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| Product name: | Glass Mineral Wool with ECOSE® Technology | Page: | 1/13 |
| Revision Date: | 2016-06-01 | Print date: | 2016-06-01 |
| P/N-no.: | KI_DP_101 | SDS-ID: | US-EN/1.3 |

SECTION 1: IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

Product identifier

Product name: Glass Mineral Wool with ECOSE® Technology

Synonyms, trade names: EcoBatt® (Unfaced and Faced) Building Insulation, EcoBatt® QuietTherm® (Unfaced and Faced) Building Insulation, Acoustical/IB Board, Acoustical Board Smooth, Air Duct Board (Atmosphere®Eclipse®), KB Blanket, Black Acoustical Board, Black Diffuser Board, Condensation Control Blanket, Duct Liner (Atmosphere®and Sonic XP®), Duct Wrap Faced and Unfaced (Atmosphere® Friendly Feel®), Earthwool® 1000° Pipe Insulation*, ET Batt*, ET Blanket*, ET Board*, ET Panel*, Equipment Liner M, Everbilt (Unfaced and Faced) Building Insulation, Fabrication Board*, Flexible Duct Material, Guardian (Unfaced and Faced) Building Insulation, Hullboard*, Insulation Board (Faced and Unfaced)*, KF-110*, KFR/ET Range Insulation*, KN Series*, Manufactured Housing Duct Board, Manufactured Housing Insulation, Metal Building Insulation, Metal Building Filler Insulation, Pipe & Tank Insulation*, Earthwool® Redi-Klad® 1000° Pipe Insulation*, Rigid Plenum Liner, Sill Sealer, Wall & Ceiling Liner M, Guardian by Knauf Insulation
(* See section 2., 8, 10)

Revision: Date: 2016-06-01

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

Identified use(s): Thermal and/or acoustic insulation for use in technical applications, industrial applications and in building construction.

Uses advised against: None known.

Details of the supplier of the safety data sheet

Head Office Knauf Insulation LLC
One Knauf Drive
Shelbyville
IN 46176-1496
Tel: 800 825 4434
sds@knaufinsulation.com
www.knaufinsulation.us

Region: United States, Central & South America's

Emergency telephone number

Emergency telephone: 24hrs Chemtrec Tel: Tel: 800 424 9300

SECTION 2: HAZARDS IDENTIFICATION

Classification of the substance or mixture

Classification according to the OSHA Hazard Communication Standard (29 CFR 1910.1200)
: The product is not classified.

Label elements

Contains: None.

Hazard pictogram: None.

Signal word: None.

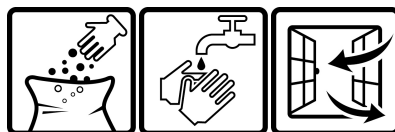
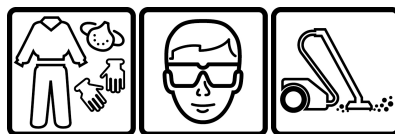
Hazard statements: None.

Precautionary statements:

- Prevention: None.
- Response None.
- Storage None.
- Disposal None.

Supplemental label information: None.

The following sentences and pictograms are printed on packaging: The mechanical effect of fibers in contact with skin may cause temporary itching.



www.knaufinsulation.com/comfort-and-handling

Other hazards

None.

Hazard summary

Physical Hazards: None.

Health Hazards: Mechanical irritation of the skin, eyes and upper respiratory system.

Environmental Hazards: None.

Main symptoms: Contact with skin, eyes and upper respiratory system may cause mechanical irritation.

Biosoluble glass mineral wool is classified as a nuisance dust by OSHA.

* Heat-Up Precautions: When heated to temperatures above 400°F for the first time, release of binder components and binder decomposition products can occur which, in high concentrations, may irritate eyes and the respiratory system. - See section 8. & 10

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SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Substances

| <u>%:</u> | <u>CAS-No.:</u> | <u>Chemical name:</u> | <u>Hazard classification:</u> | <u>Notes:</u> |
|-----------|-----------------|---|-------------------------------|---------------|
| 87-100 | - | Biosoluble glass mineral wool | - | (1), (2), (3) |
| 0-13 | - | Thermo set, inert polymer bonding agent derived from plant starches | - | (1) |

Notes:

- (1) Specific chemical identity and/or exact percent concentration is withheld as trade secret.
- (2) Man made vitreous (silicate) fibers with random orientation with alkaline oxide and alkali earth oxide (Na₂O+K₂O+CaO+MgO+BaO) content greater than 18% by weight meeting the requirements of Note Q of regulation n° 1272/2008 and therefore not classified carcinogenicity.
- (3) All Knauf Insulation products covered by this SDS are independently certified by EUCEB to be manufactured using biosoluble glass formulations and thus exempt from labeling under NTP or California Prop 65 requirements.

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SECTION 4: FIRST AID MEASURES

Description of first aid measures

General Information:

Show this Safety Data Sheet to the medical professional in attendance. If symptoms occur, follow first aid measures as appropriate.

Notes to Physician: None specific.

Inhalation: Remove from exposure. Rinse the throat and clear dust from airways.

Skin contact: If mechanical irritation occurs, remove contaminated clothing and wash skin gently with cold water and soap.

Eye contact: Rinse abundantly with water for at least 15 minutes.

Ingestion: Drink plenty of water if accidentally ingested.

Most important symptoms and effects, both acute and delayed

Contact with skin, eyes and upper respiratory system may cause mechanical irritation. Biosoluble glass mineral wool is classified as a nuisance dust by OSHA.

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.

Medical attention/treatments: None specific.

SECTION 5: FIREFIGHTING MEASURES

Extinguishing media

Water, foam, carbon dioxide (CO₂), and dry powder.

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.

Advice for firefighters

In large fires in poorly ventilated areas involving packaging materials respiratory protection / breathing apparatus may be required.

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SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal precautions: Minimize direct contact with skin in order to prevent mechanical itching. In dusty environments, use suitable respiratory protection such as 3M 8210, N95 or equivalent. Use glasses or goggles when working with mineral wool insulation above shoulder height or in dusty environments. Where possible, use natural ventilation during installation in order to minimize dust levels.

After contact with the product, rinse skin in cold water to reduce potential effects of mechanical itching. Dispose of surplus product in accordance with local regulations.

Emergency procedures: Use personal protection recommended in Section 8 of the SDS.

Environmental precautions

Not relevant.

Methods and material for containment and cleaning up

In dusty environments, use vacuum equipment where possible to minimize dust levels.

Reference to other sections

For personal protection, see section 8. For waste disposal, see section 13.

SECTION 7: HANDLING AND STORAGE

Precautions for safe handling

Assure proper respiratory protection if dust potential exceeds PEL/TLV.

Conditions for safe storage, including any incompatibilities

To ensure optimum product performance; when packaging is removed or opened; products should be stored inside or covered to protect them from ingress of rain water or snow.

Storage arrangements should ensure stability of stacked products and use on a first in first out basis (FIFO) is recommended.

Specific end use(s)

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

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

United States

Occupational exposure limits:

| <u>CAS- No.:</u> | <u>Chemical name:</u> | <u>As:</u> | <u>Exposure limits:</u> | <u>Type:</u> | <u>Notes:</u> | <u>References:</u> |
|----------------------|--|------------|-------------------------|--------------|---------------|--------------------|
| - | Glass wool fibers | - | 1 fiber/ml | TWA | A3 | ACGIH |
| - | Mineral wool fiber, total particulate | - | 5 mg/m ³ | TWA | - | NIOSH |
| - | Particulates not otherwise regulated (PNOR), respirable fraction | - | 5 mg/m ³ | TWA | - | OSHA |
| - | Particulates not otherwise regulated (PNOR), total dust | - | 15 mg/m ³ | TWA | - | OSHA |

Notes: (A3) - Fibers longer than 5 µm; diameter less than 3 µm; aspect ratio greater than 5:1 as determined by the membrane filter method at 400-450X magnification (4-mm objective) phase contrast illumination.
- Biosoluble glass mineral wool - See section 3.

Exposure controls

Engineering measures: Maintain sufficient mechanical or natural ventilation to assure fiber concentrations remain below PEL/TLV Use local exhaust if necessary. Power equipment should be equipped with properly designed dust collection devices.

Eye/face protection: Use glasses or goggles when working with mineral wool insulation above shoulder height or in dusty environments.

Skin protection: Minimize direct contact with skin in order to prevent mechanical itching.

Respiratory equipment: In dusty environments, use suitable respiratory protection.

Hygiene measures: After contact with the product, rinse skin in cold water to reduce potential effects of mechanical itching.

Environmental Exposure Controls: Not relevant.

* Heat-Up Precautions: When heated to temperatures above 400°F for the first time, release of binder components and binder decomposition products can occur which, in high concentrations, may irritate eyes and the respiratory system. The duration of release is dependant upon the thickness of the insulation, binder content and the temperature applied. Adequate ventilation should be provided. In confined spaces or where ventilation is not possible, occupants should wear appropriate self-contained breathing apparatus.

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SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

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|---|--|
| <u>Appearance:</u> | Solid. |
| <u>Form:</u> | Rolls, loose fiber, Panel. |
| <u>Color:</u> | Brown. |
| <u>Odor:</u> | Not relevant. |
| <u>Odor threshold:</u> | Not relevant. |
| <u>pH:</u> | Not relevant. |
| <u>Melting point / freezing point:</u> | Not relevant. |
| <u>Initial boiling point and boiling range:</u> | Not relevant. |
| <u>Flash point:</u> | Not relevant. |
| <u>Auto Ignition Temperature (°F):</u> | Not relevant. |
| <u>Flammability (solid, gas):</u> | Not relevant. |
| <u>Flammability limit - lower (%):</u> | Not relevant. |
| <u>Flammability limit - upper (%):</u> | Not relevant. |
| <u>Vapor pressure:</u> | Not relevant. |
| <u>Vapor density:</u> | Not relevant. |
| <u>Evaporation rate:</u> | Not relevant. |
| <u>Relative density:</u> | 7 – 96 kg/m ³ |
| <u>Partition coefficient (n-octanol/water):</u> | Not relevant. |
| <u>Solubility:</u> | Generally chemically inert and insoluble in water. |
| <u>Decomposition temperature (°F):</u> | Not relevant. |
| <u>Viscosity:</u> | Not relevant. |
| <u>—</u> | |
| <u>Other data:</u> | Nominal diameter of fibers 3 - 8µm |
| | Length weight geometric mean diameter less 2 standard errors: < 6 µm |
| | Orientation of fibers: Random |

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SECTION 10: STABILITY AND REACTIVITY

Reactivity

None.

Chemical stability

Binder will decompose above 400°F

Possibility of hazardous reactions

None.

Conditions to avoid

Heating above 400°F

Incompatible materials

Hydrofluoric acid will react with and dissolve glass.

Hazardous decomposition products

None in normal conditions of use.

When heated to temperatures above 400°F for the first time, release of binder components and binder decomposition products can occur which, in high concentrations, may irritate eyes and the respiratory system. The duration of release is dependant upon the thickness of the insulation, binder content and the temperature applied. Adequate ventilation should be provided. In confined spaces or where ventilation is not possible, occupants should wear appropriate self-contained breathing apparatus.

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SECTION 11: TOXICOLOGICAL INFORMATION

Information on toxicological effects

Ingestion: Non-hazardous when ingested.
Inhalation: Mechanical irritation to upper respiratory tract.
Skin contact: Mechanical irritation to skin.
Eye contact: Mechanical irritation to eyes.
Symptoms: Contact with skin, eyes and upper respiratory system may cause mechanical irritation.
Biosoluble glass mineral wool is classified as a nuisance dust by OSHA.

Information on toxicological effects:

Acute toxicity: No data were identified for the product as a whole.
Data are for constituents:

Product name: Biosoluble glass mineral wool

Result - LD50
Species - N/A.
Dose - N/A.
Exposure - N/A.

Product name: Thermo set, inert polymer bonding agent derived from plant starches.

Result -
Species - N/A.
Dose - N/A.
Exposure - N/A.

Serious eye damage/irritation: May cause mechanical irritation to eyes.
Skin Corrosion/Irritation: May cause mechanical irritation to skin.
Respiratory or skin sensitization: No data were identified for this product or its constituents.
Germ cell mutagenicity: No data were identified for this product or its constituents.

Carcinogenicity: Results from a biopersistence test by intratracheal instillation has shown that fibers in this product longer than 20 µm have a weighted half-life less than 40 days, thus this product is not classified as a carcinogen. None of the components of this product are listed as a carcinogen by OSHA, IARC or NTP.

Reproductive Toxicity: No data available for this product or its constituents.
Developmental Effects: No data were identified for this product or its constituents.
STOT - Single exposure:: No data were identified for this product or its constituents.
STOT - Repeated exposure:: No data were identified for this product or its constituents.
Aspiration hazard: Not relevant.

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SECTION 12: ECOLOGICAL INFORMATION

Toxicity

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

Persistence and degradability

Inert inorganic product with Thermo set, inert polymer bonding agent derived from plant starches; 0 - 13%

Bioaccumulative potential

Will not bio-accumulate.

Mobility in soil

Not considered mobile. Less than 1% leachable organic carbon if landfilled.

Results of PBT and vPvB assessment

Not relevant.

Other adverse effects

None known.

SECTION 13: DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste from residues: Dispose of in accordance with all applicable regulations.

Contaminated packaging: Empty containers should be taken to an approved waste handling site for recycling or disposal.

Disposal methods: This product is not regulated under RCRA Hazardous Waste Regulations. May be disposed in landfill. If unsure, contact the local office of the USEPA, your local public health department or the local landfill regulators.

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SECTION 14: TRANSPORT INFORMATION

UN number

Not regulated.

UN proper shipping name

Not regulated.

Transport hazard class(es)

Not regulated.

Packing group

Not regulated.

Environmental hazards

Not regulated.

Special precautions for user

Not regulated.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not regulated.

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SECTION 15: REGULATORY INFORMATION

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

OSHA Status: Labeling: This product is regulated as a nuisance dust under OSHA criteria.

TSCA listed: All components of this product are listed or exempt from listing on the TSCA inventory.

CERCLA Reportable Quantity: Not regulated.

SARA Title III:

Section 302 Extremely Hazardous: Not regulated.

Section 311/312 Hazard Categories: Not regulated.

Section 313 Toxic Chemicals: Not listed.

California Safe Drinking Water and Toxic Enforcement Act (Prop. 65): This product is exempt from labeling requirements under this Act.

In accordance with industry practice, 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.

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SECTION 16: OTHER INFORMATION

Label in accordance with OSHA HCS (2012): This product is not classified as hazardous.

Abbreviations and acronyms used in the safety data sheet:

CAS: Chemical Abstract Service
CFR: Code of Federal Regulations
EUCEB: European Certification Board for Mineral Wool Products
IARC: International Agency for Research on Cancer
NTP: National Toxicology Program
OSHA: Occupational Safety and Health Administration (United States)
PEL: Permissible Exposure Limit
PBT: Persistent, Bioaccumulative and Toxic
SARA: Superfund Amendments and Reauthorization Act
SDS: Safety Data Sheet
STEL: Short Term Exposure Limit
TLV: Threshold Limit Value
TSCA: Toxic Substances Control Act
USEPA: United States Environmental Protection Agency

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

Products meeting EUCEB certification requirements can be recognised by the EUCEB logo printed on the packaging.

Further information can be obtained from:

www.euceb.org
www.knaufinsulation.com



Additional information:

Change to Sections: 1, 16
New document format Date: 2016-06-01
Date of previous revisions: 2015-10-26, 2015-08-21, 2015-04-30

Moreover, in 2001, the IARC, reclassified glass mineral wool fibers from Group 2B (possibly carcinogenic) to «not classifiable as to their carcinogenicity to humans (Group 3)». (See Monograph Vol 81, <http://monographs.iarc.fr/>).

The information on this data sheet represents our current data and is reliable provided that the product is used under the prescribed conditions and in accordance with the application specified on the packaging and/or in the technical guidance literature. Any other use of the product which involves using the product in combination with any other product or any other process is the responsibility of the user.
