RefractON GmbH
Am Bauhof 17 - 21
32657 Lemgo | GERMANY
Tel: +49 5261 25 07 - 850
Fax: +49 5261 25 07 - 23
info@RefractON.com
www.RefractON.com

1. IDENTIFICATION OF THE PRODUCT

1.1 Product :

Commercial Name: Bio/AES Blanket,Silica fiber blanket, module, paper, board and wool

1.2 Use of the product

Article for thermal insulation, heat shields,gaskets and expansion joints in industrial furnaces, kilns, boilers and other equipments for high temperature applications.

1.3 Company Name

1.31 **Supplier**

RefractON
Am Bauhof 17 – 21， 32657 Lemgo | GERMANY

1.3.2 **Contacts**

Mr. Jan Obermowe
Tel: +49 5261 2507 711

1.4 Emergency phone number

MB: +49 173 2525870

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2. HAZARD IDENTIFICATION

2.1 Mix classification:

No specific danger encountered with normal use..
The mix the article is made of, does not satisfy the criteria of Regulation (EC) No. 1272/2008 (CLP) and following modifications.

2.2 Other hazards which do not result in classification:

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

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3. COMPOSITION AND INFORMATION ON INGREDIENTS

3.1 Product :

These products in the form of, blanket(pre-sized or not), strip, die-cut and modules, block, paper, board made of AES wool(synthetic,fibres, alkaline earth silicate) .

3.2 Ingredients causing health risks :

Substances, hazardous for health according to Regulations and following modifications, or substances for which there are exposure known limits

Substance	EC NO	CAS	%W/W	Hazard Pictogram(s)
AES wool (synthetic fibres, alkaline earth silicate)	650-016-00-2	436083-99-7*	100	None

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4. FIRST AID MEASURES

4.1. Description of first aid measures

4.1.1 Inhalation

Ventilate the room. Remove immediately the patient from the contaminated place and keep him at rest in a well aired place. Drink water and blow the nose. If uneasiness persist seek medical advice.

4.1.2 Contact with skin:

Rinse with fresh water for at least 15 minutes. In case of irritation seek medical advice.

4.1.3 Contact with eyes:

Rinse with fresh water for at least 15 minutes. In case of irritation seek medical advice.

4.1.4 After accidental significant ingestion :

In case of ingestion rinse mouth with plenty of water and seek medical advice.

4.2. Principal acute and delayed symptoms:

Not applicable

4.3. Indication of the need of seeking immediate medical advice and special treatments :

On the base on the exposure level periodical medical advice is recommended.
Accidental contact is to be intended under dust form .

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5. FIRE FIGHTING MEASURES

5.1 Extinguishment equipment

In case of fire of the surrounding area all extinguishing equipment can be used.

5.2 Hazards arising from the mix

Product non inflammable and not explosive.

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6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, personal protection equipment and emergency procedures:

Clean: using protection goggles and anti dust masks (see also point 8.2.1)

6.2 Ecological information :

Avoid flushing into drains or water streams. Should this happen please advise competent authorities.

6.3 Methods and materials for retaining and reclamation :

Avoid raising of dust by wetting the floor before dusting. Do not use compressed air.Do not allow being windblown.

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7. HANDLING AND STORAGE

7.1 Precautions for safe handling :

7.1.1 Recommendations

Avoid a contact and inhalation of dusts. Handling has to be done, as much as possible, using aspiration system with filters. See point 8.

7.1.2 General Recommendations on professional hygiene

Do not eat or drink during work.

7.2 Conditions for a safe storage and possible incompatibility:

Store in original packaging in a dry area. Always use sealed and clearly labelled containers. Avoid damaging containers. Reduce dust emission during unpacking. .

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8. EXPOSURE CONTROL AND PERSONNEL PROTECTION

8.1 Control parameters:

Exposure limits of contained substances :

SUBSTANCE	CAS NO.	Country	Exposure limit	Source
AES wool (synthetic fibres, alkaline earth silicate)	436083-99-7	Germany	1.25 mg/m3	TRGS 900
	436083-99-7	France	1.0 f/ml	Circulaire DRT NO. 95-4 du 12.01.95
	436083-99-7	UK	2.0 f/ml & 5 mg/m3	HSE-EH40-Workplace Exposure Limit

*Time weighted average concentrations of airborne respirable fibres measured over 8 hours by the conventional membrane filter method or the total inhalable dust using standard gravimetric techniques.

8.2 Exposure controls

8.2.1 Suitable technical controls

All protection recommendations are to be intended exclusively on direct exposure of workers to mix breathable dusts.
Possible environmental controls on breathable air will allow to adopt suitable work precautions measures..
It is good to review work processes in order to analyze the real fonts of exposure to vapors..

8.2.2 Individual protection measures

8.2.2.1 Eye protection:

Not necessary during normal use. However work according to good working rules and wear safety goggles when it is possible to get in contact with fine dusts made by processing of the product.

8.2.2.2 Skin protection:

No particular precaution is needed during normal use. It is however advised to have a good personal and working clothes hygiene.

8.2.2.3 Respiratory protection:

Use respiratory protection in case of air dusts .
In case of concentration below the limit value no protection is compulsory but a type FFP2 mask could be proposed to be used on voluntary basis.

8.2.2.4 Hand Protection:

Where necessary use work gloves if in direct contact with dusts.

8.3 Environmental exposure controls

Avoid product to be released in the environment

9. CHEMICAL AND PHYSICAL CHARACTERISTICS

9.1 Information on physical and chemical characteristics :

Appearance		White fiber
Odor		None
Oxidizing properties		Non applicable
Melting point		> 1300 °C
Boiling point		Non applicable
Inflammable point		Non applicable
Explosive properties		Non applicable
Density		50-260 kg/m^3
Solubility		Less than 1 mg/l
Permanent thermal expansion		-2 % (1200℃)
CaO+MgO		18-25 %
SiO2		70-80 %
Al2O3		0.3 %
Thermal Conductivity		
	600 ℃	0.16 W/m*K
	800 ℃	0.25 W/m*K
	1000 ℃	0.36 W/m*K
	1200 ℃	0.50 W/m*K

9.2 Other information

No other data available

10. STABILITY AND REACTIVITY

10.1 Reactivity
AES is a stable product
10.2 Chemical stability
Inorganic, stable and inert
10.3 Possibility of dangerous reactions
N.A.
10.4 Conditions to avoid
N.A.
10.5 non compatible materials
N.A.
10.6 Decomposition dangerous products
Upon heating above 900 ℃ for sustained periods, this amorphous material begins to transform to mixtures of crystalline phases. For further information please refer to Section 16.

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11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

11.1.1 Acute Toxicity

Exposure is predominantly by inhalation or ingestion. Man made vitreous fibres of a similar size to AES have not been shown to migrate from the lung and/or gut and do not become located in other organs of the body. Fibres contained in the products listed in the title have been designed to be rapidly cleared from lung tissue. This low biopersistence has been confirmed in many studies on AES using EU protocol ECB/TM/27(rev 7). When inhaled, even at very high doses, they do not accumulate to any level capable of producing a serious adverse biological effect.

11.1.2 Immediate, delayed, chronic effects arising from short and long term exposure

In lifetime chronic studies there was no exposure-related effect more than would be seen with any "inert" dust. Subchronic studies at the highest doses achievable produced at worst a transient mild inflammatory response. Fibres with the same ability to persist in tissue do not produce tumours when injected into the peritoneal cavity of rats. AES Biowool fibres are negative when tested using approved methods. Like all man-made mineral fibres and some natural fibres, fibres contained in this product can produce a mild mechanical irritation resulting in temporary itching or rarely, in some sensitive individuals, in a slight temporary reddening. Unlike other irritant reactions this is not the result of allergy or chemical skin damage but is caused by mechanical effects. These materials have been designed to allow rapid clearance from lung tissue. And this low biopersistence has been confirmed in many studies on AES using EU protocol ECB/TM/27(rev 7).

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12. ECOLOGICAL INFORMATION

These products are inert materials that remain stable overtime and are chemically identical to inorganic compounds found in the soil and sediment; they remain inert in the natural environment. No adverse effects of this material on the environment are anticipated.

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13. DISPOSAL CONSIDERATION

Waste from these materials may be generally disposed off at a landfill, which has been licensed for this purpose. Please refer to the European list (Decision N° 2000/532/CE as modified) to identify your appropriate waste number, and insure national and/or regional regulations 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 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 windblown. Check for any national and/or regional regulations, which may apply.
Additional information:
When disposing of waste and assigning European Waste Code (EWC) any possible contamination during use will need to be considered and expert guidance sought as necessary.

14. TRANSPORT INFORMATION

Not classified as dangerous goods under relevant international transport regulations (ADR, RID, IATA, IMDG).
Ensure that dust is not windblown during transportation.
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.
ADN	European Agreement concerning the International Carriage of Dangerous Goods by Inland Waterways.

15. REGULATORY INFORMATION

15.1Safety Health And Environment Regulations/Legislation Specific For The Substances Or Mixtures

EU Regulations:
The fibre contained in this product is a mineral wool belonging to the group of “man-made vitreous (silicate) fibres with random orientation with alkaline earth oxide (Na2O+K2O+CaO+MgO+BaO) content greater to 18% by weight".
Under criteria listed fibres contained in the products are exonerated from carcinogen classification because of low pulmonary biopersistence measured by the methods specified in European Union and German regulations (EU protocol ECBT/TM/27(rev 7).
- Regulation (EC) No 1907/2006 dated 18/12/2006 on Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).
- Regulation (EC) No 1272/2008 dated 20/01/2009 on classification, labelling and packaging of substances and mixtures (OJ L 353).
Under 1.1.3.1. (Nota Q) of Annex VI of regulation (EC) 1272/2008 the classification as a carcinogen 2 needs not to be applied on the basis of short term biopersistence test by intratracheal installation showing a half life of less than 40 days for fibres longer than 20 µm.
1st Adaptation of Technical Progress of regulation (EC) N°1272/2008 of 10 August 2009 has removed skin irritancy classification for man-made vitreous (silicate) wools.
Fibres contained in this product are therefore free of any classification and do not require labelling under CLP regulation

15.2 Protection of workers

Shall be in accordance with several European Directives as amended and their implementations by the Member States:
a) 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 (Official Journal of the European Community) L 183 of 29 June 1989, p.1).
b) Council Directive 98/24/EC dated 7 April 1998 "on the protection of workers from the risks related to chemical agents at work" (OJEC L 131 of 5 May 1998, p.11).

16. OTHER INFORMATION

Precautionary Measures
Information On After Service Heated Fibres
In almost all applications high temperature insulating wool products/articles (HTIW) are used as an insulating material helping keeping up temperature at 900°C or more in a closed space. As only a thin layer of the insulation hot face side is exposed to high temperature, respirable dust generated during removal operations does not 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 devitrification 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.

The results from different combinations of factors like increased brittleness of fibres, or micro crystals 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 removal operations does not contain detectable levels of crystalline silica.
http://www.iarc.fr/en/publications/pdfs-online/index.php

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:
a) Control measures are taken to reduce dust emissions;
b) all personnel directly involved wear an appropriate respirator to minimise exposure and comply with local regulatory limits.

NOTICE:
The information presented herein 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 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.