Safety Data Sheet

Glass Wool

Creation Date: July 11, 2000

Revised Date: May 20, 2022

1. Product and Company Identification

Product Name:	Glass Wool
Company Name:	MAG-ISOVER K.K.
Address:	7, 3-Chome, Kojimachi, Chiyoda-ku, Tokyo, JAPAN
Tel. No.:	Call Center (81)3-288-6308
Emergency Tel. No.:	Quality Department (81)29-831-1011
Recommended Use:	(1) Thermal insulation materials: For thermal insulation of boiler, tank, duct for air conditioning, various pipes and so on. For core material of panel. Products are installed in the wall and attic for thermal insulation, sound absorption and soundproof of building. (2) Thermal insulation materials for dwellings (3) Sound absorbing materials (4) Decorative sound absorption boards: Interior decoration of the building. (5) For thermal insulation of industrial equipment
Limitations on Use:	Cement reinforcing material

2. Hazardous Identification

GHS Classification

Physical Hazards:	Explosives	Not classified
	Flammable gases	Not classified
	Aerosols	Not classified
	Oxidizing gases	Not classified
	Gases under pressure	Not classified
	Flammable liquids	Not classified
	Flammable solids	Not classified [Non-combustible (ICSC 2012]
	Self-reactive substances and mixture	Not classified
	Pyrophoric liquids	Not classified
	Pyrophoric solids	Not classified [Non-combustible (ICSC 2012)]
	Self-heating substances and mixture	Not classified [Non-combustible (ICSC 2012)
	Substances which, in contact with water, emit flammable gases	Not classified
	Oxidizing liquids	Not classified
	Oxidizing solids	Not classified (No reaction observed)
	Organic peroxides	Not classified
	Corrosive to metals	Classification not possible
Human Health Hazards:	Acute toxicity (oral route)	Classification not possible
	Acute toxicity (skin route)	Classification not possible

	Acute toxicity (inhalation, gas)	Not classified
	Acute toxicity (inhalation, vapor)	Classification not possible
	Acute toxicity (inhalation, dust)	Classification not possible
	Acute toxicity (inhalation, mist)	Not classified
	Skin inflammation / irritation	Not classified (Ex: temporary irritation)
	Serious eye damage / eye irritation	Not classified
	Respiratory sensitization	Classification not possible
	Skin sensitization	Not classified (JHSA 2011)
	Germ cell mutagenicity	Classification not possible
	Carcinogenicity	Not classified (IARC 2002, Group 3)
	Reproductive toxicity	Classification not possible
	Specific target organ toxicity (single exposure)	Not classified
	Specific target organ toxicity (repeated exposure)	Not classified
	Aspiration hazard	Classification not possible
Environmental Hazards:	Hazardous to the aquatic environment	Classification not possible
	Hazardous to the ozone layer	Classification not possible

GHS Label Element

Pictogram or Symbol:	None
Signal Word:	None
Hazard Statement:	None
Precautionary Statement:	None

3. Composition / Information on Ingredients

Chemical Product or Compound

Common Chemical Name or Generic Name:	Glass wool fibers	
Synonyms:	MMMF (Man-made mineral fibers)	
	MMVF (Man-made vitreous fibers)	
	SVFs (Synthetic vitreous fibers)	
Composition and content:	Fibrous glass	90% or more
	Thermosetting resin binder	10% or less
	Mineral oil	Less than 1%
CAS Number:	Fibrous glass (wool)	No.: 65997-17-3

4. First-aid Measures

Inhalation:	If feeling sick, take medical treatment and seek the advice of a doctor.
Skin Contact:	If the product adheres to the skin, wash the affected area with soapy water, then wash off with clean water or slightly warm water. If the skin area feels sore or if there is some abnormality, seek medical attention immediately.
Eye Contact:	If dust comes in contact with the eyes, do not rub eyes. Rinse with clean water until you no longer feel that you have something in your eye. If the feeling persists, seek the advice of an eye doctor.

Ingestion:	Rinse mouth out with water. If feeling sick, take medical treatment and seek the advice of a doctor.
Most critical signs of Acute Symptoms and Delayed Symptoms:	Skin/eye: reddening, irritation, and/or pain. Respiratory passage: discomfort.
Protection to those taking the first-aid measures:	No data available
Special cautions to doctors:	No data available

5. Fire-fighting Measures

Extinguishing Media:	Use appropriate extinguishing media depending on the kind of neighboring fires.
Extinguishing Media that are Not Suitable:	None
Specific Hazard with regard to fire-fighting:	Release of dust.
Extinguishing technique peculiar to the material:	Remove the material from the fire area if it is not dangerous to do so.
Special protection and precautions for fire fighting:	Heat-resistant protective equipment should be used as stated in "8. Exposure Control/Personal Protection".

6. Accidental Release Measures

Personal Precautions, Protective Equipment and Emergency Measures:	Wear appropriate protective equipment (refer to "8. Exposure Control/Personal Protection") to avoid skin/eye contact with the product and do not inhale dust.
Environmental Precautions:	Dust shall not be scattered into the surrounding environment.
Method and Materials for Containing and Cleaning:	If the product is spilled on the floor, clean it up using an industrial vacuum cleaner without scatting dust. Enclose the product in an empty container or bag and seal the container or bag. Refer to "13. Disposal consideration" for disposal.
Preventive measures against secondary accident:	Same as above

7. Handling and Storage

Handling

Technical Measures:	Ventilate for exhaust to keep atmospheric concentrations lower than exposure limits.
Safe Handling Advice:	Wear appropriate protective equipment (refer to "8. Exposure Control/Personal Protection") to avoid skin/eye contact with the product and do not inhale or swallow dust.
Avoidance of Contact:	In addition to taking technical measures, preferentially use packed products, products with covering material, high-performance products, etc.
Hygiene Measures:	Do not eat, drink or smoke while working. After handling the material, be sure to wash hands and other body parts which were exposed to the material..

Storage

Storage Condition: Place product in a bag to avoid dust release. For quality reason, product must not contact with water. Also product shall be stored inside to avoid high humidity and direct sunlight.

Packaging Materials: There is no restriction, but put the product should be put in a packaging and container which are hard to be damaged.

8. Exposure Control/Personal Protection

Adapted value

Exposure Limits: Working Environment Evaluation Standards, Exposure Limits in Appended Table (effective as of July 1, 2009):

Glass wool products are considered as minerals, and for work places falling under the regulations relating to dust, the respirable dust exposure limit shall be 3.0mg/m^3 since the free silica shall be 0%.

- $E = 3.0 / (1.19\ Q + 1)$

(E: Exposure limit, Q:Percentage of free silica contained in the dust[%])

Japan Society for Occupational Health "Journal of Occupational Health" Volume 63 (2021):

Glass wool: 1 (fiber) / ml

(Note 1) Dust permissible concentration: ● Respirable dust 2 mg/m^3
● Total dust 8 mg/m^3

(Note 2) Although the permissible concentration is regulated as the number of fibers, this mainly indicates the value for skin irritation. Dust is classified into Types 1, 2, 3 and asbestos dust, and the permissible concentrations are regulated for each class. Glass fiber dust is considered as Type 3 inorganic dust which has the highest permissible concentrations.

ACGIH: American Conference of Governmental Industrial Hygienists (ACGIH) (2010), Threshold Limit Values (TLV)

TLV-TWA : 1 f / cc (glass wool)

(Note 1) Fibers with a length of 5 μm or more and an aspect ratio (length / diameter) of 3 or more

(Note 2) TLV (Threshold Limit Value) - TWA (Time Weighted Average) is the time-weighted average permissible concentration, which is defined as the time-weighted average permissible concentration during a working time of 8 hours a day, 40 hours a week. Known as the airborne concentration (8 hour average value), this is the concentration at which the majority of workers, even if repeatedly exposed to this concentration every day, will not develop any adverse health effects.

Engineering Measures: If dust is scattered during handling, install ventilating equipment to keep dust level lower than the permissible concentration.

Personal Protective Equipment

Respiratory Protection: If the concentration of dust in the working environment can be expected to exceed the limits given above, wear a dust mask. It is recommended that for situations with high concentrations of dust, a replaceable type dust mask should be used, while a disposable dust mask should be used when the concentrations are relatively low.

Hand Protection: Wear appropriate protective gloves.

Eye Protection: If necessary, protective equipment appropriate for the work should be utilized, such as goggles or protective glasses with side shields.

Skin and Body Protection: Protective equipment appropriate for the work should be used, such as loose-fitting long-sleeved work clothing.

9. Physical and Chemical Properties

Form:	Fibrous solid (ICSC 2012)
Color, etc.:	White or colored
Odor:	Classification is not possible. Some odor may be senses in some cases where bad conditions, such as wet environment and insufficient ventilation, are combined; however, it has been reported that such odor could be suppressed after drying and ventilation.
Melting Point and Freezing Point:	No data available
Boiling Point, Initial Boiling Point and Boiling Range:	No data available
Flammability:	No data available
Lower explosive limit and upper explosive limit / Combustible limit:	No data available
Flash Point:	Non-combustible (ICSC 2012)
Auto-ignition temperature :	Non-combustible (ICSC 2012)
Decomposition Temperature:	No data available
pH:	No data available
Kinetic viscosity:	Not applicable
Solubility:	Water: insoluble (HSDB 2012)
n-octanol / Water Partition Coefficient:	Low (HSDB 2012)
Vapor Pressure:	Low (ICSC 2012)
Density and / or relative density:	2.4-3.0 g/cm3 (true specific gravity) (HSDB 2012)
Relative gas density:	Not applicable
Particle characteristics:	No data available

10. Stability and Reactivity

Reactivity:	No data available
Stability:	Products are stable under the normal condition.
Hazardous Reaction Potential:	No data available
Condition to Avoid:	No data available
Incompatible Products:	No data available
Hazardous Decomposition Products:	No data available

11. Toxicological Information

Acute toxicity

Oral route:	No data available	
Skin route:	No data available	
Inhalation:	Inhalation (gas)	Solid in room temperature
	Inhalation (vapor)	No data available
	Inhalation (dust)	No data available

Skin Corrosion Property/ irritation: Not classified

As a result of the 24-hour patch test on 43 subjects (adult males and females), using a glass wool sample, performed by Japan Hair Science Association (JHSA), it was found that none of the subjects had any reaction to the sample within the 24 hours following its removal.

[Reference information from foreign literatures]: (MHLW)

- Due to occupational exposure, workers may suffer from skin irritation in response to physical stimulus; however, the impact on the skin is temporary and can be controlled under proper work practices (ACGIH 2001).
- The physical irritation is mostly caused when tested fibers have a diameter of 4.5-5 μm or larger. However, the irritation often goes away while continuously being exposed [EHC77 (1988)].
- According to the analysis by the Finnish Institute of Occupational Health on the occupational disease registry data, contact dermatitis due to skin irritation is caused in a rate of only several (1 to 9 persons) per 100,000 workers. Accordingly, the irritation is not regarded as a common cause of contact dermatitis as a result of occupational exposure (HSDB 2005).

Serious eye damage/ eye irritations: Not classified

Some cases of transient eye irritation have been individually reported by workers, especially those who were not sufficiently protected from exposure. However, the damage is neither serious not chronic (ACGIH 2001, ATSDR 2004), and it was attributable to a foreign object that got in the eye but not caused particularly by the glass fiber dust (No incident reported). Therefore, "Not classified" is noted in this section.

Respiratory Organs Sensitization and Skin Sensitization: No data available

In human studies, it is reported that inhalation of glass fibers may produce a temporary mechanical irritation of the nose and upper respiratory tract but this irritation was noted when airborne concentrations exceeded 1 f/cc (ACGIH 2001).

Skin Sensitization: Not classified (JHSA 2011)

Germ Cell Mutagenicity: Classification not possible

Carcinogenicity: Not classified (Classified to Group 3 in IARC 2002)

Reproductive Toxicity: No data available

Specific target organ toxicity (single exposure): Not classified

No cases of physical damage have been reported. It is assumed that further damage can also be prevented by paying attention to the cautions in "7. Handling and Storage" and "8. Exposure Control/Personal Protection".

Specific target organ toxicity (repeated exposure): Not classified (according to the same reason described above)

Aspiration Respiratory Organs Hazard: No data available

12. Ecological Information

Ecotoxicity:	No data available
Persistence and degradability:	No data available
Bioaccumulative potential:	No data available
Mobility in soil:	No data available
Ozone Depleting Potential:	No data available

13. Disposal Consideration

Information on safe and environmentally desirable disposal and recycling of chemicals, contaminated containers and packaging:	When disposing of the residual waste, dispose of in accordance with the law and local regulations. When the industrial waste management contractors with the permission of the Metropolitan / Prefectural governors or the local government handle the waste, entrust them with the disposal.
Contaminated Containers or Packaging:	Appropriately recycle, or dispose of the packaging according to the law concerned and the standard of the local government.

14. Transport Information

UN Number:	Not applicable
Proper Shipping Name (International transport name):	Not applicable
UN Classification:	Not regulated as dangerous goods by definition of UN Recommendation
Packing Group:	Not applicable
Special Safety Measures regarding transportation and transportation method:	When transporting the products, avoid direct contact with sunlight. When loading the products, be careful not to damage, to corrode and/ or to leak the container. Collapse shall be avoided and preventing action shall be taken. Do not put heavy goods on the product.
Information on domestic regulations:	Not applicable

15. Regulatory Information

Name and Information of applicable regulations

Pneumoconiosis Law: Ordinance on Prevention of Hazards due to Dust (Dust Ordinance):

Glass wool is considered as a mineral under the Pneumoconiosis Law and under the Ordinance on Prevention of Hazards due to Dust (Dust Ordinance). When conducting the following work, the Pneumoconiosis Law and Dust Ordinance will apply.

(1) Work carried out in places where the mineral (this product) is being cut, chiseled or finished. (Dust Ordinance; Item 6 of

Attached Table 1)
(2) Work carried out in places where motive power is being used for cutting, crushing or screening the mineral (this product). (Dust Ordinance; Item 8 of Attached Table 1)

Industrial Safety and Health Act:

Notified substance:
-Glass wool is an applicable substance under Article 57-2 "Issuing of Documentation" and Article 57-3 "Investigation of Toxicity of Chemical Substances" of the Occupational Safety and Health Act. In accordance with the requirement of Article 57-3, an investigation of toxicity shall be undertaken in advance at each business location as follows;
(1) When newly using the material,
(2) When employing a new handling instruction or method,
(3) When there is a change in handling instructions or methods.
-Mineral oil

Pollutant Release and Transfer Register :

Glass wool is not a substance applicable under the PRTR (Pollutant Release and Transfer Register) Regulations.

16. Other Information

Reference Documents:

The reference data used in this sheet are as listed below.

1) ICSC: International Chemical Safety Card
2) ACGIH: American Conference of Governmental Industrial Hygienists
3) ATSDR: Agency for Toxic Substances and Disease Registry
4) EHC77: WHO International Programme on Chemical Safety, Environmental Health Criteria 77
5) IARC: International Agency for Research on Cancer
6) JSOH: [Japan Society for Occupational Health
7) HSDB: Hazardous Substances Data Bank of US National Library of Medicine
8) JHSA: [Japan Hair Science Association]

This information will be revised based on new knowledge.
Out of the included content, the information relating to the included amounts and physical and chemical properties are not certified values. The hazard and toxicological evaluations were produced based on the documentation and data available at the current point of time, and do not cover all materials. Description in the sections to which sufficient knowledge and findings have not been obtained in Japan is made to be consistent to the evaluations by US & European industries.