 8 below) or the removal is being conducted in a poorly ventilated or enclosed space:

- Adopt work practices designed to minimise the generation of any airborne dust/fibres eg lightly spraying of the product with water immediately before removal takes place.
- In large removals of several days/weeks duration, clearly designate the removal area and erect barriers to prevent casual access.
- Provide separate changing areas to minimise cross contamination of general work areas.
- Maintain good housekeeping by cleaning the work area regularly with a vacuum cleaner fitted with a HEPA filter.
- On completion of job, seal all waste product in bags prior to removal from the designated work area. Vacuum the work area with a vacuum cleaner fitted with a HEPA filter.

Storage

- Store the product in a cool and dry place while awaiting use.
- Always use sealed and visibly labelled containers.
- Avoid damaging the packaging and keep closed when not in use.

- Empty containers, which may contain debris, should be cleaned before disposal or recycling.

8 EXPOSURE CONTROLS AND PERSONAL PROTECTION

National Exposure Standards
No exposure standard has been established for this product by NOHSC, however National Exposure Standards for the ingredients are shown below:

Ingredient	TWA		STEL	
	fibres/ml	mg/m^3	fibres/ml	mg/m^3
Synthetic mineral fibres*	0.5	2 (inspirable dust)	-	-
Fumed silica (Silicon dioxide, amorphous)	-	2 (respirable dust)	-	-

* There is no Exposure Standard specifically for AES fibres so the Exposure Standard of 0.5 fibres/ml for all forms of synthetic mineral fibres has been applied. For situations where almost all the airborne material is fibrous, a secondary, yet complementary, Exposure Standard of $2mg/m^3$ of inspirable dust is applicable to minimise upper respiratory tract irritation. This dust standard is not to take precedence over the respirable fibre standard.

Engineering Control Measures
Review the application in order to identify potential sources of dust exposure. This product is mastic. Once dried out, it may generate dust.

Where possible, use exhaust ventilation and dust collection devices to reduce airborne fibre and dust levels. Maintain workplace clean. Use vacuum cleaner fitted with a HEPA filter. Avoid brushing and compressed air.

Where engineering control measures are not feasible or do not reduce airborne fibre/dust levels to below 0.5fibres/ml and/or $2mg/m^3$, or product has been exposed to greater than 900°C, more extensive precautions are required as outlined below in "Personal Protective Equipment" .

Personal Protective Equipment

(i) For the installation of the product, the following is recommended:

Eye/Face protection: Where overhead work is involved, wear goggles or safety glasses with side shields and head covering.

Skin protection: Wear long sleeve, loose fitting clothing and rubber gloves. Clothing should be washed separately from other clothing to avoid cross-contamination.

Respiratory protection: For fibre/dust concentrations below the Exposure Standards (expected during installation of product as per handling specified in this material safety data sheet), respiratory protection is not required. A half-face respirator (Class P1, as classified under AS/NZS1715 & 1716) may be used on a voluntary basis.

(ii) For the removal of the product in same condition as installed but in a dry state, the following is recommended:

Eye/Face protection: Wear goggles or safety glasses with side shields and head covering.

Skin protection: Wear disposable coveralls or long sleeve, loose fitting clothing and rubber gloves. Clothing should be washed separately from other clothing to avoid cross-contamination.

Respiratory protection: Wear a half-face respirator (Class P1 or P2, as classified under AS/NZS1715 & 1716).

(iii) When the product has been exposed to temperatures greater than 900°C for sustained periods, the amorphous silicate (AES fibres and filler) begin to transform to mixtures of crystalline phases including cristobalite, a form of crystalline silica. The occurrence and extent of crystalline phase formation is dependant on the duration and temperature of exposure and the reaction occurs at the "hot-face" of the product. The presence of cristobalite can be confirmed only through laboratory analysis.

The National Exposure Standard for cristobalite is 0.1mg/m^3 TWA (Interim). The International Agency for Research on Cancer (IARC) has classified crystalline silica inhaled in the form of quartz or cristobalite, as Group 1 "Established human carcinogen".

For the removal of the embrittled product likely to contain cristobalite or the removal is being conducted in a poorly ventilated or enclosed space, the following is recommended:

Eye/Face protection: Wear goggles or safety glasses with side shields and head covering.

Skin protection: Wear disposable coveralls or long sleeve, loose fitting clothing and rubber gloves. Clothing should be washed separately from other clothing to avoid cross-contamination.

Respiratory protection: Wear a Class P2 half-face respirator (as classified under AS/NZS1715 & 1716). In some circumstances where excessive levels of dust are created, the limitations of filter loading capacity and facial seal may necessitate the use of:

- A full-face (Class P3) cartridge respirator; or
- A full-face (Class P3), powered air-purifying respirator; or
- A full-face, positive pressure, demand airline respirator.

9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Off-white paste	Vapour Pressure:	Not applicable
pH:	8	Vapour Density:	Not applicable
Odour:	None	Solubility:	Not available
Flammability:	None	Density:	Not available
Melting point:	Not available		

Length weighted geometric mean diameter: 2-3µm

10 STABILITY AND REACTIVITY

Conditions to avoid:	None
Incompatible materials:	None
Hazardous decomposition products:	When the product has been exposed to temperatures greater than 900°C for sustained periods, the amorphous silicate (AES fibres and filler) begin to transform to mixtures of crystalline phases including cristobalite, a form of crystalline silica. See Section 8 (iii) above for further information.

11 TOXICOLOGICAL INFORMATION

Irritant Properties

The definition of "irritant" contained in Appendix A of the Hazard Communication Standard 29 CFR 1900.1200 published by OSHA (Occupational Safety & Health Administration) of the U.S. Department of Labour is "…a reversible inflammatory effect on living tissue by chemical action…" AES fibres in this product are an inert product, which do not interact chemically with exposed skin. When tested using approved methods (European Commission Directive 67/548/EC, Annex V, Method B4- a European Union publication), AES fibres give negative results for irritation. All man made mineral fibres, like some natural fibres, can produce a mild irritation resulting in itching or rarely, in some sensitive individuals, in slight reddening. Hence, there is a possibility that exposure to this product may cause temporary mechanical irritation to the eyes, skin or respiratory tract (nose, throat, lungs). Unlike other irritant reactions, this is not the result of allergy or chemical skin damage but as mentioned earlier, it is caused by a temporary mechanical effect. This temporary irritation can be mitigated with proper handling practices designed to minimise exposure and the use of personal protective equipment.

Other Animal Studies

The AES fibres in this product possess a fibre chemistry within the definition set by the European Union under the classification of synthetic mineral fibres as a "man-made vitreous fibre with random orientation with alkaline oxide and alkaline earth oxide ($Na_2O + K_2O + CaO + MgO + BaO$) content greater than 18% by weight". These fibres have been designed to allow rapid clearance from lung tissue. This low biopersistence has been confirmed in many studies on AES fibres using European Union protocol ECB/TM/27 (rev 7) Nota Q, Directive 97/69/EC. The results for the short term biopersistence test by inhalation was 6 days, well below the regulatory threshold of 10 days cited in the Directive 97/69/EC. Based on these testing results, AES fibres based products are not regarded as potential carcinogens and they are exempt from European (and therefore Australian) classification as such. When inhaled, even at very high doses, they do not accumulate to any level capable of producing a serious adverse biological effect. In lifetime chronic studies there was no exposure-related effect more than would be seen with any "inert" dust. Subchronic studies at the highest dose achievable produced, at worst, a transient mild inflammatory response. Fibres with the same ability to persist in tissue do not produce tumours when injected into the peritoneal cavity of rats.

Epidemiology

This product has not been the subject of epidemiological study. The IARC monograph on the evaluation of carcinogenic risks to humans from man-made vitreous fibres reports that the Working Group elected

not to make an overall evaluation of the newer developed fibres designed to be less biopersistent such as the alkaline earth silicate fibres. This decision was "made in part because no human data were available, although such fibres that have been tested appear to have low carcinogenic potential in experimental animals, …"

12 ECOLOGICAL INFORMATION

This product is an inert material, which remains stable over time.
No adverse effects of this product on the environment are anticipated.

13 DISPOSAL CONSIDERATIONS

Waste from this product may generally be disposed of at landfill, which has been licensed for this purpose. State and/or National regulations and/ or expert advice should be sought when disposing the after use product.

14 TRANSPORT INFORMATION

This product is not classified as dangerous good by the criteria of the Australian Code for the Transport of Dangerous Goods by Road and Rail.

15 REGULATORY INFORMATION

Not Applicable.

16 OTHER INFORMATION

Date of Preparation of Material Safety Data Sheet: 06 September 2004

Literature References:

- National Occupational Health and Safety Commission, "Adopted National Exposure Standards for Atmospheric Contaminants in the Occupational Environment [NOHSC:1003 (1995)]", in *Exposure Standards for Atmospheric Contaminants in the Occupational Environment: Guidance Note and National Exposure Standards*. AusInfo, Canberra.

- National Occupational Health and Safety Commission, *List of Designated Hazardous Substances* [NOHSC:10005 (1999)], AusInfo, Canberra, 1999.

- National Road Transport Commission and Federal Office of Road Safety, *Australian Code for the Transport of Dangerous Goods by Road and Rail*, 6th Edition, Australian Government Publishing Service, Canberra, 1998.

- National Occupational Health and Safety Commission, *National Code of Practice for the Safe Use of Synthetic Mineral Fibre*s [NOHSC:2006 (1990)], AusInfo, Canberra, 1990

- National Occupational Health and Safety Commission, *National Standard for Synthetic Mineral Fibre*s [NOHSC:1004 (1990)], AusInfo, Canberra, 1990

- International Agency for Research on Cancer, *IARC Monographs on the Evaluation of the Carcinogenic Risk of Chemicals to Humans, Volume 81 Man-Made Vitreous Fibres*, Lyon, France, IARC Press, 2002

End of Material Safety Data Sheet

Disclaimer

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