



MATERIAL SAFETY DATA SHEET
(EUROPEAN)

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1. IDENTIFICATION OF THE PRODUCT AND OF THE COMPANY

IDENTIFICATION OF THE SUBSTANCE

TRADE NAMES: XPE® AV2 EXPANDING MAT
DENOMINATION : REFRACTORY CERAMIC FIBRES (RCF)

XPE products contain synthetic vitreous alumino-silicate fibres.

IDENTIFICATION OF THE MANUFACTURER AND SALES CONTACTS

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Occupational Hygiene and CARE: Tel: + 44 (0) 1744 887603. Fax: + 44 (0) 1744 886173

2. COMPOSITION / INFORMATION ON INGREDIENTS

COMPONENT	WEIGHT %	EINECS NUMBER	CAS NUMBER	SYMBOL	R PHRASES
Vermiculite	45-60		1318-00-9	None	None
Alumino silicate fibres	30-50	266-046-0	142-844-00-6	T	R49, R38
Acrylic latex	5-15		28205-96-1	None	None
Hydrated aluminosilicate	0-2		1302-78-9	None	None

Chemical composition of alumino silicate fibres : SiO₂ 45-60% - Al₂O₃ 40-55%

Use of the product

XPE is an expanding mat designed to insulate and support the ceramic substrate during its normal operating cycle within an automotive catalytic converter system.

Should not be sold directly to the general public, restricted to professional users.

3. HAZARD IDENTIFICATION

IRRITANT EFFECTS

Mild mechanical irritation to skin, eyes and upper respiratory system may result from exposure. These effects are usually temporary.

CHRONIC RESPIRATORY HEALTH EFFECTS

RCFs have been classified by the EU as a category 2 carcinogen ("substances which should be regarded as if they are carcinogenic to man").

The International Agency for Research on Cancer (IARC) reaffirmed that group 2B ("possibly carcinogenic to humans") remains the appropriate classification for RCF.

Pre-existing skin and respiratory conditions including dermatitis, asthma or chronic lung disease, might be aggravated by exposure.

4. FIRST AID MEASURES

SKIN

In case of skin irritation 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.

NOSE AND THROAT:

If these become irritated move to a dust free area, drink water and blow nose.

If symptoms persist, seek medical advice.

5. FIRE FIGHTING MEASURES

Non combustible products. Packaging and surrounding materials may be combustible.

Use extinguishing agent suitable for surrounding combustible materials

6. ACCIDENTAL RELEASE MEASURES

Where abnormally high dust concentrations occur, provide workers with appropriate protective equipment as detailed in section 8.

Restrict access to the area to a minimum number of workers required.

Restore the situation to normal as quickly as possible.

Prevent further dust dispersion for example by damping the materials.

METHODS FOR CLEANING UP

Pick up large pieces and use a vacuum cleaner fitted with high efficiency filter (HEPA).

If brushing is used, ensure that the area is wetted down first.

Do not use compressed air for clean-up.

Do not allow to be wind blown.

Do not flush spillage to drain and prevent from entering natural watercourses.

Check for local regulations, which may apply.

7. HANDLING AND STORAGE

HANDLING / TECHNIQUES TO REDUCE DUST EMISSIONS DURING HANDLING

HANDLING

Handling can be a source of dust emission.

Process should be designed to limit the amount of handling. Whenever possible, handling should be carried out under controlled conditions (i.e., use dust exhaust system).

Using specially treated or packaged products will minimise dust release.

Regular good housekeeping will minimise secondary dust dispersal.

STORAGE

Store in original packaging in dry area whilst awaiting use.

Always use sealed and visibly 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.

8. EXPOSURE CONTROL / PERSONAL PROTECTION

HYGIENE STANDARDS AND CONTROL MEASURES

Hygiene standards and exposure limits may differ from country to country. Check those currently applying in your country and comply with local regulations.

Examples of exposure limits in January 2005 are given below:

Germany	0.5 f/ml	TRGS 900
France	0.6 f/ml	Circulaire DRT no 954 du 12/01/95
United Kingdom	1.0 f/ml	HSE EH40 Workplace Exposure Limit
Italy	0.2 f/ml	Circolare 15 Marzo 2000 n.4
Spain	0.5 f/ml	OM 11/09/98-BOE No. 223-17/09/98

**8-hr time weighted average concentrations of airborne respirable fibres measured using the conventional membrane filter method*

ENGINEERING CONTROLS

Review your RCF application(s) and assess situations with the potential for dust release. Where practical, enclose dust sources and provide dust extraction at source.

Designate RCF work areas and restrict access to informed and trained workers.

Use operating procedures, which will limit dust production and exposure of workers.

Keep the workplace clean. Use a vacuum cleaner fitted with an HEPA filter; avoid using brooms and compressed air.

If necessary, consult an industrial hygienist to design workplace controls and practices.

Using 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 treated or packaged to minimise or avoid dust release during handling.

Consult your supplier for further details.

PERSONAL PROTECTIVE EQUIPMENTS

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). Each worker should be provided with two lockers in an appropriate changing and washing area. It is good hygiene practice to ensure work clothes are washed separately by the employer. Work clothes should not be taken home.

EYE PROTECTION

As necessary wear goggles or safety glass 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 FFP3 respirators.

In case of higher concentrations or where the concentration is not known, please seek advice from your company and/or your supplier.

You may also refer to the ECFIA code of practice available on the ECFIA's web site.

INFORMATION AND TRAINING OF WORKERS

This should include:

The applications involving RCF-containing products ;
The potential risk to health resulting from the exposure to fibrous dust ;
The requirements regarding smoking, eating and drinking at the workplace ;
The requirements for protective equipment and clothing.
The good working practices to limit dust release ;
The proper use of protective equipment.

ENVIRONMENTAL EXPOSURE CONTROLS

Refer to local, national or European applicable environmental standards for release to air, water and soil.
For waste, refer to section 13

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical State	Solid	Melting point	>1650°C
Flammability	None	Length weighted geometric diameter	>1.5µm
Appearance	White	Explosive properties	None
Oxidising properties	None	Odour	None

10. STABILITY AND REACTIVITY

CONDITIONS TO AVOID

N.A.

MATERIALS TO AVOID

N.A.

DECOMPOSITION PRODUCTS

Thermal decomposition of binder from fires or from first heat of product may release smoke, carbon monoxide, carbon dioxide, oxides of nitrogen and small amounts of aromatic and aliphatic hydrocarbons. Use adequate ventilation or other precautions to eliminate exposure to vapours resulting from thermal decomposition of sacrificial binder. Exposure to thermal decomposition fumes may cause respiratory tract irritation, bronchial hyper-reactivity or an asthmatic-type response.

11. TOXICOLOGICAL INFORMATION

HUMAN DATA

IRRITANT PROPERTIES

RCF is negative when tested using approved methods (Directive 67/548/EC, Annex 5, Method B4). All man made mineral fibres, like some natural fibres, can produce a mild irritation resulting in itching or rarely, in some sensitive individuals, in slight reddening. Unlike other irritant reactions this is not the result of allergy or chemical skin damage but is caused by a temporary mechanical effect.

RESPIRATORY EFFECTS

There is no known disease associated with exposure to RCF even though these fibres have been used for more than 40 years. Pulmonary morbidity studies were carried out among production workers in Europe and the USA. A statistically significant association between RCF exposure and pleural plaques was reported in the US morbidity study, this was not seen in Europe. Plaques do not develop into disease.

DATA FROM ANIMAL EXPERIMENTS

In order to prepare samples for testing in animals RCF wools must be ground and suitably sized fibres separated. This process and its potential impact on the experimental findings have not been fully understood until quite recently. As such, in early animal experiments tumours were produced in animals after intrapleural and intraperitoneal injections although inhalation experiments were inconclusive. A series of experiments were designed to overcome the shortcomings of these early attempts and in these, the so-called RCC studies, RCFs produced fibrosis, and a significant number of tumours including some mesotheliomas. However this was only at the highest exposures used. It is now known that, due to the method used to prepare the samples, these exposures included a large number of non-fibrous particles not typical of any human exposure and that the dose of particles and fibres achieved was sufficient to considerably reduce dust clearance from the lungs. This would now be regarded as exceeding the maximum tolerated dose and is a condition that, in animals, will result in lung inflammation and tumours. This would now indicate that the results might have depended more on the method of sample preparation than any material properties of the fibre tested.

12. ECOLOGICAL INFORMATION

These products are inert materials, which remain stable over time. No adverse effects of this material on the environment are anticipated.

13. DISPOSAL CONSIDERATIONS

RCF is categorised as a stable non reactive hazardous waste, which can generally be disposed of at landfill, which has been licensed for this purpose. Please refer to the European list (Decision no 2000/532/CE as modified) to identify your appropriate waste number, and insure national and or regional regulation are complied with. Taking into account any possible contamination during use, expert guidance should be sought.

Unless wetted, such a waste is normally dusty and so should be properly sealed in clearly labelled containers for disposal. At some authorised disposal sites, dusty waste may be treated differently in order to ensure they are dealt with promptly to avoid them being wind blown. Check for national and/or regional regulations, which may apply.

14. TRANSPORT INFORMATION

Not classified as dangerous goods under relevant international transport regulations (ADR, RID, IATA, IMDG Refer Section 16 "Definitions").

Ensure that dust is not wind blown during transportation.

15. REGULATORY INFORMATION

Fibre type definition according to Directive 67/548/EEC

Regulatory status in the EU, comes from European Directive 67/548/EEC, on the classification, labelling and packaging of dangerous substances and preparations as modified by Directive 97/69/EC and its implementations by the Member States.

According to Directive 67/548/EEC, the fibre contained in this product belongs to the group of "man made vitreous(silicate) fibres with random orientation with alkaline oxide and alkali earth oxide (Na_2O + K_2O + CaO + MgO + BaO) content less or equal to 18% by weight".

Fibre type classification for substances and preparations according to annex I to Directive 67/548/EEC

Classification: Carcinogen Category 2 : Irritant

SYMBOL T (Skull and Crossbones - Toxic)

RISK PHRASES

R49 May cause cancer by inhalation

R38 Irritating to skin

SAFETY ADVICE PHRASES

S24/25 Avoid contact with skin and eyes

S36/37/39 Wear suitable loose fitting, long-sleeved clothing, gloves and eye protection

S38 Wear suitable respiratory equipment

Marketing and use of RCF is controlled by Directive 76/769/EEC and is restricted to professional use only.

This applies for sales in the European Union

PROTECTION OF WORKERS

Shall be in accordance with several European Directives as amended and their implementations by the Member States:

Council Directive 89/391/EEC dated 12 June 1989 "on the introduction of measures to encourage improvement in the safety and health of workers at work (OJEC (Official Journal of the European Community) L 183 of 29 June 1989, p.1).

Council Directive 98/24/EC dated 7 April 1997 "on the protection of workers from the risks related to chemical agents at work" (OJEC L 131 of 5 May 1998,p.11).

Council Directive 90/394/EC of 28 June 1990 on the protection of workers from risks related to exposure to carcinogens at work (OJEC L 196 of 26 July 1990, p.1).

Member states are in charge of implementing European directives into their own national regulation within a period of time normally given in the directive. Member States may impose more stringent requirements. Please always refer to national regulations.

16. OTHER INFORMATION

USEFUL REFERENCES (the directives which are cited must be considered in their amended version)

Working with Refractory Ceramic Fibres ; *ECFIA Code of Practice (February 1998)*

Recognition and control of exposure to Refractory Ceramic Fibres (RCF) ; *ECFIA Industrial hygiene guide (November 1999)*

Hazard from the use of Refractory Ceramic Fibres. Health and Safety Executive ; *Information document HSE 267 (1998)- UK*

Council Directive 89/391/EEC dated 12 June 1989 "on the introduction of measures to encourage improvements in the safety and health of workers at work" (*OJEC L 183 of 29 June 1989, p. 1*)

Council Directive 67/548/EEC on the "approximation of the laws, regulations and administrative provision relating to the classification, packaging and labelling of dangerous substances as modified and adapted to the technical progress" (*OJEC L 196 of 16 August 1967, p.1 and its modifications and adaptations to technical progress*).

Commission Directive 97/69/EC of 5 December 1997 “adapting to technical progress for the 23rd time Council Directive 67/548/EEC ,(OJEC L 343 *Official Journal of the European Communities*, 13/12/97 , p.19).

Council Directive 90/394/EC “on the protection of workers from risks related to exposure to carcinogens at work” *Official journal of the European Communities*, 26/07/90

Council Directive 98/24/EC of 7th April 1998 “on the protection of the health and safety of workers from risks related to chemical agents at work” (OJEC L131 of 5th May 1998, P.11)

TRGS 521 : *Faserstaube - Germany*

TRGS 619 - *Germany*

Maxim LD et al (1998), CARE – A European programme for monitoring and reducing refractory ceramic fibres dust at the workplace Initial results. *Gefahrstoffe – Reinhaltung der Luft*, 58-3, 97-103.

Refractory ceramic fibres : a substitute study, *RCFC document*, March 1996.

Circulaire DRT No 954 du 12/01/95 - France

Circolare 15 marzo 2000, n.4 – Italy

DEFINITIONS

ADR – Transport by road, council directive 94/55/EC

IMDG – Regulations relating to transport by sea

RID – Transport by rail, Council Directive 96/49/EC

ICAO/IATA - Regulations relating to transport by air

Precautionary measures to be taken after service and upon removal

CARE PROGRAMME

The European Ceramic Fibres Industry Association (ECFIA) has undertaken an extensive industrial hygiene programme to provide assistance to the users of RCF products.

The objectives are twofold:

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

If you wish to participate in the CARE programme, contact ECFIA or your supplier. FIA recommends that this fibre is not used for spraying

NOTE

The directives and subsequent regulations detailed in this Material Safety Data Sheet are only applicable to the European Union (EU) Countries and not to countries outside of the EU.

Websites

The European Ceramic Fibres Industry Association (ECFIA) : 3, Rue du Colonel Moll, 75017 Paris

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Site Web : www.ecfia.org

Or to Deutsche Keramikfaser-Gesellschaft e.V. web site: www.dkfg.de

NOTICE:

The information presented here in is based on data considered to be accurate as of the date of preparation of this Material 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 authorisation given or implied to practice any patented invention without a licence. 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.