



SAFETY DATA SHEET

(Following Regulations (EC) No 1907/2006 & (EC) No 1272/2008)

SDS Number: 410 Date of first issue: 01 November 2002 Date of last revision: 26 February 2025

Section 1 - Identification of product

1.1 - Identification of Product

Tradenames: Green Glass Paper,

The above-mentioned product contains mineral wool.

1.2 - Use of Product

Application as thermal insulation, heat shields, heat containment, gaskets and expansion joints at temperatures up to 500°C in industrial furnaces, ovens, boilers and other process equipment and in aerospace, automotive and appliance industries.

1.3 - Identification of Company

IDENTIFICATION OF THE MANUFACTURER/SUPPLIER

Murugappa Morgan Thermal Ceramics Ltd.,
Plot No: 26 & 27, SIPCOT Industrial complex,
Ranipet, Vellore District, Tamil Nadu, India
Pin: 632403

Murugappa Morgan Thermal Ceramics Ltd.,
Plot No: 681, Motibhoyan Village,
Sanand-Kalol state Highway, Kalol Taluk,
Gandhi Nagar District, Gujarat, India

Website

www.morganthermalceramics.com
sds.tc@morganplc.com

1.4 - Emergency information

EMERGENCY CONTACT NUMBER

Tel 1: +91 (4172) 244 313 extn no. 215 or 201
Language: English

Opening hours: Only available during office hours

Section 2 - Hazard Identification

2.1 - Classification of the substance/ mixture

2.1 CLASSIFICATION OF THE SUBSTANCE/MIXTURE

2.1.1 CLASSIFICATION ACCORDING TO SAFEWORK AUSTRALIA

Mineral wools (glass, rock and slag wool) included in these products have been classified under SAFEWORK AUSTRALIA as a category 2 carcinogen ("substance which cause concern for man owing to possible carcinogen effects").

2.2 - Labelling Elements

No labelling required as product is considered an article under REACH and CLP regulations.

2.3 - Other hazards which do not result in classification

Cutting through the material and surface scuffing may release small amounts of airborne fibre and amorphous silica dust, which are mechanically irritating to skin, eyes and upper respiratory system. These effects are usually temporary.

As with any dust, pre-existing upper respiratory and lung diseases may be aggravated.

Section 3 - Composition / Information On Ingredients

This product is a paper made of organic bonded mineral wools.

COMPONENT	%	CAS Number	REACH Registration Number	Hazard Classification according to CLP
Mineral wools	40-60	65997-17-3	Not yet available	Carc 2 (H351)
Chopped Strand Borosilicate Glass Fibre	30-50	Not applicable	Not yet available	Not classified as hazardous
Organic binder	5-25	Not applicable	Not yet available	Not classified as hazardous

The paper contains between 5% and 25% by weight of crosslinked acrylic esters which are insoluble in water and non-hazardous in nature

None of the components are radioactive under the terms of European Directive Euratom 96/29.

Section 4 - First-Aid measures

Skin

Handling of this material may generate mild mechanical temporary skin irritation. If this occurs, rinse affected areas with water and wash gently. Do not rub or scratch exposed skin.

Eyes

In case of eye contact flush abundantly with water; have eye bath available. Do not rub eyes. Seek medical attention if irritation persists.

Nose and Throat

If these become irritated move to a dust free area, drink water and blow nose. Seek medical attention if irritation persists.

If symptoms persist, seek medical advice.

4.2 - Most Important symptoms and effects, both acute and delayed

No symptoms or effects expected either acute or delayed

4.3 - Indication of any immediate medical attention and special treatment required

No special treatment required, if exposure occurs wash exposed areas to avoid irritation.

Section 5 - Fire-fighting measures

5.1 - Extinguishing media

Use extinguishing agent suitable for surrounding combustible materials.

5.2 - Special hazards arising from the substance or mixture

Non combustible products. However, virgin product binder may burn and produce gases and/or fumes.

5.3 - Advice for firefighters

Packaging and surrounding materials may be combustible.

Section 6 - Accidental Release Measures

6.1 - Personal precautions, protective equipment and emergency procedures

Where abnormally high dust concentrations occur, provide the workers with appropriate protective equipment as detailed in section 8. Restore the situation to normal as quickly as possible.

6.2 - Environmental precautions

Prevent further dust dispersion for example by damping the materials.
Do not flush spillage to drain and prevent from entering natural watercourses.
Check for local regulations, which may apply

6.3 - Methods and materials for containment and clean up

Pick up large pieces and use a vacuum cleaner.
If brushes are used, ensure that the area is wetted down first.
Do not use compressed air for clean up.
Do not allow to become windblown.

6.4 - Reference to other sections

For further information, please refer to sections 7 and 8

Section 7 - Handling and storage

7.1 - Precautions for safe handling

Handling can be a source of dust emission and therefore the processes should be designed to limit the amount of handling. Whenever possible, handling should be carried out under controlled conditions (i.e., using dust exhaust system).
Regular good housekeeping will minimise secondary dust dispersal.

7.2 - Conditions for safe storage

Store in original packaging in a dry area.
Always use sealed and clearly labelled containers.
Avoid damaging containers.
Reduce dust emission during unpacking.
Emptied containers, which may contain debris, should be cleaned before disposal or recycling.
Recyclable cardboard and/or plastic films are recommended for packaging.

7.3 - Specific end use

The main application of these products is as thermal insulation. Please refer to your local Morgan Thermal Ceramics' supplier.

Section 8 - Risk Management Measures / Exposures Controls / Personal Protection

8.1 - Control parameters

Industrial hygiene standards and occupational exposure limits vary between countries and local jurisdictions. Check which exposure levels apply to your facility and comply with local regulations. If no regulatory dust or other standards apply, a qualified industrial hygienist can assist with a specific workplace evaluation including recommendations for respiratory protection. Thermal Ceramics recommend that where no regulatory limits are in place customers follow the NIOSH recommendations as laid out below.

COUNTRY	MMMF (fibre/ml)	Total Dust (mg/m ³)	Respirable Dust (mg/m ³)	Source
India	No Limit Set	*	*	Directorate General Factory Advice Service & Labour Industries (DFGASLI)
China				GBZ 2.1-2019
Japan	1			The Japan Society for Occupational Health (JSOH)
Korea	(10 mg/m ³)			K-OSHA Value
UAE	(2 f/cc)	10	4	Abu Dhabi Occupational Safety and Health System Framework (OSHAD- SF) v 3.0 July 2016
Australia	2	10		Workplace Exposure Standards for Airborne Contaminants, Dec 2019

*see appropriate calculations in schedule 2 of the Factories Act 1948

Information on monitoring procedures

United Kingdom

MDHS 59 specific for MMVF: "Man-made mineral fibre - Airborne number concentration by phase-contrast light microscopy" and
MDHS 14/4 "General methods for sampling and gravimetric analysis of respirable and inhalable dust"

NIOSH

NIOSH 0500 "Particulates not otherwise regulate, total"
NIOSH 0600 "Particulates not otherwise regulate, respirable"
NIOSH 7400 "Asbestos and other fibres by PCM"

8.2 - Exposure controls

8.2.1 APPROPRIATE ENGINEERING CONTROLS

Review your applications in order to identify potential sources of dust exposure.
Local exhaust ventilation, which collects dust at source, can be used. For example down draft tables, emission controlling tools and materials handling equipment.
Keep the workplace clean. Use a vacuum cleaner. Avoid brushing and compressed air.

If necessary, consult an industrial hygienist to design workplace controls and practices.
The use of products specially tailored to your application(s) will help to control dust. Some products can be delivered ready for use to avoid further cutting or machining. Some could be pre-treated or packaged to minimise or avoid dust release during handling.
Consult your supplier for further details

8.2.2 - Personal Protective Equipment

Skin protection:

Wear gloves and work clothes, which are loose fitting at the neck and wrists. Soiled clothes should be cleaned to remove excess fibres before being taken off (e.g. use vacuum cleaner, not compressed air). Wash work clothes separately from other clothing.

Eye protection:

As necessary wear goggles or safety glasses with side shields.

Respiratory protection:

For dust concentrations below the exposure limit value, RPE is not required but FFP2 respirators may be used on a voluntary basis.
For short-term operations where excursions are less than ten times the limit value use FFP2 respirators.
In case of higher concentrations or where the concentration is not known, please seek advice from your company and/or local Thermal Ceramics supplier.

Information and training of workers

Workers should be trained on good working practices and informed on applicable local regulations.

8.2.3 - Environmental Exposure Controls

Refer to local, national or European applicable environmental standards for release to air water and soil.
For waste, refer to section13

Section 9 - Physical and chemical properties

Information on basic physical and chemical properties

State	Not applicable
Colour	Pale green fibrous paper
Odour	Green
Odour threshold	Slight
pH	Not Applicable
Melting point/freezing point	Not applicable
Initial boiling point and boiling point range	> 720°C
Flash point	Not applicable
Evaporation rate	Not applicable
Flammability (solid, gas)	The material will burn for a short period only until the polymeric binder is burnt out or the resulting expansion self-extinguishes
Upper/lower flammability or explosive limits	Not applicable
Vapour pressure	Not applicable
Vapour density	Not Applicable
Relative density	160 - 220 kg/m³
Solubility(ies)	Not applicable
Partition co-efficient: n-octanol/water	Not applicable
Auto-ignition temperature	Not applicable
Decomposition temperature	Not Applicable
Viscosity	Not Applicable
Other safety information	No further relevant information available.
Particle Characteristics	mixture does not contain any intentionally added particles in the nanomaterial range
Explosive properties	Not applicable
Oxidising properties	Not applicable

Section 10 - Stability and Reactivity

10.1 - Reactivity

The material is stable and non reactive.

10.2 - Chemical Stability

The product is inorganic, stable and inert

10.3 - Possibility of Hazardous Reactions

During first heating, oxidation products from the organic binder might be emitted in a temperature range from 180°C to 600°C. It is recommended to ventilate the room until gases and fumes have disappeared. Avoid exposure to high concentrations of gas or fumes.

10.4 - Conditions to Avoid

Please refer to handling and storage advice in Section 7

10.5 - Incompatible Materials

Concentrated mineral acids or bases

10.6 - Hazardous decomposition products

Decomposition of the polymeric binder will occur at temperatures above 200°C releasing smoke, water, carbon monoxide, carbon dioxide and hydrocarbons. The duration and the amount of release will depend upon the applied temperature, the thickness and area of the material and binder content. Removal of the binder will release the fibres unless they are physically constrained. During the first heating cycles increased ventilation or the use of suitable respirator protection may be required.

Hazardous polymerisation will not occur.

Section 11 - Toxicological information

Toxicokinetics, metabolism and distribution

11.1.1 BASIC TOXICOKINETICS

Exposure is predominantly by inhalation or ingestion, available toxicological information is as follows:

11.1.2 Human Toxicological data

RESPIRATORY TOXICITY FOR MINERAL WOOLS

Epidemiological studies did not show any health effects related to fibres among Mineral Wool manufacturing workers. The excess of lung cancers reported in 1982 have been the subject of additional investigations and the examination of the confounding factors showed that the excess were not attributed to fibres. Smoking has been identified as the most important of these confounding factors.

Toxicological Information on Continuous Glass Filament

Because of its large diameter, continuous glass filament is not considered to be respirable.

The International Agency for Research on Cancer (IARC) has classified continuous filament glass fibre as not classifiable with respect to human carcinogenicity (Group 3).

In our experience and according to information available to us the product is not harmful to health provided it is correctly handled and processed according to the given recommendations.

11.1 - Information on hazard classes as defined in Regulation (EC) No 1272/2008

Experimental Studies for Mineral Wools

Animal inhalation studies on mineral wools showed neither pulmonary fibrosis nor lung cancer nor mesothelioma. Intratracheal and intraperitoneal injection studies did not show any disease except those involving selected fine glass fibres for special uses or experimental rock wools.

11.2 Information on other hazards

Endocrine disrupting properties: no known effects.

Other hazards: When tested using approved methods (as listed in Regulation (EC) 1907/2006, Annex 8, Section 8.1), fibres contained in this material give negative results. All man-made mineral fibres, like some natural fibres, can produce a mild irritation resulting in itching or rarely, in some sensitive individuals, in a slight reddening. Unlike other irritant reactions this is not the result of allergy or chemical skin damage but is caused by mechanical effects.

Section 12 - Ecological information

12.1 - Toxicity

These products are inert materials that remain stable overtime.
No adverse effects of this material on the environment are anticipated.

12.2 - Persistence and degradability

Not established

12.3 - Bioaccumulative potential

Not established

12.4 - Mobility in soil

No information available

12.5 - Results of PBT and vPvB assessment

This mixture contains no substance considered to be persistent, bioaccumulating nor toxic (PBT).

This mixture contains no substance considered to be very persistent and very bioaccumulative (vPvB).

12.6 - Endocrine Disrupting Properties

No additional information available

12.7 - Other adverse effects

Section 13 - Disposal Considerations

13.1 - Disposal Considerations

To prevent waste materials from becoming airborne during waste storage, transportation and disposal, a covered container or plastic bagging is recommended.

For Australia, waste from these materials should be considered hazardous waste and local waste authorities should be contacted for correct disposal methods.

Waste from these materials (even after use above 900°C) is not classified as hazardous waste and may generally be disposed of at a normal tipping site which has been licensed for the disposal of industrial waste. Taking into account any possible contamination during use, which may be classified as hazardous, expert guidance should be sought.

Such a waste is normally dusty (unless wetted) and so should be properly bagged and clearly labelled for disposal. At some tip sites dusty waste may be treated differently in order to ensure they are dealt with promptly and to avoid them being windblown. Check for national and /or regional regulations to identify all applicable disposal requirements.

Section 14 - Transport information

14.1 - Transport information

14.1. UN number

Not Applicable

14.2. UN proper shipping name

Not Applicable

14.3. Transport hazard class(es)

Not Applicable

14.4. Packing group

Not Applicable

14.5. Environmental hazards

Not Applicable

14.6. Special precautions for user

Not Applicable

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code

Not Applicable

Section 15 - Regulatory information

15.1 - Regulatory information

The International Agency for Research on Cancer (IARC) confirmed in October 2001 that Group 2B (possible human carcinogen based on sufficient evidence of carcinogenicity in animals but inadequate evidence in humans) continues to be the appropriate classification for refractory ceramic fibre.

INFORMATION FOR RCF USERS EXPORTING TO EUROPE

Under European Regulation REACH there are additional obligations for importers of RCF containing products

RCF are classified in the European Union as a carcinogenic substance CLP 1B. On the 13th of January 2010 ECHA has updated the candidate list for authorisation (Annexe XV of the REACH regulation) and has added 14 new substances in this list including Refractory Ceramic Fibres and zirconia Refractory Ceramic Fibres.

As a consequence, EU (European Union) or EEA (European Economical Area) suppliers of articles which contain Refractory Ceramic Fibres and zirconia Refractory Ceramic Fibres in a concentration above 0.1% (w/w) have an obligation to provide information, available to them, to their customers or upon a request from an end user, within 45 days of the receipt of the request, on the supply of RCF containing articles,. This information must ensure safe use of the article and as a minimum contain the name of the substance. See section 16 for internet reference containing further information.

Section 16 - Other Information

16.1 - ADDITIONAL INFORMATION AND PRECAUTIONS TO BE CONSIDERED UPON REMOVAL OF AFTER SERVICE MATERIAL

16.2 - uses advised against

16.3 - NOTE

This Safety Data Sheet was originally produced in English and has subsequently been translated in to other languages; whilst every effort has been made to make this an accurate translation, please be aware that technical terms do not always translate correctly. The English version should always be considered as the reference version.

16.4 - Further Information

FURTHER INFORMATION

Further information can be found on

<http://www.morganthermalceramics.com/>

<http://www.cdc.gov/niosh/docs/2006-123/>

<http://www.ecfia.eu/>

http://echa.europa.eu/chem_data/authorisation_process/candidate_list_obligations_en.asp

16.5 - Technical Datasheets

TECHNICAL DATA SHEETS

For more information on individual products please see the technical data sheet section at www.morganthermalceramics.com

16.6 - Revision Summary

Content checked and revision date updated

16.7 - NOTICE

The information presented herein is based on data considered to be accurate as of the date of preparation of this 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 authorization given or implied to practice any patented invention without a license. 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.