

D3501 Safety Data Sheet

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION OF THE COMPANY

PRODUCT: D3501 Friction Material
COMMON USES: Brakes/Clutch Lining
SUPPLIER: Ferotec Friction Ltd
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2. COMPOSITION/INFORMATION ON INGREDIENTS

This product contains a number of ingredients, all of which have become sealed in a synthetic rubber/resin binder resulting in a low probability of dust/fibre release.

Chemical Name	CAS No	Concentration (%)	OEL	Exposure limit	Risk Phrases
Mineral Fibres (E-glass continuous filament fibre and rockwool fibre)		35-55	2 fibres/ml, 5mg/m ³	8 hour TWA	R38, R40
Barium sulphate	7727-43-7	5-10	Respirable 4 mg/m ³	8 hour TWA	
Graphite	7440-44-0	5-10	Respirable 10 mg/m ³	8 hour TWA	

3. HAZARD IDENTIFICATION

Exposure to dust created by handling this product should be kept a low as reasonably practicable and limits as above are observed. Handling of this product may cause skin irritation. No health risks have so far been known in cases where this product has been handled and processed properly.

Specific Hazards The mineral fibres have been classified by the EU as Carc.Cat.3 (substances which cause concern for man owing to possible carcinogenic effect) and as an irritant to skin. High dust levels may irritate the throat and eyes.

4. FIRST AID MEASURES

Inhalation Avoid breathing dust. In the event of excessive inhalation of dust, remove the individual to fresh air. Obtain medical advice.
Skin Contact Clean skin with soap and water. Obtain medical advice if irritation persists.
Eye Contact Irrigate with clean water for at least 15 minutes. Obtain medical advice if irritation persists.
Ingestion It is not normally considered that the product will be ingested, but if small quantities are ingested, seek medical advice.

5. FIRE-FIGHTING MEASURES

Extinguishing Media Any standard extinguishing media may be used.
Protective Equipment Fire fighters, and others exposed, wear self-contained breathing apparatus.
Exposure Hazards When heated to very high temperatures, may give off smoke and decomposition products which may contain toxic compounds.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions Use personal protective equipment as recommended in section 8. Avoid breathing dust.
Environmental Precautions No special precaution required
Methods for Cleaning up Remove any dust generated by vacuum or wet cloth.

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7. HANDLING AND STORAGE

Handling	Excessive handling may generate dust. Use adequate ventilation to keep dust concentration below stipulated standard.
Storage Conditions	Prevent exposure to temperatures above 100°C.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Engineering measures	Use local exhaust ventilation to maintain airborne dust levels to below established exposure standard.
Personal Protection	
Respiratory Protection	Wear suitable protection if exposure limits are exceeded.
Hand Protection	Wear impervious gloves.; use suitable barrier creams and maintain good hygiene standards.
Eye Protection	Wear safety glasses when machining or abrading the product.
Skin Protection	Wear overalls of close weave material

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Black solid	Colour	Black
pH-value	Not applicable	Melting point/range	Not applicable
Explosive properties	As supplied, does not present an explosion hazard. however, dust produced from grinding operations presents an explosion hazard.		
Density	1.95g/cm ³	Autoflammability	> 350°C
Flammability	Does not support combustion but will burn at elevated temperatures. Will burn when finely divided.		
Odour	Characteristic friction material odour	Boiling point/range	Not applicable
Flash point	Not applicable	Vapour pressure	Not applicable
Solubility in water	Not applicable	Viscosity	Not applicable

10. STABILITY AND REACTIVITY

Stability	Stable
Conditions to avoid	Prolonged exposure to elevated temperatures >300°C
Materials to avoid	Not applicable
Hazardous decomposition products	CO, CO ₂ , NO _x , SO _x , phenol, formaldehyde and cyanides
Hazardous Reactions	None - relatively inert

11. TOXICOLOGICAL INFORMATION

Short Term Effects

Inhalation	May cause irritation to upper respiratory tract
Ingestion	Not established
Skin Contact	May cause temporary irritation
Eye Contact	May cause irritation

Chronic Effects

Inhalation	The glass fibre present in this product is not classified as respirable (<i>fibres with diameters <3.0µm that are capable of entering the respiratory system</i>). Assessment of toxicity of man-made mineral fibres has identified the fact that fibres which cannot enter the respiratory system will not be a factor for the induction of respiratory diseases.
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Ingestion	Not established
Skin Contact	Not established
Eye Contact	Not established
Carcinogenicity	The International Agency for Research on Cancer designated glass fibre a Group 3 "not classifiable as to human carcinogenicity". Rockwool fibres are classified by the EU as Carc.Cat.3 (substances which cause concern for man owing to possible carcinogenic effect). See below:

Mineral Fibres

11.1 Coarse fibres

Coarse fibres can cause itching of the skin, foreign body reaction in the upper respiratory system (mucous membranes) and in the eyes. The itching and possible inflammation are a mechanical reaction to the coarse fibres (of more than about 5µm in diameter) and are not damaging in the way chemical irritants may be. They generally abate within a short time after the end of the exposure. When products are handled continually, the skin itching generally diminishes.

11.2 Respirable fibres

Animal studies

Lifetime inhalation studies of rats exposed to high levels of stone wool fibres have not shown any excess of lung tumours. However, they did produce evidence of fibrosis

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(scar tissue) at the higher exposure levels. The fibrosis occurred late and was at a low level. Studies using non-physiological routes of administration (implantation or injection) and high doses of fibres have shown an excess of tumours.

Experiences in humans (Epidemiological Studies)

Large morbidity and mortality studies of both European and North American mineral wool manufacturing workers have been conducted.

the studies have found no significant evidence of non-malignant lung disease (e.g. fibrosis). The studies have not established a casual relationship between exposure to stone wool and malignant diseases (lung cancer or mesothelioma).

In the latest follow-up in Europe, there was some excess of lung cancer. However, much of the excess was observed in one production plant, where workers had been exposed to asbestos and polycyclic hydrocarbons. For the remaining plants, there was little evidence of an association of stone wool production and any excess of lung cancer. To establish reasons for the unexplained excess, a case-control study is being conducted.

12. ECOLOGICAL INFORMATION

Bioaccumulation	Not established
Mobility	Not established
Ecotoxic effects	Not established
Biodegradation	Not inherently biodegradable

13. DISPOSAL CONSIDERATION

Product	Seal all dust created by abrading in impervious bags and dispose to a suitable licensed landfill site.
Contaminated Packaging	Remove all packaging for recovery or incinerate/landfill

14. TRANSPORT INFORMATION

Not classified as dangerous for conveyance. use any container of suitable size and length.

15. REGULATORY INFORMATION

EEC Classification	The product contains Mineral Fibres (Machine made vitreous (silicate) fibres).
Danger symbol	Xn, Harmful
Risk Phases	Irritating to skin (R38) Possible risks of irreversible effects (R40)
Safety Phrases	Wear suitable protective clothing and gloves (S36/37)
Refer to	Health & Safety at Work Act 1974 Control of Substances hazardous to Health (COSHH) Regulations 1994
Please note	This Safety Data Sheet does not constitute the user's own assessment of workplace risk as required by other health and safety legislation.

16. ADDITIONAL INFORMATION

Further Information	Health and Safety Executive Guidance Note EH40/2000- Occupational Exposure Limits 2000 Health and Safety Executive Guidance Note EH46- Man-Made Mineral Fibres Health and Safety Executive Guidance Note MDHS14 - General Methods for the Gravimetric Determination of Respirable and Total Inhalable Dust Health and Safety Executive Guidance Note MDHS59 - Man-Made Mineral Fibre
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This information is based on our present knowledge and is accurate at the date of issue, to the best knowledge of Ferotec Friction Ltd. However, it shall not constitute a guarantee for any specific product featured and shall not establish a legally contractual relationship and condition or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with handling, storage, use or disposal of the product.

For any additional information, contact Ferotec Friction Ltd.