Glass Mineral Wool
with ECOSE Technology
1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product identifier

Generic product name: Knauf Insulation Glass Mineral Wool

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

Recommended use: Thermal and/or acoustic insulation for use in technical applications, industrial applications and in building construction.

1.3. Details of the supplier of the safety data sheet

Producer: Knauf Insulation
Head Office,
Am Bahnhof
97346 Iphofen
Germany
Web: www.knaufinsulation.com

<table>
<thead>
<tr>
<th>Region</th>
<th>Contact</th>
<th>Telephone number</th>
<th>Email</th>
</tr>
</thead>
<tbody>
<tr>
<td>UK</td>
<td>Head Office</td>
<td>+32 (0) 1048 8460</td>
<td><a href="mailto:sds@knaufinsulation.com">sds@knaufinsulation.com</a></td>
</tr>
<tr>
<td></td>
<td>Country Contact</td>
<td>+44 (0) 1744 766 666</td>
<td><a href="mailto:chris.roughneen@knaufinsulation.com">chris.roughneen@knaufinsulation.com</a></td>
</tr>
</tbody>
</table>

1.4. Emergency telephone number

2. HAZARDS IDENTIFICATION

2.1. Classification of the substance or mixture

European directive 67/548/EEC: The product is not classified.
Regulation (CE) n°1272/2008: The product is not classified.

2.2. Label elements

There are no Risk Phrases associated with this product

2.3. Other hazards

Most important hazards: The mechanical effect of fibres in contact with the skin can cause a temporary itching.
Specific hazards: not applicable
3. COMPOSITION / INFORMATION on INGREDIENTS

3.2. Mixtures

<table>
<thead>
<tr>
<th>Substance</th>
<th>C.A.S. number</th>
<th>weight (%)</th>
<th>Classification and labelling</th>
<th>REACH Registration Number</th>
<th>EC number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Glass mineral wool</td>
<td>None</td>
<td>87 - 100%</td>
<td>Not Classified</td>
<td>01 - 2119472313</td>
<td>926-099-9</td>
</tr>
<tr>
<td>Thermo set, inert polymer bonding agent derived from plant starches</td>
<td>None</td>
<td>0 - 13%</td>
<td>Not Classified</td>
<td>Not Classified</td>
<td>Not Classified</td>
</tr>
</tbody>
</table>

iii: Mineral wool man (machine) made vitreous fibre (mmvf), alkali and alkaline earth (CaO + MgO + NaO + K₂O) > 18 % in weight meeting the requirements of Note Q of directive 97/69/EEC

*: Mineral wool man (machine) made vitreous fibre (mmvf), alkali and alkaline earth (CaO + MgO + NaO + K₂O) > 18 % in weight meeting the requirements of Note Q of directive 97/69/EEC

ii: Glass mineral wool insulation fibres are not classified carcinogenic according to regulation n° 1272/2008 (page 335 of the JOCE L353 of December 31, 2008)

Possible facing or encapsulation materials: glass veil, or polyester mat or aluminium or Kraft paper or encapsulated in low density polyethylene (LDPE) and metallised LDPE film.

4. FIRST AID MEASURES

4.1 Description of first aid measures

- Exposure route:
  - Inhalation: Remove from exposure. Rinse the throat and blow nose to clear dust.
  - Skin contact: If mechanical irritation occurs, remove contaminated clothing and wash skin gently with cold water and soap.
  - Eyes contact: Rinse abundantly with water for at least 15 minutes.
  - Ingestion: Drink plenty of water if accidentally ingested.

4.2 Most important symptoms and effects, both acute and delayed

The mechanical effect of fibres in contact with the skin can cause a temporary itching.

4.3. Indication of any immediate medical attention and special treatment needed

If any adverse reaction or discomfort continues from any of the above exposures, seek professional medical advice

5. FIREFIGHTING MEASURES

5.1. Extinguishing media

- Suitable extinguishing media: Water, foam, carbon dioxide (CO₂) and dry powder.

5.2. Special hazards arising from the substance or mixture

- Products do not pose a fire hazard in use; however, some packaging materials or facings may be combustible. Products of combustion from product and packaging – carbon dioxide, carbon monoxide and some trace gases such as ammonia, nitrogen oxides and volatile organic substances.

5.3. Advice for firefighters

- In large fire in poorly ventilated areas or involving packaging materials respiratory protection / breathing apparatus may be required.
6. ACCIDENTAL RELEASE MEASURES

6.1. Personal precautions, protective equipment and emergency procedures

**Personal precautions**: In case of presence of high concentrations of dust, use the same personal protective equipment as mentioned in section 8.

6.2. Environmental precautions

**Environmental protection**: not relevant

6.3. Methods and material for containment and cleaning up

**Methods for cleaning up**: Vacuum cleaner or dampen down with water spray prior to brushing up.

6.4. Reference to other sections

**Reference to other sections**: For personal protection, see section 8. For waste disposal, see section 13.

7. HANDLING and STORAGE

7.1. Precautions for safe handling

- **Technical measures**: No specific measure. Cut using a knife, do not use a saw or use power tools.
- **Precautions**: Ensure adequate ventilation of workplace.
- **Safe handling advice**: Avoid unnecessary handling of unwrapped product.

7.2. Conditions for safe storage, including any incompatibilities

- **Technical measures**: No specific measure, palletised products should be stored in accordance with Knauf Insulation guidance sheet and site specific risk assessment.
- **Suitable storage condition**: Store products removed from pallet and packaging or loose un-palletised product, in a dry location.
- **In-compatible materials**: none
- **Packaging material**: Delivered packed in polyethylene film and or on wooden pallets

7.3. Specific end use(s)

**Specific end use(s)**: not relevant
8. EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1. Control parameters

Exposure Limit Value : None at European level, refer to member state guidelines and legislation:-

UK: Airborne 2 f/ml, total inhalable gravimetric limit; 5 mg/m³

8.2. Exposure controls

Engineering controls : No specific requirements

Individual protection equipments:

- Respiratory protection : Wearing a face mask type in accordance with EN 149 FFP1 is recommended when using products in confined atmosphere or during operations which can generate emission of any dust

- Hand protection : Gloves to avoid itching in conformity with EN 388

- Eyes protection : Goggles especially if working above shoulders. Eye protection to EN 166 is advised

- Skin protection : Cover exposed skin.

- Hygiene measures : After contact, wash hands with cold water and soap

The following sentence and pictograms are printed on packaging:

“The mechanical effect of fibres in contact with skin may cause temporary itching”

Cover exposed skin. When working in unventilated area wear disposable face mask

Rinse in cold water before washing

Clean using vacuum equipment

Ventilate working area if possible

Waste should be disposed of according to local regulations

Wear goggles when working overhead
9. PHYSICAL and CHEMICAL PROPERTIES

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>Solid</td>
</tr>
<tr>
<td>Form</td>
<td>Roll, panel or loose fibre</td>
</tr>
<tr>
<td>Colour</td>
<td>Brown</td>
</tr>
<tr>
<td>Odour</td>
<td>not relevant</td>
</tr>
<tr>
<td>pH</td>
<td>not relevant</td>
</tr>
<tr>
<td>Boiling point</td>
<td>not relevant</td>
</tr>
<tr>
<td>Flash point</td>
<td>not relevant</td>
</tr>
<tr>
<td>Flammability</td>
<td>not relevant</td>
</tr>
<tr>
<td>Explosive properties</td>
<td>not relevant</td>
</tr>
<tr>
<td>Density</td>
<td>From 9 to 35 kg/m^3</td>
</tr>
<tr>
<td>Water solubility</td>
<td>Generally chemically inert and insoluble in water.</td>
</tr>
<tr>
<td>Fat solubility</td>
<td>not applicable</td>
</tr>
</tbody>
</table>

9.2. Other information:

<table>
<thead>
<tr>
<th>Property</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approximate nominal diameter of fibres</td>
<td>3 à 5 µm</td>
</tr>
<tr>
<td>Length weight geometric mean</td>
<td>&lt; 6 µm</td>
</tr>
<tr>
<td>Orientation of fibres</td>
<td>Random</td>
</tr>
</tbody>
</table>

10. STABILITY and REACTIVITY

10.1. Reactivity                  | None.                    |

10.2. Chemical Stability          | Binder will decompose above 200°C |

10.3. Possibility of hazardous reactions | None in normal conditions of use |

10.4. Conditions to avoid         | Heating above 200°C.       |

10.5. Incompatible materials      | None.                     |

10.6. Hazardous decomposition products | None in normal condition of use. Decomposition of binder above 200 °C may produce carbon dioxide and some trace gases. The duration of release is dependant upon the thickness of the insulation, binder content and the temperature applied. |
11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

- **Acute effect**: The mechanical effect of fibres in contact with the skin can cause a temporary itching.

- **Carcinogenic effect**: Classification not applicable for this product; in accordance with the directive 97/69/EC and European Regulation 1272/2008, nota Q. Weighted clearance half life of fibres, with length greater than 20µm after intra-tracheal instillation, is less than 40 days (result obtained from a test conform to the European protocol).

12. ECOLOGICAL INFORMATION

12.1. Toxicity: This product is not ecotoxic to air, water or soil, by composition.

12.2. Persistence and degradability: Inert inorganic product with Thermo set, inert polymer bonding agent derived from plant starches; 5 to 13%.


12.4. Mobility in soil: Not considered mobile. Less than 1% leachable organic carbon if landfill.

12.5. Results of PBT and vPvB assessment: Not relevant.

12.6. Other adverse effects: None known.

13. DISPOSAL CONSIDERATIONS

13.1. Waste treatment methods

- **Waste from residues**: Dispose of in accordance with regulations and procedures in force country of use or disposal.

- **Dirty packaging**: Dispose of in accordance with regulations and procedures in force in country of use or disposal.

- **European waste catalogue code**: 17 06 04, non hazardous.

14. TRANSPORT INFORMATION

14.1. UN number: not classified for transport

14.2. UN proper shipping name: not classified for transport

14.3. Transport hazard class(es): not classified for transport

14.4. Packing group: not classified for transport

14.5. Environmental hazards: not classified for transport

14.6. Special precautions for user: not classified for transport

14.7. Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code: not classified for transport
15. REGULATORY INFORMATION

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

The European Regulation on Chemicals No 1907/2006, Registration, Evaluation, Authorisation & Restriction of Chemicals (REACH) enacted on June 1st 2007 requires the provision of Safety Data Sheet (SDS) for hazardous substances and mixtures / preparations.

Knauf Insulation mineral wool products (panels, batts or rolls), are defined as articles under REACH and therefore a Safety Data Sheet for these products is not a legal requirement.

In accordance with industry practice and voluntary commitments, Knauf Insulation has decided to continue to provide its customers with the appropriate information for the purpose of assuring safe handling and use of mineral wool throughout the product life.

This material Safety data sheet is in accordance with the EU directives 67/548/EEC, 1999/45/EEC, 1907/2006, 1272/2008 and 453/2010

15.2. Chemical safety assessment : not relevant.

16. OTHER INFORMATION

All products manufactured by Knauf Insulation are made of non-classified fibres and are certified by EUCEB.

EUCB, European Certification Board of Mineral Wool Products - www.euceb.org, is a voluntary initiative by the mineral wool industry. It is an independent certification authority that guarantees that products are made of fibres, which comply with the exoneration criteria for carcinogenicity (Note Q) of the Directive 97/69/EC and the Regulation (EC) 1272/2008.

To ensure that fibres comply with the exoneration criteria all tests and supervision procedures are carried out by independent, expert qualified institutions. EUCB ensures that the producers of mineral wool have put in place self-control measures.

The mineral wool producers commit to EUCEB to:

- supply sampling and analysis reports established by laboratories recognized by EUCEB, proving that the fibres comply with one of the four criteria of exoneration described in Note Q of the Directive 97/69/EC,
- be controlled, twice per year, of each production unit by an independent third party recognized by EUCEB (sampling and conformity to the initial chemical composition),
- put in place procedures of internal self-control in each production unit.

The products responding to the EUCEB certification are recognized by the EUCEB logo put on the packaging.

 Further information can be obtained from:-
 www.Eurima.org
 www.knaufinsulation.com

Moreover, in 2001, the IARC, reclassified glass mineral wool fibres from Group 2B (possibly carcinogenic) to Group 3 « agent which cannot be classified as for their carcinogenicity to humans ». (See Monograph Vol 81, http://monographs.iarc.fr/ )
Product Families

- Earthwool Loft Rolls
- Earthwool FactoryClad Rolls
- Earthwool FrameTherm Rolls and Slabs
- Earthwool Room-in-Roof Rolls
- Earthwool Acoustic Rolls and Slabs
- Earthwool Cavity Slabs
- Earthwool Universal Slabs
- Earthwool Duct Slab
- Space Insulation
- OEM Rolls and Slabs
- Retail Loft Roll
- Knauf Saver Value Triple Loft Insulation
- Everyday Eco Loft Insulation
- R-Fill
- EKO Loft Rolls