
MATERIAL SAFETY DATA SHEET

Classified as Hazardous according to criteria of Worksafe Australia

1. IDENTIFICATION OF MATERIAL & SUPPLIER

Product Names: FIBERMAX[®]

Other Names: MMMF
MMVF
SMF

Ship. Name (CSN): None Allocated

UN Number: None Allocated
DG Class None Allocated
Packaging Group None Allocated
Hazchem Code None Allocated
Poisons Schedule Not Scheduled
Product Use Thermal Insulation

Supplier: ITM CO. LIMITED
Kakihara Ringyo Building
10 – 1 Nihonbashi Ohdenma – CHO
Chuo-Ku
Tokyo **Japan** 10 103-00
Unifrax Australia Pty. Ltd
336 Settlement Road
Thomastown
Victoria 3074
Australia

Contact Details: See Page 9.

2. HAZARDS IDENTIFICATION

Flammability

Fire Hazards: Non flammable

Explosive Hazards: Non explosive

Health Hazards: May cause temporary irritation to eyes, skin, throat, nose and upper respiratory system and disturbances to Gastro intestines

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3. COMPOSITION AND INFORMATION ON INGREDIENTS

Ingredients:

<u>Name</u>	<u>CAS</u>	<u>Proportion</u>
Alumino silicate, mullite fibre	1302-93-8	100%

4. FIRST AID MEASURES

Ingestion	Do not induce vomiting; drink plenty of water.
Eye	Flush immediately with large amounts of water for at least 15 minutes. Eyelids should be held away from the eyeball to ensure thorough rinsing. Do not rub eyes.
Skin	If skin becomes irritated, remove contaminated clothing. Wash area of contact thoroughly with soap and water. Do not rub or scratch exposed skin. Using a skin cream or lotion after washing may be helpful.
Inhalation	Remove exposed person/s from source of exposure, to fresh air.
Advice to Doctor	Acute effects are essentially irritant in nature. Refer to 'OTHER INFORMATION - Toxicology'.

5. FIRE FIGHTING MEASURES.

Fire Explosion Hazard:	Not Flammable and not explosive.
Hazardous Reactions/ Decomposition Products	Refer to SAFE HANDLING INFORMATION
Hazchem Code:	None Allocated.

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6. ACCIDENTAL RELEASE MEASURES

Spills

Pick up large pieces and place in containers. Where possible, use vacuum cleaner to clean up smaller spilled material. Refer to removal procedures in use and handling.

7. HANDLING & STORAGE

Storage & Transport:

No special Storage or Transport requirements.

Handling:

In the installation of unbonded materials, the following handling and installation procedures are recommended:

- a) All installation procedures should be designed to minimise the liberation of any airborne fibre or dust.
- b) In large installations of several days/weeks duration, the installation area should be clearly designated and barriers erected to limit access.
- c) The materials should be stored in sealed plastic bags or similar containers until installation is to proceed. These containers should be opened within the designated work area when work is to start.
- d) Where possible, materials should be delivered in sizes such that a minimum of handling and machining is required. However when cutting or drilling is required, these should be done with hand tools fitted with local exhaust extraction.
- e) Empty storage bags should be folded and stored in a waste container along with any waste materiel.
- f) Upon completion of the job, all excess materials should be sealed in bags prior to removal from the designated work area. The work area should be vacuumed using an industrial vacuum cleaner. Wet mopping and wiping can be utilised if an industrial vacuum cleaner is not available.

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7. Handling & Storage cont'd:

For the removal of materials the following procedures are recommended:

- a) All installation procedures should be designed to minimise the liberation of any airborne fibre or dust.
- b) In large installations of several days/weeks duration, the installation area should be clearly designated and barriers erected to limit access.
- c) Upon completion of the job, all excess materials should be sealed in bags prior to removal from the designated work area. The work area should be vacuumed using an industrial vacuum cleaner. Wet mopping and wiping can be utilised if an industrial vacuum cleaner is not available.

For the removal of embrittled materials the following procedures in particular the selection of respiratory protection should be implemented:

- a) The removal area should be signposted and contained, where possible, to minimise the transfer of dust to other work areas.
- b) Separate change areas should be provided to minimise the transfer of dust to general work areas.
- c) Where workable, the spent material should be wetted to suppress dust generation.
- d) Waste shall be placed in containers, plastic bags or other methods which prevent fibre and/or dust emission, and disposed of in accordance with the local waste disposal authority requirements.
- e) The removal area should be cleaned using an industrial vacuum cleaner.
- f) Once visible dust has been cleaned up, containment material should be removed in a manner that minimises the liberation of any trapped dust.

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8. EXPOSURE CONTROLS & PERSONAL PROTECTION

Exposure Standards 0.5 fibre/ml for SMF (HOHSC 1995)

Engineering controls Where possible use local exhaust ventilation.

Personal Protection

Personal Protection Equipment

The National Code of Practice for the Safe Use of Synthetic Mineral Fibres (NOHSC 1990) advises the use of the following PPE that for installation and removal of both bonded and unbonded ceramic fibre material.

- a) Disposable coveralls or long sleeve, loose fitting clothing and gloves (launderable clothing should be washed separately from other clothing).
- b) Where overhead work is involved, goggles and head covering should be worn; and
- c) A half-face (P1 or P2) respirator should be worn during work in enclosed or poorly ventilated spaces, or where evidence suggests that respirable fibre levels may exceed 0.5 f/ml.

For removal of embrittled or heat affected materials the following personal protective equipment should be used by all personnel directly involved in the removal work;

- a) Disposable coveralls or long sleeve, loose fitting clothing and gloves (launderable clothing should be washed separately from other clothing).
- b) Where overhead work is involved, goggles and head covering should be worn. Eye protection would be provided as an integral component of a full-face respirator
- c) A P2 respirator provides the necessary protection factor for this task.

However, 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 P3 cartridge respirator, or

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8. Exposure Controls & Personal Protection cont'd:

a full face P3 powered air-purifying respirator or
a full faced positive pressure demand airline
respirator

All respiratory devices should be tested for compliance
with AS/NZS 1715 & AS/NZS 1716.

9. PHYSICAL & CHEMICAL PROPERTIES

Appearance	White fibrous material – Nil odour.
Melting Point	>1800° c
Boiling Point	Not applicable
Vapor Pressure	Not applicable
Specific Gravity	2.5 – 2.7
Flash Point	None
Flamm. Limit LEL	Not applicable
Solubility in Water	Not applicable

10. STABILITY & REACTIVITY

Stability: Stable under normal conditions of use.

**Hazardous Reactions /
Decomposition Products** Incompatible with hydrofluoric acid and concentrated alkali.

11. TOXICOLOGICAL INFORMATION

Fibremax Mullite fibre has a relatively durable chemistry, as measured by *in-vitro* testing methods.

Polycrystalline Aluminosilicate fibers have not been specifically classified.

In 1997 the International Agency for Research on Cancer (IARC) reviewed the

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11. Toxicological Information cont'd:

epidemiological and animal toxicology data on SMF and classified the group as possible human carcinogens (IARC Group 2B). IARC included Fibermax Mullite fibre, among other fibre types such as Saffil and Nextel 312, in the same category.

12. ECOLOGICAL INFORMATION

Not available

13. DISPOSAL CONSIDERATIONS

Waste Disposal:

Waste shall be placed in containers, plastic bags or other methods which will prevent Fiber and/or dust emission and disposed of in accordance with the local waste disposal authority requirements. There may be specific regulations at the Local, State or Federal level that pertain to this material.

14. TRANSPORT INFORMATION

Not defined as a Dangerous Good according to the Australian Code for the Transport of Dangerous Goods by Road and Rail.

UN Number	None Allocated
Shipping Name (CSN)	None Allocated
DG Class	None Allocated
Packaging Group	None Allocated
Hazchem Code	None Allocated
Poisons Schedule	Not Scheduled

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15. REGULATORY INFORMATION

Risk Statement:	R36/37/38 Irritating to eyes, nose and throat and upper respiratory system and skin.
Safety Statement:	S22 Do not breathe dust. S52 Avoid contact with eyes. S38 If insufficient ventilation, wear suitable respiratory equipment. S40 To clean floor and all objects contaminated by this material, use AS approved HEPA fitted vacuum cleaner. S36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
Hazard Category:	Harmful, irritant.
Poisons Schedule:	Not scheduled.

16. OTHER INFORMATION

RCF DEVITRIFICATION

As produced, all RCG fibers are vitreous (glassy) materials which do not contain crystalline silica. Continued exposure to elevated temperatures may cause these fibers to devitrify (become crystalline). The first crystalline formation (mullite) begins to occur at approximately 985° C (1805° F). Crystalline phase silica may begin to form at temperatures of approximately 1200° C (2192° F). The occurrence and extent of crystalline phase formation is dependent on the duration and temperature of exposure, fiber chemistry and/or the presence of fluxing agents. The presence of crystalline phases can be confirmed only through laboratory analysis of the "hot face" fiber.

IARC's evaluation of crystalline silica states "Crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (Group 1)" and additionally notes "carcinogenicity in humans was not detected in all industrial circumstances studied" (IARC Monograph Vol. 68, 1997). NTP lists all polymorphs of crystalline silica amongst substances which may "reasonably be anticipated to be carcinogens".

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IARC and NTP did not evaluate after-service RCF, which may contain various crystalline phases. However, an analysis of after-service RCF samples obtained pursuant to an exposure monitoring agreement with the USEPA, found that in the furnace conditions sampled, most did not contain detectable levels of crystalline silica. Other relevant RCF studies found that (1) simulated after-service RCF showed little, or no, activity where exposure was by inhalation or by intra-peritoneal injection; and (2) after-service RCF was not cytotoxic to macrophage-like cells at concentrations up to 320mg/cm² - by comparison, pure quartz or cristobalite were significantly active at much lower levels (circa 20mg/cm²).

CONTACT DETAILS:

Contact: During Business Hours Ph: +61 3 9463 7100

Emergency / After Hours Contact: Peter Willoughby
Ph: 0409 288 917

References: Replaces MSDS dated 19 March 2012.

NOTICE: *The information presented herein is based on data considered to be accurate as of the date of preparation of this Material Safety Data Sheet. However, no warranty or representation, express or implied, is made as to the accuracy or completeness of the foregoing data and safety information, nor is any authorisation given or implied to practise any patented invention without licence. In addition, no responsibility can be assumed by the vendor for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practices, or from any hazards inherent in the nature of the product.*

.....End of Report.....

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Unifrax Australia Pty. Ltd.

336 Settlement Road
Thomastown, VIC 3074

ACN 093 625 757



FIBERMAX[®]

Ph: (03) 9463 7100 Fax: (03) 9464 5472

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