

Safety Data Sheet

Mastic 85

Revision Date: 2022-09-13
Revision 4



Classification Symbol(s)	Personal Protective Equipment (PPE)	Transport Symbols

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Commodity code	02008-M85
Product Name	Mastic 85
Synonyms	Insural Mastic 85
Product description	This MSDS supports the product as a non-cast powder or granular material, or a mastic or moldable material.
Product use	Asbestos-free durable and insulating refractory composition designed for the fabrication of launders; and the jointing, bedding, and patching of precast refractory shapes.

Details of the supplier
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Australia

Pyrotek (61) (0)2 8868 2000
Email: SDS@pyrotek-inc.com REACH email: REACH@pyrotek-inc.com

Emergency Telephone Number CHEMTREC 1800 752 022 (24 hrs), Pyrotek Australia 1800 679 422

2. Hazards Identification

Carcinogenicity	Category 1B
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Signal word: DANGER

Hazard statements
H350i - May cause cancer by inhalation

Precautionary statements
P202 - Do not handle until all safety precautions have been read and understood
P281 - Use personal protective equipment as required
P308 + P313 - IF exposed or concerned: Get medical advice/attention
P501 - Dispose of contents/ container to an approved waste disposal plant

Precautionary Statements - Prevention

Obtain special instructions before use
 Do not handle until all safety precautions have been read and understood
 Avoid breathing dust/fume/gas/mist/vapors/spray
 Use only outdoors or in a well-ventilated area

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant



Poison Schedule Number Not applicable

Further information

This product contains Refractory Ceramic Fibres (RCF), Index Number 650-017-00-8 (CLP Annex VI), CAS number: 142844-00-6, also known under the trade name Fiberfrax®. Fiberfrax® is a trademark of the Unifrax Corporation and have been registered successfully with ECHA under the following registration number: 01-2119458050-50-xxxx. Use of the products is restricted to "professional users" for application as thermal insulation, heat shields, heat containment, gaskets and expansion joints at temperatures up to 1260°C (2300°F) in industrial furnaces, ovens, kilns, boilers and other process equipment and in the aerospace and automotive industries. Products are not intended for direct sale to the general public

Synthetic vitreous fibers (SVF) are fibrous inorganic substances classified into three general groups: fibrous glass (glasswool and glass filament), mineral wool (rockwool and slagwool), and refractory ceramic fibers (RCF). Devitrification (conversion of fibers to a crystalline state) may occur when SVF materials are exposed to high temperatures producing disordered crystalline silica forms.

3. Composition/information on Ingredients

Chemical name	CAS No.	EC No	Weight-%	Classification based on individual ingredients of the mixture	Australia - NOHSC Labelling
Silica, Non-Crystalline - Amorphous	7631-86-9	231-545-4	> 60%		
Refractory Ceramic Fibre (RCF)	142844-00-6	n/a	10 - 30%	Carc. 1B (H350i)	C>=0.1%: T: R49 (except those specified elsewhere in HSIS) T; R:49 S:53-45 (special purpose fibres, except those specified elsewhere in HSIS)
Calcium Fluoride	7789-75-5	232-188-7	< 10%		
Silica, Crystalline - Cristobalite	14464-46-1	238-455-4	< 1%		
Silica, Crystalline - Quartz	14808-60-7	238-878-4	< 1%	STOT RE 2 (H373)	

All other ingredients determined not to be hazardous according to GHS criteria

4. First Aid Measures

General advice	Show this safety data sheet to the doctor in attendance. If symptoms persist, call a physician.
Inhalation	Remove to fresh air. If symptoms persist, call a physician.
Skin Contact	Wash off with soap and water. Do not rub. If skin irritation persists, call a physician.
Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Do not rub. If symptoms persist, call a physician.
Ingestion	Clean mouth with water and drink afterwards plenty of water. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Consult a physician.
Aggravated Medical Conditions	Not applicable.
Protection of first-aiders	Use personal protective equipment
Notes to Physician	Treat symptomatically.

For advice, contact Poisons Information Centre
In Australia, call Tel: 13 1126
In New Zealand, call Tel: 034747000

5. Fire-Fighting Measures

Flammable properties	Not flammable.
Suitable Extinguishing Media	Dry chemical, Carbon dioxide (CO ₂), Water spray, Alcohol resistant foam, Water, Dry powder, pellets
Unsuitable Extinguishing Media	None known.
Special exposure hazards in a fire	None known.
Specific hazards arising from the chemical	None known.
Protective equipment and precautions for firefighters	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.
Australian Hazchem Code	None known

6. Accidental Release Measures

Personal precautions	Use personal protective equipment. Avoid dust formation.
Environmental Precautions	Should not be released into the environment.
Methods for cleaning up	Vacuum or wet sweep. Pick up and arrange disposal without creating airborne dust. Avoid dust formation.

7. Handling and Storage

Handling	Avoid dust formation. Handle in accordance with good industrial hygiene and safety practice.
Storage	Keep containers tightly closed in a cool, well-ventilated place. Keep in properly labelled containers. Do not freeze. Storage between 39-90 °F (4-32 °C).
Materials to avoid	Strong acids.

8. Exposure Controls/Personal Protection

Exposure Guidelines

Chemical name	ES-TWA	ES-STEL	ES-Peak
Silica, Non-Crystalline - Amorphous	2 mg/m ³		
Refractory Ceramic Fibre (RCF)	0.5 fibre/mL		
Silica, Crystalline - Cristobalite	0.05 mg/m ³		
Silica, Crystalline - Quartz	0.05 mg/m ³		

Biological standards

Chemical name	Health Surveillance
Silica, Non-Crystalline - Amorphous	No biological limit allocated
Refractory Ceramic Fibre (RCF)	No biological limit allocated
Calcium Fluoride	No biological limit allocated
Silica, Crystalline - Cristobalite	No biological limit allocated
Silica, Crystalline - Quartz	No biological limit allocated

Occupational exposure controls

Engineering Controls

Ensure adequate ventilation, especially in confined areas when mist is present. Mechanical ventilation and local exhaust is recommended

Environmental exposure controls

Do not allow material to contaminate ground water system.

Personal Protective Equipment

Considerations to aid the user in PPE assessments in line with expected use follow below. However in certain circumstances the user must determine if additional protective equipment is required.

If exposure limits are exceeded or irritation is experienced, locally approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required if high airborne contaminant concentrations as a result of the use of the product. Proper skin and eye protection should also be determined by the user and provided in accordance with current local regulations.

Eye Protection

Safety glasses with side-shields

Respiratory protection

Respiratory protection is not necessary for normal handling of material which does not release dust. Dust mask EN149 - P3/FFP3 or (P2/FFP2) under dusty conditions.

Skin Protection

Long sleeved clothing.

Hand Protection

Protective gloves

General industrial hygiene practice

When using, do not eat, drink or smoke. Wash hands before breaks and at the end of workday. Work clothes should be cleaned to remove excess fibers before being taken off (e.g. use vacuum cleaner, not compressed air).

9. Physical and Chemical Properties

Physical state	Solid form	Appearance	Paste
Color	White	Odor	Odorless
pH - VALUE 1	No data available	Solubility(ies)	Immiscible, partially soluble
Vapor pressure @20 °C (kPa)	No data available	Vapor density	Not applicable
Boiling point / boiling range	< 98 °C	Melting point/range	-1 °C
Flash point	Not flammable	Autoignition temperature	No data available
Upper explosion limit	No data available	Lower explosion limit	No data available

10. Stability and Reactivity

Stability

Stable under normal conditions.

Conditions to Avoid	Avoid dust formation. Keep product dry before exposure to molten metal. Explosion may result from sudden generation of steam.
Materials to avoid	Strong acids.
Hazardous Decomposition Products	Respirable fibers, formed by high temperature cycles may be released during after-service removal. See sections 3 and 16.
Possibility of Hazardous Reactions	Hazardous polymerization does not occur

11. Toxicological Information

Local effects Not applicable.

Target organ effects Not applicable.

Acute Toxicity

Chemical name	Oral LD50	Dermal LD50	Inhalation LC50
<i>Silica, Non-Crystalline - Amorphous - 7631-86-9</i>	> 5000 mg/kg Rat	2000 mg/kg Rabbit	>2.2 mg/L (Rat) 4 h
<i>Calcium Fluoride - 7789-75-5</i>	= 4250 mg/kg (Rat)		
<i>Silica, Crystalline - Quartz - 14808-60-7</i>	500 mg/kg Rat		

Potential Health Effects

Inhalation	May cause irritation of respiratory tract.
Eye Contact	Contact with eyes may cause irritation.
Skin Contact	May cause eye/skin irritation.
Ingestion	Ingestion may cause irritation to mucous membranes.
Chronic Toxicity	

RCF HEALTH DATA SUMMARY: Epidemiological studies of RCF production workers have indicated no increased incidence of respiratory disease nor other significant health effects. In animal studies, long-term, high-dose inhalation exposure resulted in the development of respiratory disease in rats and hamsters.

RCF EPIDEMIOLOGY: In order to determine possible human health effects following RCF exposure, the University of Cincinnati in the United States and the Institute of Occupational Medicine (IOM) in Europe have conducted medical surveillance studies on RCF workers in U.S. and European manufacturing facilities. The University of Cincinnati study has been in progress for over 20 years, collecting data from respiratory questionnaires, lung function tests, chest X-rays, exposure monitoring, and worker mortality. The results of this study of RCF plant workers exposed from 1953 to the present have shown (LeMasters et al, 2003): The initial cross-sectional spirometry studies in the U.S. (LeMasters et al. 1998) and Europe (Cowie et al. 2001) revealed lung function decrements in the RCF-exposed cohort that were associated with heavier historical exposures. Subsequently, longitudinal studies have revealed no RCF exposure related decrements in lung function associated with current exposure levels. Through 1996, pleural plaques seen on chest X-rays in 2.7% of the workers. Pleural plaques are considered a marker of exposure and not disease. The prevalence of pleural plaques has remained relatively constant over time, perhaps as a result of lower current exposure levels. Thus, this long term epidemiology study has demonstrated an absence of interstitial fibrosis, no increased mortality risk and no decrement in lung function associated with current exposures.

RCF TOXICOLOGY: Early animal studies of RCF effects by intraperitoneal and intrapleural injections, as well as by inhalation, resulted in mostly negative results. In an effort to eliminate any questions posed by the results of these early studies, a definitive Maximum Tolerated Dose Study (MTD) by nose only, lifetime inhalation in rats and hamsters, was designed in the 1980s. The MTD study appeared to confirm that RCF was an animal carcinogen under certain test conditions, e.g., extremely high concentrations of approximately 200 f/cc inhaled directly into the lungs. A later review of the MTD

pathology indicated that the animals, lungs were likely overloaded because of large quantities of non-fibrous particles, and that this overload condition was likely responsible for the disease observed. In fact, evaluation of the aerosol samples used confirmed the presence of significant quantities of particulate matter. In a subsequent multi-dose animal inhalation study at 25 f/cc, 75 f/cc, and 115 f/cc; a no observed effect level (NOEL) was found at 25 f/cc. This level is 50 times the RCFC recommended REG of 0.5 f/cc for humans.

Specific effects

Carcinogenic effects	The table below indicates whether each agency has listed any ingredient as a carcinogen.
Mutagenic effects	Not applicable.
Reproductive Toxicity	Not applicable.

12. Ecological Information

Ecotoxicity effects Information follows.

Silica, Non-Crystalline - Amorphous

Algae/aquatic plants	440: 72 h <i>Pseudokirchneriella subcapitata</i> mg/L EC50
Fish	5000 mg/L: 96 h <i>Brachydanio rerio</i> mg/L LC50 static
Crustacea	7600: 48 h <i>Ceriodaphnia dubia</i> mg/L EC50

Persistence and degradability None known

Mobility in Environmental Media None known

Bioaccumulation None known

**Partition Coefficient
(n-octanol/water)**

13. Disposal Considerations

Waste disposal methods Disposal of waste material must be by plastic bag, minimum 0.05 mm thickness, to prevent generation or release of airborne dust. Non-contaminated product may be returned to the manufacturer for proper disposal.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

Other information According to the European Waste Catalogue, Waste Codes are not product specific, but application specific. Waste codes should be assigned by the user based on the application for which the product was used. Dispose of packings and packing waste in accordance with guideline 94/62/EC of the council and the European Parliament of December 20, 1994 as well as the packaging regulation 2004/12/EG of February 11, 2004 and Directive 2005/20/EC from March 9, 2005.

14. Transport Information

Not regulated for transport.

ADR/RID - Rail / road transport

Not regulated.

15. Regulatory Information

International Inventories

Chemical name	EINECS	ELINCS	PICCS	ENCS	DSL	NDSL	TSCA	China	AICS	KECL
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Silica, Non-Crystalline - Amorphous	X		X	X	X		X	X	X	X
Refractory Ceramic Fibre (RCF)								X		
Calcium Fluoride	X		X	X	X		X	X	X	X
Silica, Crystalline - Cristobalite	X		X	X	X		X	X	X	X
Silica, Crystalline - Quartz	X		X	X	X		X	X	X	X

Carcinogenic substances

Contains substances considered carcinogenic according to the following regulatory classifications

Chemical name	Australia	European Union	IARC
Silica, Non-Crystalline - Amorphous			Group 3
Refractory Ceramic Fibre (RCF)	Carc. Cat. 2	Carc. 1B	Group 2B
Silica, Crystalline - Cristobalite			Group 1
Silica, Crystalline - Quartz			Group 1

16. Other Information

Revision Date: 2022-09-13

Reason for Revision Updated to comply with the Legislative requirements for review.

After Service Removal Precautionary measures to be taken after service and upon removal: As produced, synthetic vitreous fibers (SVF) and crystalline silica (SiO₂) are typically vitreous (glassy) materials which, upon continued exposure to elevated temperatures (above 900°C) might devitrify as described in Section 3. High concentrations of fibers and other dusts may be generated when after-service products are mechanically disturbed during operations such as wrecking and removal. These dusts may contain crystalline silica, which some authorities have classified as a carcinogen. Therefore, take measures to reduce dust emissions, and wear appropriate respirator to minimize exposure and comply with local regulatory limits.

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Literary reference Information taken from reference works and the literature.

Key Legend Information

SWA - Safe Work Australia (formerly ASCC - Australian Safety and Compensation Council and NOHSC - National Occupational Health & Safety Commission)
SUSDP - Standard for the Uniform Scheduling of Drugs and Poisons [Aust]
TWA - Time Weighted Average [Int]
STEL - Short Term Exposure Limit [Int]
AICS - Australian Inventory of Chemical Substances [Aust]
Dangerous Goods - Initial Emergency Response Guide (SAA/SNZ HB76:2004)[Aust]
AS/NZS 1715 - Selection, use and maintenance of respiratory protective devices. [Aust/NZ]
Hazchem Code - Fire fighters designation [Aust]
IATA - International Aviation Transport Authority [Int]
IMDG - International Maritime Dangerous Goods [Int]
ADR/RID - European Road & Rail Transportation Union - [Int]
GHS - United Nations Globally Harmonized System for the classification and labelling of Chemicals [Int]
EINECS - European Inventory of Existing Commercial Chemical Substances [Int]
ELINCS - European List of Notified Chemical Substances [Int]
EU - European Union [Int]

[Aust/NZ] = Australian New Zealand
[Int] = International

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End of SDS