**According to: (EC) No 1907/2006 and (EC) No1272/2008**

## 1. IDENTIFICATION OF THE SUBSTANCE AND OF THE COMPANY

Ecomab® Fibre Textiles contain Alkaline-earth silicate wools (AES wools)

Index Number : 650-016-00-2 Annex VI
**CAS number : 436083-99-7**
**Registration number : 01-2119457644-32-xxxx**

Other components: Ecomab® textile products contain viscose (maximum20%). Viscose is organic and not classified as dangerous.

**CAS-Number : 9004-34-6**
**CAS-Name : Viscose ($C_6H_{10}O_5)_n$**

**Use of the product**
Application as thermal insulation, heat shields, heat containment, gaskets and expansion joints in industrial furnaces, ovens, kilns, boilers and other process equipment and in the aerospace, automotive and appliance industries, and as passive fire protection systems and firestops.

**Identification of the company**

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## 2. HAZARDS IDENTIFICATION

**Classification of the substance/mixture**
Not applicable

**Labelling elements**
Not applicable

**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.

## 3. COMPOSITION / INFORMATION ON INGREDIENTS

| COMPONENT | % | CAS NUMBER | INDEX NUMBER |
|---|---|---|---|
| AES wool<br>(synthetic fibres, alk. earth silicate) | >80 | 436083-99-7* | 650-016-00-2 |
| Viscose | <20 | 9004-34-6 | |

**Composition**

Ecomab products are manufactured out of an alkaline earth silicate (AES) fiber and viscose.

* CAS definition:
Alkaline earth silicate (AES) consisting of silica (50-82 wt%), calcia and magnesia (18-43 wt%), alumina, titania and zirconia (less than 6 wt%), and trace oxides. *None of the components are radioactive under the terms of European Directive Euratom 96/29.*

## 4. FIRST AID MEASURES

**Skin**

Handling of this material may generate mild mechanical temporary skin irritation. If this occurs, 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.

Ecomab textile products can contain viscose (max. 20%). This organic fibre will burn out at a low temperature (aprox. at 200°C). This can cause smoke, however this will happen only once.

## 6. ACCIDENTAL RELEASE MEASURES

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

Restore the situation to normal as quickly as possible.
Prevent further dust dispersion for example by damping the materials.
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.
Check for local regulations, which may apply.

*For wastes disposal refer to section 13.*

## 7. HANDLING AND STORAGE

**Handling / techniques to reduce dust emissions during handling**

**Handling**
Handling can be a source of dust emission.
The Process or processes 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).
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.

## 8. EXPOSURE CONTROL / PERSONAL PROTECTION

**Hygiene standards and control measures**
Industrial hygiene standards and occupational exposure limits vary between countries and local jurisdictions. Check which exposure levels apply to your facility, and comply with local regulations. If no regulatory dust or other standards apply, a qualified industrial hygienist can assist with a specific workplace evaluation including recommendations for respiratory protection. Examples of exposure limits applying (in January 2010) to mineral wools in different countries are given below:

| Country | Exposure limits * | Source |
|---|---|---|
| Germany | 3.0 mg/m$^3$ | TRGS 900 |
| France | 1.0 f/ml | Circulaire DRT No 95-4 du 12.01.95 |
| United Kingdom | 2.0 f/ml and 5 mg/m$^3$ | HSE-EH40-Maximum 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.*

**Engineering controls**

Review your application(s) in order to identify potential sources of dust exposure.

Local exhaust ventilation, which collects dust at source, can be used. For example down draft tables, emission controlling tools and material handling equipment.

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

**Personal protective equipments**

**Skin protection**

Wear gloves and work cloths, which are loose fitting at the neck and wrists. Soiled cloths should be cleaned to remove excess fibres before being taken off. (e.g. use vacuum cleaner, not compressed air).

**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 FFP2 respirators.
In case of higher concentrations or where the concentration is not known, please seek advice from your company and/or your supplier.

**Information and training of workers**

Workers should be trained on good working practices and informed on applicable local regulations.

**Environmental exposure controls**

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





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## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | | | |
|---|---|---|---|
| **Appearance** | White fibre | **Partition coefficient** | Not applicable |
| **Boiling point** | Not applicable | **Odour** | None |
| **Flash point** | Not applicable | **Fibre melting point** | > 1300°C |
| **Autoflammability** | None | **Flammability** | Not applicable |
| **Oxidising properties** | None | **Explosive properties** | None |
| **Relative density** | 50 - 240 kg/m$^3$ | **Vapour pressure** | Not applicable |
| **Solubility** | Less than 1 mg/l | **pH** | Not applicable |

**Length weighted geometric mean diameter of fibres contained in the product**
1.9 – 6 µm

## 10. STABILITY AND REACTIVITY

**Conditions or materials to avoid**
None

**Decomposition products**
Upon heating above 900°C for sustained periods, this amorphous material begins to transform to mixtures of crystalline phases. For further information please refer to Section 16.

## 11. TOXICOLOGICAL INFORMATION

**Irritant properties**
When tested using approved methods (Directive 67/548/EC, Annex V, Method B4), fibres contained in this material give negative results. 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.

**Other Animal Studies**
These materials have been designed to allow rapid clearance from tissue. And this low biopersistence has been confirmed in many studies using EU protocol ECB/TM/27 (rev. 7) and the German method specified in TRGS 905 (1999).
When inhaled, even at very high doses, they do not accumulate to any level capable of producing a serious adverse biological effect. 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.

## 12. ECOLOGICAL INFORMATION

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

## 13. DISPOSAL CONSIDERATIONS

Waste from these products may 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**

According to Directive 67/548/EEC, 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 oxide and alkali earth oxide ($Na_2O + K_2O + CaO + MgO + BaO$) content greater than 18 % by weight”.

Under criteria listed in nota Q of Directive 67/548/EEC, AES wools are exonerated from carcinogen classification because of low pulmonary biopersistence measured by the methods specified in European Union and German regulations (EU protocol ECB/TM/27(rev 7).

31st Adaptation to Technical Progress of Directive 67/548/EEC of 15 January 2009 has removed skin irritancy classification for man-made vitreous (silicate) wools.

**2. Fibre type definition according to regulation (EC) no 1272/2008 amending and repealing directives 67/548/EEC and 1999/45/EC, and amending regulation (EC) no 1907/2006.**

This regulation aims at incorporating the GHS criteria into the EU Community law. Under 1.1.3.1. (Nota Q) of Annex VI of regulation (EC) 1272/2008 the classification as a carcinogen 2 needs not apply 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.

**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).

**Other possible regulations**
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 any national regulation.

**This applies for sales in the European Union**

## 16. OTHER INFORMATION

**Useful references** (the directives which are cited must be considered in their amended version)

- 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).
- Regulation (EC) No 1907/2006 dated 18th December 2006 on Registration, Evaluation, Authorisation and Restriction of Chemicals (REACH).

- Regulation (EC) No 1272/2008 dated 20th January 2009 on classification, labeling and packaging of substances and mixtures (OJ L 353).
- Commission Directive 97/69/EC of 5 December 1997 adapting to technical progress for the 23rd time Council Directive 67/548/EEC (OJEC of 13 December 1997, L 343).
- Council Directive 98/24/EC of 7 April 1998 "on the protection of the health and safety of workers from the risks related to chemical agents at work" (OJEC L 131 of 5 May 1998, p11).

**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 |

**Precautionary measures to be taken after service and 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. As produced, *AES* fibres 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 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 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.

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.

**CARE programme**

The trade association representing the European high temperature insulation wool industry (ECFIA) has undertaken an extensive hygiene program for High Temperature Insulation Wool (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.

The initial results of the programme have been published. If you wish to participate in the CARE programme, contact ECFIA or the Insulcon Group.





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