MATERIAL SAFETY DATA SHEET

Date of Issue: 1/3/2014

PRODUCT NAME

ISOWOOL 1400

Classified as Hazardous according to the criteria of Worksafe Australia

COMPANY DETAILS

Company Name: Walker Ceramics
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IDENTIFICATION

Product Name: **Isowool 1400**

Hazard Classification **Hazardous** (in accordance with Safe Work Australia criteria)

Risk Phrase **R49** May cause cancer by inhalation
R38 Irritating to skin

Manufacturer's Product Code/Name:
Isowool 1400 Blanket
Isowool 1400 Folded Modules
Isowool 1400 Board
Isowool 1400 Bulk Fibre

UN Number: None allocated
DG Classification: None allocated
Hazchem Code: None allocated
Poisons Schedule Number: None allocated
Product Use: Thermal Insulation

Physical Data & Other Properties

Appearance: White fibrous material
Melting Point: >1800^{o} C
Boiling Point: N/A
Vapour Pressure: N/A
Specific Gravity: N/A
Flash Point: N/A
Flammability Limits: N/A
Solubility in Water: Insoluble

Ingredients

Chemical Name	CAS Number	Proportion
Ceramic Fibre (alumino silicate) Refractory Ceramic Fibre (RCF) MMVF SMF	65997-17-3	99-100 %

Other Information: Remaining components not determined to be hazardous and/or hazardous components present less than 1.0% (0.1% for carcinogens)

HEALTH HAZARD INFORMATION

Acute Health Effects

Swallowed: If ingested in sufficient quantity may cause temporary gastric irritation.
Eye: Physical irritation. Abrasive action may cause damage to outer surface of the eye.
Skin: May cause irritation and inflammation due to mechanical action of fibre ends.
Inhalation: Irritation to nose, throat and upper respiratory tract.

Chronic Health Effects: Refer to **OTHER INFORMATION Toxicology**

First Aid

Swallowed: Drink water, do not induce vomiting.
Eye: Flush continuously with water for 15 mins, eyelids held open, do not rub eyes.
Skin: If skin becomes irritated remove clothing wash areas of contact with soap and water. Using a skin cream or lotion may be helpful in reducing irritation.
Inhalation: Remove exposed person to fresh air.

Advice to Doctor: Treat symptomatically for irritant effects see **OTHER INFORMATION**

PRECAUTIONS FOR USE

Exposure Standards 0.5 fibre/ml (In accordance with Safe Work Australia, HSIS)

Engineering Controls Where possible use local exhaust ventilation.

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 effected ceramic 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
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.

Flammability: Non flammable

SAFE HANDLING INFORMATION

Storage & Transport: Keep dry. No special storage or transport requirements.

Use & Handling In the installation of **unbonded** materials, the following handling and installation procedures are recommended.

a) All installation practices should be designed to minimise the liberation of any airborne fibre or dust. In large installations of several days/weeks duration, the installation area should be clearly designated and barriers erected to limit access
b) The ceramic fibre 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.
c) 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. The exhaust from such extraction
d) Empty storage bags should be folded and stored in a waste container along with any waste material.
e) 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 ceramic fibre materials the following procedures are recommended.

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

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 & Handling**

Waste Disposal: Waste should be placed in containers, plastic bags or other methods which prevent fibre 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.

Fire/Explosion Hazard Not flammable and not explosive

OTHER INFORMATION

Toxicology: The potential for SMF fibres to produce health effects has been the subject of extensive investigations over a number of decades. The Australian Refractory Ceramic Fibre Industry Association (ARCFIA) is continuing to support the necessary investigations and will make all data available to interested parties. Information will be updated as studies are completed and reviewed. The following is a review of the results to date:

EPIDEMIOLOGY: Extensive investigations of ceramic fibre production workers have been ongoing for more than 10 years. The preliminary evidence is as follows:

1. There is no evidence of any fibrotic lung disease (interstitial fibrosis) whatsoever on X-ray.
2. There is no evidence of any lung disease among those employees exposed to ceramic fibres that have never smoked.
3. A statistical "trend" was observed in smokers between slight decreases in measures of pulmonary function and the duration of exposure to ceramic fibre however this trend is similar to that observed in smokers who work in other industries.
4. Pleural plaques (thickening along the chest wall) have been observed in a small number of employees in overseas plants who have had long duration of employment. A repeat study found inconsistencies in detecting such pleural plaques. No pleural plaques have been found in the Australian manufacturing workforce. There are several occupational and non-occupational causes for pleural plaques and it is generally considered that they are not indications of "pre-cancer" nor are they associated with any measurable effect on lung function.

TOXICOLOGY: A number of studies have been conducted on the health effects of inhalation exposure of rats and hamsters. In a lifetime (6 hours per day, 5 days a week for 24 months) nose only inhalations study, rats exposed to Maximum Tolerated Dose (30 mg/M^3, 200 fibres/ml) developed progressive lung damage (interstitial fibrosis) and cancer of the lung and mesothelioma. In contrast, hamsters similarly exposed developed interstitial fibrosis and mesothelioma but no lung cancers. A multiple dose study (3, 9, 16 mg/M^3; 25, 75, and 150 fibres/ml) found a dose related parenchymal fibrosis however in the lowest exposed group (25 fibres/ml) no irreversible effects were found that could be attributed to ceramic fibre exposure. There was no statistical excess of lung tumours at any dose. One rat developed a mesothelioma in the 75 fibre/ml exposure group.

In 1997 the International Agency for Research on Cancer (IARC) reviewed the epidemiological and animal toxicology data on SMF (including ceramic fibre, glasswool, rockwool & slagwool) and classified the group as possible human carcinogens (IARC Group 2B).
Other information:
In service this material may see conditions, temperatures greater than 1100° C for extended periods of time, to partially transform the silica present to a complex (disordered) crystalline phase form. If this occurs the precautions associated with the removal of embrittled fibre material should be followed. Neither unheated nor after service RCF demonstrate any cytotoxity to macrophage-like cells in vitro. For after-service RCF administered to rats by inhalation, irreversible fibrosis only develops after 12 months at high doses. After service RCF shows no significant carcinogenicity in rats when administered by inhalation or intraperitoneal injection. Because high temperature insulation wools are such efficient insulators only a small proportion of the product volume develops crystalline phases when the hot face is above the devitrification temperature.

CONTACT POINT

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