

MATERIAL SAFETY DATA SHEET (MSDS)

(These data are prepared in accordance with Article 41 of the Industrial Safety and Health Act)

1. Product and company identification

A. Product Name: Glass Wool

B. Recommended use of the chemical and restrictions on use:

Recommended use of the product:

Keep warm. Cooling. Insulation. Fire resistance. Sound absorbing material

Limitations on use of the product: No data

C. Supplier information

1) Manufacturer name: Saint-Gobain ISOVER Korea Co., Ltd.

2) Address: 70, Bukokgongdan1gil, Songak-eup, Dangin-si, Chungnam, Korea

3) TEL: +82-(0)41-351-4117

2. Hazards identification

A. Hazard classification: No data

Warning label items, including precautionary statements

Symbol: No data

Signal word: No data

Hazard·Risk: No data

Precautionary statements

- Prevention: No data
- Response: No data
- Storage: No data
- Disposal: No data

B. Other hazards not covered by the hazard criteria (NFPA)

NFPA INDEX: Health=1, Fire=0, Reactivity=0

3. Composition/Information on ingredients

A. Ingredient 1: Glass Fiber

- CAS No: 65997-17-3
- European Union (EC) No: 266-046-0
- Content(%) : 85~96

B. Ingredient2: Element. Polymer with Phenol

- CAS No: 25104-55-6
- Content(%) : 4~15

C. Product name / synonym: GLASS WOOL, FIBROUS GLASS WOOL, FIBERGLASS

4. First aid measures

A. Eye contact:

- 1) In case of contact with substance, wash eyes immediately with running water for more than 20minutes.
- 2) Immediately take medical measures.

B. Skin contact:

- 1) In case of contact with substance, immediately flush skin with running water for more than 20minutes
- 2) Remove contaminated clothing and shoes.
- 3) Wash clothing and shoes thoroughly before reuse.
- 4) Immediately take medical action.

C. Inhalation:

- 1) Get emergency medical attention.
- 2) Move to fresh air.
- 3) If not breathing, give artificial respiration.
- 4) If breathing is difficult, give oxygen.

D. Ingestion:

- 1) Never give anything by mouth to an unconscious person.
- 2) Immediately take medical measures.

E. Indication of immediate medical attention and notes for physician:

- Ensure that the medical personnel are aware of the substance and take protective measures.

5. Explosion and fire fighting measures

A. Suitable extinguisher

- 1) Small fire: Dry sand, water spray, regular foam, CO2
- 2) Large fire: Water spray, regular foam

B. Specific hazards arising from chemicals

- 1) Some are dehydrated but not easily ignited.
- 2) Inhalation of the substance may be harmful.

C. Special protective equipment and precautions for fire-fighter:

- 1) Some can be transported at high temperatures.
- 2) Contact with skin and eyes may result of burn.
- 3) Move container from fire area if it is not hazardous.

6. Accidental release measures

A. Personal precautions, protective equipment and emergency procedures:

- 1) Do not touch or walk with exposed material.
- 2) If possible, remove ignition sources.
- 3) Avoid dust formation.
- 4) Air pollution areas will be ventilated.
- 5) Stop leak if without risk.
- 6) Note the substances and conditions to avoid.

B. Environmental precautions and protective procedures:

- Prevent entry into waterways, sewers, basements and confined spaces.

C. Methods and materials for containment and cleaning up:

- 1) Make a ditch to drain liquid leaks away when large spills occur.
- 2) In case of powder leakage, cover with plastic sheet to prevent spread and keep dry.
- 3) In case of small spills, flush contaminated area with large amount of water.
- 4) In case of small spills, absorb with sand or other non-combustible material and place in container.
- 5) Keep container tightly closed in a clean, dry container with a clean shovel and transfer container from leak area.

7. Handling and storage

A. Precautions for safe handling:

- 1) Be aware of the material and conditions to avoid.
- 2) Wash thoroughly after handling.
- 3) Refer to engineering controls and personal protective equipment for working.
- 4) Pay attention to high temperature.

B. Conditions for safe storage (including any incompatibilities):

- 1) Keep tightly closed.
- 2) Store in a cool, dry place.
- 3) Be aware of the materials and conditions to avoid.

8. Exposure controls & personal protection

A. Control parameters (e.g. occupation exposure limit values, biological limit values):

- 1) Domestic regulations (KOREA): TWA - 5mg/m³
- 2) ACGIH: Not applicable
- 3) Biological exposure standard: Not applicable

B. Appropriate engineering controls:

- 1) Install cleaning facilities and safety showers for storing or using facilities

C. Personal Protective Equipment:

1) Respiratory protection

- Wear respiratory protection product approved by KOSHA according to physicochemical properties of the particulate matter.
- If the exposure level is lower than 50 mg / m³, wear a respirator of the appropriate type while wearing a respirator.
- If the exposure level is lower than 125 mg / m³, wear non-contact type hood / helmet electric powered respirator or continuous flow dust mask with appropriate filter type.
- If the exposure concentration is lower than 250 mg / m³, wear a face-shielded, electromechanical or air-fed continuous-flow / pressure-demanded, respiratory protection device fitted with an appropriate filter.
- If the exposure concentration is lower than 5,000 mg / m³, wear a face-shield or helmet / hood type with a suitable filter, pressure-demanded ventilation mask
- If the exposure is below 50000 mg / m³, wear self-contained breathing apparatus (SCBA) or self-contained breathing apparatus with pressure-demand self-contained breathing apparatus (SCBA) with appropriate filter

2) Eye protection:

- Use chemical protective clothing and face shield.
- Install shower facilities and emergency shower facilities close to the workshop.'

3) Hands protection:

- Wear suitable chemical resistant gloves.

4) Body protection:

- Wear appropriate chemical resistant clothing.

9. Physical and chemical properties

A. Appearance

- Solid, erratic, unshaped fibers

- Color: From white to gray
- B. Odour: None
- C. Odor threshold: No data
- D. pH: Not applicable
- E. Melting point / freezing point (°C): Not applicable
- F. Initial boiling point and boiling range: Not applicable
- G. Flash point: None
- H. Evaporation rate: None
- I. Flammability: Solid
- J. Upper / lower flammability or explosive limits: -/- %
- K. Vapor pressure: None
- L. Solubility: None
- M. Vapor density: None
- N. Relative density: 2.54 (water=1)
- O. N- Octanol / water partition coefficient: None
- P. Auto ignition temperature: No data
- Q. Decomposition temperature: No data
- R. Viscosity: No data
- S. Molecular mass: No data

10. Stability and reactivity

- A. Chemical stability and possibility of hazardous reactions:
 - 1) Inhalation of matter may be harmful.
 - 2) Stable at normal temperature and pressure.
 - 3) Some fluids may cause dizziness, vapors that may cause suffocation.
 - 4) Some can ride, but not easily ignite.
 - 5) May cause irritation and toxic gas in case of fire.
- B. Incompatible materials:
 - 1) Combustible material
 - 2) Reductive substance
- C. Hazardous Substances Created by Disassembly
 - During burning, pyrolysis or combustion may produce irritating and highly toxic gases.

11. Toxicological information

- A. Information on the likely routes of exposure:
- Irritation, dyspnea, nausea, vomiting, diarrhea
- B. Health Hazard Information
- 1) Acute toxicity (oral, dermal, inhalation): Not available.
 - 2) Skin corrosive or irritant: Redness, Itching
 - 3) Severe eye damage or irritation: Redness, Pain, Itching
 - 4) Respiratory sensitization: Not available.
 - 5) Skin sensitization: Not available.
 - 6) Carcinogenesis
 - Industrial Safety and Health Act, Ministry of Labor Notice, OSHA, EU CLP: No Data
 - IARC: 2B
 - ACGIH: A3
 - 7) Germ cell mutagenicity: No Data
 - 8) Reproductive toxicity: No Data
 - 9) Specific target organ toxicity (single exposure, repeated exposure): No Data
 - 10) Aspiration hazard: No Data.

12. Ecological information

- A. Aquatic and terrestrial ecotoxicity: No Data.
- B. Persistence and degradability: No Data.
- C. Bioaccumulative potential: No Data.
- D. Mobility in soil: No Data.
- E. Other adverse effects: No Data.

13. Disposal considerations

- A. Disposal method: Dispose of contents / container in accordance with local / regional / national / international regulations
- B. Disposal precaution: If it is specified in the Waste Management Act, consider the precautions specified in the regulations.

14. Information for transportation

- A. UN No.: UN Transport Hazardous classification No information available.
- B. UN proper shipping name : Not applicable

- C. Transport hazard class: Not applicable
- D. packing group: Not applicable
- E. Marine pollution: No data
- F. Special precaution which a user to be aware of or needs to comply with in connection with transport or conveyance either within or outside their premises:
 - 1) Emergency measures in case of fire: Not applicable
 - 2) Emergency Action in case of leak: Not applicable

15. Regulatory information

- A. Industrial Safety and Health Act:
 - Work environment measured material (Measurement period: 6 months)
 - Special medical examination subject substance (diagnosis period: 12 months)
 - Exposure standard setting substance
- B. Toxic Chemical Control Act: No data
- C. Dangerous Material Safety Control Act: No data
- D. Wastes Management Act: Designated waste
- E. Other requirements in domestic and other countries:
 - 1) Domestic regulation (KOREA)
 - Persistent Organic Pollutants Control Act: Not applicable
 - 2) Foreign regulation
 - US Administration Information (OSHA.CERCLA.EPCRA Regulations, Rotterdam, Stockholm, Montreal Convention substance): Not applicable.
 - EU Classification information (confirmed classification result, risk phrases, safety phrases):
Not applicable.

16. Other information

- A. This MSDS was written by Saint-Gobain ISOVER Korea Co., Ltd. with reference to the MSDS provided by the Korea Occupational Safety and Health Agency.
- B. Issuing date: 1998.04
- C. Revision number and date: 12 times / 2019.04
- D. others: