SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Trade name	:	FIBERFRAX
Chemical name	:	Aluminosilicate refractory ceramic fibres
EC index no	:	650-017-00-8
EC no	:	604-314-4
CAS No	:	142844-00-6
REACH registration No	:	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

1.3. Details of the supplier of the safety data sheet

Supplier
Unifrax Limited
Mill Lane, Rainford
WA11 8LP St Helens, Merseyside - United Kingdom
T + 44 (0) 1744 88 7600 - F + 44 (0) 1744 88 9916
reachsds@unifrax.com

Email competent person
reachsds@unifrax.com

Distributor
Unifrax GmbH
Kleinreinsdorf 62
07989 Teichwolframsdorf - Germany
T + 49 (0) 366 24 40020 - F + 49 (0) 366 24 40099

Distributor
Unifrax France
17 Rue Antoine Durafour
42420 Lorette - France
T +33 (0) 4 7773 7000 - F +33 (0) 4 7773 3991

Distributor
Unifrax Derby
Shaftsbury Street
DE23 8XA Derby - United Kingdom
T +44 (0) 1332 331808

Distributor
Unifrax s.r.o.
Novosedicka 125
417 03 Dubi 3 - Czech Republic
T + 42 (0) 417 800 356 - F + 42 (0) 417 539 838

Distributor
Unifrax Italia Srl
Via Volonterio 19
21047 Saronno (VA) - Italy
T +39 02 967 01 808 - F +39 02 962 5721

Distributor
Unifrax Spain
Cristobal Bordiu 20
28003 Madrid - Spain
T + 34 91 395 2279 - F + 34 91 395 2124

1.4. Emergency telephone number

Emergency number	:	Occupational Hygiene and CARE: Tel: + 44 (0) 1744 887603; Email: reachsds@unifrax.com; (8.15-17.10 h); Language : English

SECTION 2: Hazards identification

2.1. Classification of the substance or 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

2.2. Label elements

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

Hazard pictograms (CLP) :

GHS08

Signal word (CLP) : Danger

Hazard statements (CLP) : H350i - May cause cancer by inhalation

Precautionary statements (CLP) : P202 - Do not handle until all safety precautions have been read and understood
P280 - Wear eye protection, protective gloves, Respiratory protection

Extra phrases : For professional users only

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

2.3. Other hazards

Adverse physicochemical, human health and environmental effects : May cause slight irritation to the skin. May cause slight irritation to eyes. May cause respiratory irritation.

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

SECTION 3: Composition/information on ingredients

3.1. Substance

Name : Aluminosilicate refractory ceramic fibres

CAS No : 142844-00-6

EC no : 604-314-4

EC index no : 650-017-00-8

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
Aluminosilicate refractory ceramic fibres substance listed as REACH Candidate	(CAS No) 142844-00-6 (EC no) 604-314-4 (EC index no) 650-017-00-8 (REACH-no) 01-2119458050-50-0001	100	Carc. 1B, H350i

Full text of H-statements: see section 16

3.2. Mixture

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation : Move to fresh air. If you feel unwell, seek medical advice.

First-aid measures 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.

First-aid measures after eye contact : Rinse cautiously with water for several minutes. If eye irritation persists: Get medical advice/attention.

First-aid measures 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.

SECTION 5: Firefighting 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.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Protective equipment : Concerning personal protective 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 operatives 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 : Recover mechanically the product. Minimize generation of dust. High efficiency particulate air filter (HEPA filter).

6.4. Reference to other sections

See Heading 7. See Heading 8. See Heading 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

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

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

Prohibitions on mixed storage : Keep away from food, drink and animal feeding stuffs.

7.3. Specific end use(s)

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

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

FIBERFRAX (142844-00-6)		
United Kingdom	Remark (WEL)	1,0 f/ml (HSE EH40 Workplace Exposure Limit)
United Kingdom	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	

FIBERFRAX (142844-00-6)	
DNEL/DMEL (additional information)	
long term - local effect, Inhalation	1,62 f/ml

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 1.62 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 to average 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.

8.2. Exposure controls

Hand protection	:	Chemical resistant PVC gloves (to European standard EN 374 or equivalent)
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
- 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 cleanup 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.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	:	Solid
Appearance	:	Fibres.
Colour	:	white.
Odour	:	odourless.
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
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

9.2. Other information

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

SECTION 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.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity	:	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)
Carcinogenicity	:	May cause cancer by inhalation. Method: Nose only Inhalation. Multi-dose Species: Rat, Dose: 3 mg/m3, 9 mg/m3 and 16 mg/m3 for 24 months Results: Minimal to mild lung fibrosis at 9mg/m3 and 16 mg/m3. No evidence of RCF-related lung tumours at "any of these doses." Method: Nose only Inhalation. Single dose Species: Rat, Dose: 30 mg/m3. Results: This study was designed to test the chronic toxicity and carcinogenicity of RCF at extreme exposures. Tumour incidence (incl. mesothelioma) was raised at this dose level. The presence of overload conditions (only detected after the experiment was completed), whereby the delivered dose exceeded the clearance capability of the lung, makes meaningful conclusions in terms of hazard and risk assessment difficult.
Reproductive toxicity	:	Not classified (Based on available data, the classification criteria are not met)
Specific target organ toxicity (single exposure)	:	Not classified (Based on available data, the classification criteria are not met)

Specific target organ toxicity (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 loss in lung function was observed in the longitudinal study with RCF exposure. 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.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.

12.2. Persistence and degradability

No additional information available

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

FIBERFRAX (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

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste 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

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

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

ADR	IMDG	IATA	ADN	RID
14.3. Transport hazard class(es)				
Not applicable	Not applicable	Not applicable	Not applicable	Not applicable
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 regulations (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

SECTION 15: Regulatory information

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

15.1.1. EU-Regulations

No REACH Annex XVII restrictions

FIBERFRAX is on the REACH Candidate List

Other information, restriction and prohibition regulations : Take note of Directive 94/33/EC on the protection of young people at work. Take note of 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

SECTION 16: Other information

Indication of changes:
General revision.

2.1	Classification according to Regulation (EC) No. 1272/2008 [CLP]	Modified	
2.2	Labelling according to Regulation (EC) No. 1272/2008 [CLP]	Modified	

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
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 Rai
PBT	Persistent Bioaccumulative Toxic
vPvB	Very Persistent and Very Bioaccumulative

Data sources : REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL of 16 December 2008 on classification, labelling and packaging of substances and mixtures, amending and repealing Directives 67/548/EEC and 1999/45/EC, and amending Regulation (EC) No 1907/2006.

Other information : Occupational Hygiene: dawn.webster@unifrax.com.

Full text of H- and EUH-statements:

Carc. 1B	Carcinogenicity (inhalation) Category 1B
H350i	May cause cancer by inhalation

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product