

FIBERFRAX

According to (EC) No 1907/2006 (REACH)

1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY

1.1 Identification of the product

Trade names: Fiberfrax

Product form : Substance
Index Number : 650-017-00-8
EC no : 604-314-4
CAS-Number : 142844-00-6
REACH registration Nr : 01-2119458050-50-0001
Product code : 400

1.2 Relevant identified uses of the substance or mixture and uses advised against

1.2.1 Relevant identified uses

Industrial/ Professional use spec: For professional use only
Use of the substance/ mixture : For industrial use within high temperature applications

1.2.2 Uses advised against

Spraying

Identification of the company

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2. HAZARDS IDENTIFICATION

2.1 Classification of the substance/mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

Carcinogenicity (inhalation) Category 1B H350i

Full text of hazard classes and H-statements: see section 16

Adverse physicochemical, human health and environmental effects

May cause slight irritation to the skin. May cause slight irritation to eyes. May cause respiratory irritation.

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2.2 Label elements

Labelling according to Regulation (EC) No. 1272/2008 (CLP)

Hazard pictograms (CLP)



GHS08

Signal Word : Danger

Hazard Statements : May cause cancer by inhalation (H350i)

Precautionary statements:
P201 - Obtain special instructions before use.
P280 - Wear eye protection, protective gloves, Respiratory protection.
Use personal protective equipment as required. (P280)

Listed in Annex VI: EC index no: 650-017-00-8

2.3 Other hazards

Other hazards not contributing to the classification:

May cause mechanical irritation to the skin, eyes and respiratory system.

This substance/ mixture does not meet the PBT criteria of REACH regulation, annex XIII.

This substance/ mixture does not meet the vPvB criteria of REACH regulation, annex XIII.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Name	Product identifier	%
Aluminosilicate refractory ceramic fibres substance listed as REACH candidate (Nota A) (Nota R)	(CAS No) 14244-00-6 (EC No) 604-314-4 (EC Index No) 650-017-00-8 (REACH-No) 01-2119458050-50-0001	100

Nota A: Without prejudice to Article 17(2), the name of the substance must appear on the label in the form of one of the designations given in part 3. In part 3, use is sometimes made of a general description such as "compound" or.....salts. In this case, the supplier is required to stat on the label the correct name, due account being taken of section 1.1.1.4

3.2 Mixture

Not applicable

4. FIRST AID MEASURES

4.1 Description of first aid measures

After inhalation: Move to fresh air. If you feel unwell, seek medical advice.

After skin contact: Gently wash with plenty of soap and water. Take off contaminated clothing and wash it before reuse. If skin irritation persists, take medical advice.

After eye contact: Rinse cautiously with water for several minutes. If eye irritation persists: Get medical advice/ attention.

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After ingestion: Rinse mouth. Drink plenty of water. Do NOT induce vomiting. Obtain emergency medical attention.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms/ injuries after skin contact: mechanical irritation

Symptoms/ injuries after eye contact: mechanical irritation

4.3 Indication of any immediate medical attention and special treatment needed

Treat symptomatically.

5. FIRE FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media: The product is not flammable. Use extinguishing media appropriate for surrounding fire. Foam. Dry powder. Carbon dioxide. Water spray.

Unsuitable extinguishing media: Do not use a heavy water stream.

5.2 Special hazards arising from the substance or mixture

No additional information available.

5.3 Advice for firefighters

Firefighting instructions: Prevent fire-fighting water from entering environment.

Protection during firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

6.1.1 For non-emergency personnel

Protective equipment: Concerning personal equipment to use, see section 8.

Emergency procedures: Prohibit unauthorized persons.

6.1.2 For emergency responders

Protective equipment: Ensure adequate ventilation. Concerning personal protective equipment to use, see section 8.

Emergency procedures: Ensure operative are trained to minimise exposures.

6.2. Environmental precautions

Prevent entry to sewers and public waters. Notify authorities if product enters sewers or public waters.

6.3. Methods and material for containment and cleaning up

Methods for cleaning up Mechanically recover the product. Minimise generation of dust. Dust can be vacuumed with a vacuum cleaner containing a HEPA (High Efficiency Particulate Air) filter.

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Other information Disposal must be done according to official regulations.

6.4. Reference to other sections
See section 7. See Heading 8. See Heading 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Precautions for handling: Avoid contact with skin and eyes. Use personal protective equipment as required. Obtain special instruction before use. Do not eat, drink or smoke when using this product. Clear contaminated areas thoroughly. Ensure good ventilation of the workstation.

Hygiene measures: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking when leaving work.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions: Product must only be kept in the original packaging. Store tightly closed in a dry and cool place.

Information about storage in one common: Keep away from food, drink and animal feeding stuff.

7.3 Specific use(s)

For professional users only. See Heading 8. Exposure scenarios.

8. RISK MANAGEMENT MEASURES / EXPOSURE CONTROL / PERSONAL PROTECTION

8.1 Control parameters

Aluminosilicate refractory ceramic fibres (142844-00-6)	
EU - Occupational Exposure Limits	
Local name	Refractory ceramic fibres
IOELV TWA (mg/m ³)	0.3 fibers/ml (BOEL)
Notes	BOELV (binding occupational exposure limit values)
Regulatory reference	DIRECTIVE (EU) 2019/130 (amending Directive 2004/37/EC)

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United Kingdom - Occupational Exposure Limits	
Local name	Refractory ceramic fibres and special purpose fibres
WEL TWA (mg/m ³)	5 mg/m ³ total inhalable dust
WEL TWA (ppm)	0.3 fibers/ml respirable fraction
Remark (WEL)	Carc (Capable of causing cancer and/or heritable genetic damage)
Recommended monitoring procedures The UK follow MDHS 59 specific for MMVF	“Man-made mineral fibre - Airborne number concentration by phase-contrast light microscopy” and MDHS 14/3 “General methods for sampling and gravimetric analysis of respirable and inhalable dust”. WHO-EURO method: Determination of airborne fibre number concentrations; A recommended method, by phase-contrast optical microscop
Regulatory reference	EH40/2005 (Fourth edition, 2020). HSE

Aluminosilicate refractory ceramic fibres (142844-00-6)

DNEL/DMEL (additional information)

long term - Local, Inhalation	2,17 f/ml
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Additional information

The DNEL cited in the long term exposure section above is based on the incidence of lung tumours (non-significant at all treatment levels) in a multi-dose rat study reported by Mast et al (Inhalation Toxicology, 1995, 7 (4), 469-502) which demonstrates a NOAEL of 162 f/ml and leads to the calculated endpoint specific DNEL of 2.17 f/ml.

SCOEL have recommended an OEL for RCF of 0.3 f/ml based on measured lung function in exposed workers. Assuming 45 years exposure, the average cumulative exposures of 147.9 (all workers in the high exposure group) and 184.8 fmo/ml (workers 60+ years of age in the high exposure group) – equivalent fibre concentrations of 0.27 and 0.34 f/ml respectively – were considered as no observed adverse effect levels for lung function and SCOEL therefore proposed an OEL of 0.3 f/ml. This is considerably lower than the calculated DNEL value.

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8.2 Exposure Controls

Hand protection:	Leather protective gloves
Eye protection:	Safety glasses with side shields
Skin and body protection:	Impervious clothing. Do not take working clothes home.
Respiratory protection:	If dust are formed: Wear appropriate mask. (FFP3)



Other information:

Do not eat, drink or smoke during use; Do not take working clothes home; Separate working clothes from town clothes. Launder separately.

Uses and Risk Management Measures (RMM)

Intended Use

Secondary use – Conversion into wet and dry mixtures and articles.

Process would include: Mixing forming operations, handling of RCF/ASW products, assembly of RCF/ASW containing products, machine and hand finishing of RCF/ASW products.

Reference ES 2*

RMM-Hierarchy of Controls

- Where it is practical to do so, automatically feed RCF/ASW in to the process.
- Where practical to do so, segregate dry and wet processing
- Enclose the process where practically possible.
- Where practical to do so, segregate machine areas and restrict access to operators involved in the process.
- Enclose Machines as far as practically possible.
- Install LEV where possible, when machine finishing, handling, compressing and hand cutting to remove dust at source.
- Employ experienced personnel – trained in the correct use of fibrous products
- PPE and RPE used for all dusty tasks
- Provide vacuum cleaner connection point to central system where practical or use a portable HEPA vacuum
- Regular clean up – using a wet scrubbing unit where practically possible and in general a HEPA vacuum should be used.
- Dry brushing and use of compressed air should be prohibited
- Waste materials to be contained at source, labelled and stored separately for disposal or recycling.

Intended use

Tertiary use – maintenance and service life (Industrial or professional use)

Process: Small scale repairs involving removal and installation of RCF/ASW products. Use of the product in an enclosed system, where there is occasional control access or no access.

Reference ES 3*

RMM – Hierarchy of Controls

- Use pre-cut, pre-sized pieces where practically possible.
- Allow access only to trained (authorised) operators

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- Where practically possible, perform all hand cutting in a segregated area, on a down draft bench.
- Clean-up work area regularly during the shift using a HEPA equipped vacuum cleaner.
- Prohibit use of dry brushing and compressed air cleaning.
- Bag and seal waste immediately at source.
- Use PPE and RPE appropriate to task.
- Employ good hygiene practices.

Intended use:

Tertiary use- installation and removal (industrial or professional).

Large scale removal and installation of RCF/ASW from Industrial processes.

Large scale removal and installation by professionals.

Reference ES 4*

RMM – Hierarchy of Controls

- Where practically possible enclose or segregate the work area.
- Allow only authorised personnel.
- Pre-wet insulation prior to removal where practically possible.
- Where practically possible use a water lance for removal or vacuum-truck.
- Use down draft bench for hand cutting products.
- Cover pre-cut section during transport and storage to prevent secondary exposure.
- Where practically possible provide multiple vacuum hoses for convenient clean-up of spillage or use portable HEPA filtered vacuums.
- Bag waste materials immediately at source
- Prohibit use of dry brushing and or compressed air cleaning.
- Experienced personnel only
- Use appropriate PPE and RPE appropriate to expected concentrations

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Fibres
Odour	: Odourless
Colour	: White
Odour threshold	: No data available
pH	: No data available
Relative evaporation rate (butylacetate = 1)	: No data available
Melting point	: > 1650°C fibres
Freezing point	: No data available
Boiling point	: No data available
Flash point	: Not applicable
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapour pressure	: No data available

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Relative vapour density at 20°C	: No data available
Relative density	: No data available
Solubility	: Water: < 1 mg/l
Log Pow	: No data available
Viscosity, kinematic	: Not applicable
Viscosity, dynamic	: Not applicable
Explosive properties	: No data available
Oxidising properties	: No data available
Explosive limits	: No data available

Other information

Other properties:

Length weighted geometric mean diameter of fibres contained in the product: 1.4 – 3 µm.

10. STABILITY AND REACTIVITY**10.1 Reactivity**

Stable under normal conditions of use.

10.2 Chemical stability

The product is stable at normal handling and storage conditions.

10.3 Possibility of hazardous reactions

No dangerous reactions known.

10.4 Conditions to avoid

No additional information available.

10.5 Incompatible materials

None

10.6 Hazardous decomposition products

Under normal conditions of storage and use, hazardous decomposition products should not be produced.

11. TOXICOLOGICAL INFORMATION**11.1 Information on toxicological effects**

Acute toxicity (oral): Not classified (Based on available data, the classification criteria are not met)

Acute toxicity (dermal): Not classified (Based on available data, the classification criteria are not met)

Acute toxicity (inhalation): Not classified (Based on available data, the classification criteria are not met)

Skin corrosion/ irritation: Not classified (Based on available data, the classification criteria are not met)

Serious eye damage/ irritation: Not classified (Based on available data, the classification criteria are not met)

Respiratory or skin sensitisation: Not classified (Based on available data, the classification criteria are not met)

Germ cell mutagenicity: Not classified (Based on available data, the classification criteria are not met)

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Carcinogenicity: May cause cancer by inhalation

Reproductive toxicity: Not classified (Based on available data, the classification criteria are not met)

STOT-single exposure: Not classified (Based on available data, the classification criteria are not met)

STOT-repeated exposure: Not classified (Based on available data, the classification criteria are not met)

Aspiration hazard: Not classified (Based on available data, the classification criteria are not met)

Other information:

Basic toxicokinetic

Exposure is predominantly by inhalation or ingestion. Man-made vitreous fibres of a similar size to RCF/ASW have not been shown to migrate from the lung and/or gut and do not become located in other parts of the body. When compared to many naturally occurring minerals, RCF/ASW has a low ability to persist and accumulate in the body (half-life of long fibres (> 20 µm) in 3 week rat inhalation test is approx. 60 days).

Human Toxicological data

In order to determine possible human health effects following RCF exposure, the University of Cincinnati has been conducting medical surveillance studies on RCF workers in the U.S. The Institute of Occupational Medicine (IOM) has conducted medical surveillance studies on RCF workers in European manufacturing facilities.

Pulmonary morbidity studies among production workers in Europe and USA have demonstrated an absence of interstitial fibrosis and no decrement in lung function associated with current exposures, but have indicated a reduction of lung capacity among smokers.

A statistically significant correlation between pleural plaques and cumulative RCF exposure was evidenced in the USA longitudinal study.

The USA mortality study did not show evidence of increased lung tumour development either in the lung parenchyma or in the pleura.

Irritant Properties

Negative results have been obtained in animal studies (EU method B 4) for skin irritation. Inhalation exposures using the nose only route produce simultaneous heavy exposures to the eyes, but no reports of excess eye irritation exist. Animals exposed by inhalation similarly show no evidence of respiratory tract irritation.

Human data confirm that only mechanical irritation, resulting in itching, occurs in humans. Screening at manufacturers' plants in the UK has failed to show any human cases of skin conditions related to fibre exposure.

12. ECOLOGICAL INFORMATION

12.1. Toxicity

Hazardous to the aquatic environment, short-term (acute) :
Not classified (Based on available data, the classification criteria are not met)

Hazardous to the aquatic environment, long-term (chronic) :
Not classified (Based on available data, the classification criteria are not met)

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12.2. Persistence and degradability

Aluminosilicate refractory ceramic fibres (142844-00-6)	
Persistence and degradability	Not applicable for inorganic substances.

12.3. Bioaccumulative potential

No additional information available

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

Aluminosilicate refractory ceramic fibres (142844-00-6)	
This substance/ mixture does not meet the PBT criteria of REACH regulation, annex XIII	
This substance/ mixture does not meet the vPvB criteria of REACH regulation, annex XIII	

12.6. Other adverse effects

No additional information available

13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

Waste treatment methods:

Disposal must be done according to official regulations.

Product/Packaging disposal recommendations:

Dispose in a safe manner in accordance with local/national regulations.

European List of Waste (LoW) code:

16 03 03* - inorganic wastes containing dangerous substances

HP Code:

HP7 - "Carcinogenic:" waste which induces cancer or increases its incidence

14. TRANSPORT INFORMATION

In accordance with ADR, RID, IATA, IMDG, ADN.

ADR	IMDG	IATA	ADN	RID
14.1. UN number				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.2. UN proper shipping name				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable

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14.3. Transport hazard class(es)				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.4. Packing group				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
14.5. Environmental hazards				
Dangerous for the environment : No	Dangerous for the environment : No Marine pollutant : No	Dangerous for the environment : No	Dangerous for the environment : No	Dangerous for the environment : No
No supplementary information available				

14.6 Special precautions for user

- Overland transport
Transport regulation (ADR): Not applicable
- Transport by sea
Transport regulations (IMDG): Not applicable
- Air transport
Transport regulations (IATA): Not applicable
- Inland waterway transport
Transport regulations (ADN): Not applicable
- Rail transport
Transport regulations (RID): Not applicable

14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable.

15. REGULATORY INFORMATION

15.1 Safety, health and environment regulations/legislation specific for the substance or mixture

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15.1.1 EU Regulations:

The following restrictions are applicable according to Annex XVII of the REACH Regulation (EC) No 1907/2006:

Reference code	Applicable on
28.	Aluminosilicate refractory ceramic fibres

Aluminosilicate refractory ceramic fibres is on the REACH Candidate List

Aluminosilicate refractory ceramic fibres is not on the REACH Annex XIV List

FIBERFRAX is not subject to Regulation (EU) No 649/2012 of the European Parliament and of the Council of 4 July 2012 concerning the export and import of hazardous chemicals.

FIBERFRAX is not subject to Regulation (EU) No 2019/1021 of the European Parliament and of the Council of 20 June 2019 on persistent organic pollutants

Other information, restriction and prohibition:

Take note of Directive 94/33/EC on the protection of young people at work. Take note of regulations Directive 92/85/EC on the safety and health of pregnant workers at work.

15.1.2. National regulations

No additional information available

15.2. Chemical safety assessment

A chemical safety assessment has been carried out

16. OTHER INFORMATION

Indication of changes:

Section	Changed item	Change	Comments
8	Control parameters	Modified	DIRECTIVE (EU) 2017/2398
13	HP Code	Added	

Abbreviations and acronyms:

ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
CLP	Classification Labelling Packaging Regulation; Regulation (EC) No 1272/2008
DNEL	Derived-No Effect Level
IATA	International Air Transport Association

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IMDG	International Maritime Dangerous Goods
REACH	Registration, Evaluation, Authorisation and Restriction of Chemicals Regulation (EC) No 1907/2006
RID	Regulations concerning the International Carriage of Dangerous Goods by Rail
PBT	Persistent Bioaccumulative Toxic
vPvB	Very Persistent and Very Bioaccumulative
ATE	Acute Toxicity Estimate
BCF	Bioconcentration factor
DMEL	Derived Minimal Effect level
EC50	Median effective concentration
IARC	International Agency for Research on Cancer
LC50	Median lethal concentration
LD50	Median lethal dose
LOAEL	Lowest Observed Adverse Effect Level
NOAEC	No-Observed Adverse Effect Concentration
NOAEL	No-Observed Adverse Effect Level
NOEC	No-Observed Effect Concentration
OECD	Organisation for Economic Co-operation and Development
PNEC	Predicted No-Effect Concentration
SDS	Safety Data Sheet
STP	Sewage treatment plant
TLM	Median Tolerance Limit

Data sources : ECHA (European Chemicals Agency).

Care programme

ECFIA, representing the high temperature insulation wool (HTIW) industry, has undertaken an extensive industrial hygiene programme to provide assistance to the users of all products containing HTIW. The objectives are twofold:

- to monitor workplace dust concentrations at both manufacturers' and customers' premises.
- to document manufacturing and use of HTIW products from an industrial hygiene perspective in order to establish appropriate recommendations to reduce exposures.

Precautionary measures to be taken after service upon removal

In almost all applications high temperature insulating wools products (HTIW) are used as an insulating material helping to maintain temperature at 900°C or more in a closed space.

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As produced, HTIW are vitreous (glassy) materials which, upon continued exposure to elevated temperatures (above 900 °C) might de-vitrify. The occurrence and extent of crystalline phase formation is dependent on the duration and temperature of exposure, fibre chemistry and/or the presence of fluxing agents. As only a thin layer of the insulation hot face side is exposed to high temperature, respirable dust generated during removal operations does not typically contain detectable levels of crystalline silica (CS).

In applications where the material is heat soaked, duration of heat exposure is normally short and a significant de-vitrification allowing CS to build up does not occur. This is the case for waste mould casting for instance.

Toxicological evaluation of the effect of the presence of CS in artificially heated HTIW material has not shown any increased toxicity in vitro and in vivo. The results from different combinations of factors like increased brittleness of fibres, or microcrystals embedded in the glass structure of the fibre and therefore not biologically available may explain the lack of toxicological effects.

IARC evaluation as provided in Monograph 68 is not relevant as CS is not biologically available in after service HTIW and respirable dust generated during removals operations generally do not contain detectable levels of crystalline silica..

High concentrations of fibres and other dusts may be generated when after-service products are mechanically disturbed during operations such as wrecking. Therefore ECFIA recommends:

- control measures are taken to reduce dust emissions; and
- all personnel directly involved wear an appropriate respirator to minimise exposure and comply with local regulatory limits.

Full text of H- and EUH-statements:	
Carc. 1B	Carcinogenicity (inhalation) Category 1B
H350i	May cause cancer by inhalation.