

Material Safety Data Sheet

1. Company and products identifications

MANUFACTURER:

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PRODUCT IDENTIFICATION:

"Continuous filaments glass fibres for plastic reinforcement"

PRODUCTS NAME: Glass fiber Chopped Strand Mat, Glassfiber Woven Roving, Glassfiber Roving

Contact in emergency: +66-038-027400

2 - Composition / Information on Ingredients

As manufactured continuous filament glass fibers are not respirable. Continuous filament glass products that are chopped, crushed or severely mechanically processed during manufacturing or use may contain a very small amount of respirable particulate, some of which may be glass shards.

E GLASS is a glass with a very low alkaline content. Its composition (expressed in oxides) is within the following percentages:

SiO₂ 52-62%

Alkaline Oxides (Na₂O, K₂O) <0.8%

Alkaline terrous oxides (CaO, MgO....) 16-30%

B₂O₃ 0-10%

Al₂O₃ 11-16%

Fe₂O₃ 0<0.5%

SIZE is a mixture of chemicals applied to the glass strands in a maximum quantity of 2.5% - more generally less than 1.5%.Most of this mixture is made up of basically non reactive high molecular weight polymers notlisted as substances in the 1981 European Inventory of Existing Commercial Substances(EINECS) nor in the ELINCS appendices (European List of Notified Chemical Substances)and are generally exempt from registration on the American TSCA lists.

In some cases, sizes are prepared from polymers with reactive sites or containing reactive monomers included in these lists. Most of the reactive sites are polymerised during the manufacturing process. However a very small reactivity may remain which justifies the

precautionary measures listed in Chapter 8 below.

A second type of ingredient present in almost all sizes is a member of the organo-silane family. These products account for less than 0.05% of the final weight of sized E glass. These products are included in lists of products requiring 'hazardous product' labelling in a pure state for example in Europe R23/25 toxic if swallowed or inhaled, R21 'harmful in contact with the skin', R36 'irritant for the eyes'. The manufacturer considers this risk as negligible as, although listed as dangerous products, the concentration is extremely low and they are polymerised during the production of E glass fibres.

Other products can be used in sizes. Usually the content is extremely low (under 0.1% of total weight) and as a general rule such products are not on the dangerous product lists or, as they have reacted, any possible risk has been reduced.

3.HAZARDS IDENTIFICATION

Appearance and Odor

White/off-white colored Solid with no odor

Primary Route(s) of Exposure: Inhalation, lungs, skin and eye

Potential Acute Health Effects

Inhalation:

Dusts and fibers from this product may cause mechanical irritation of the nose, throat and respiratory tract.

Skin Contact:

Dusts and fibers from this product may cause temporary mechanical irritation to the skin.

Eye Contact:

Dusts and fibers from this product may cause temporary mechanical irritation to the eyes.

Ingestion:

Ingestion of this product is unlikely. However, ingestion of product may produce gastrointestinal irritation and disturbances.

Medical Conditions Aggravated by Exposure:

Chronic respiratory or skin conditions may temporarily worsen from exposure to this product.

Chronic Conditions:

See Section 11 for additional information.

4.FIRST AIDE MEASURES

Inhalation:

If inhaled, move the affected person to fresh air. If irritation persists get medical attention.

Skin Contact:

For skin contact, wash with mild soap and cold water. Do not wash with warm water because this will open up the pores of the skin, which will cause further penetration of the fibers. Use a washcloth to help remove fibers.

To avoid further irritation, do not rub or scratch affected areas. Rubbing or scratching may force fibers into the skin. If irritation persists get medical attention.

Never use compressed air to remove fibers from the skin. If fibers are seen penetrating from the skin, the fibers can be removed by applying and removing adhesive tape so that the fibers adhere to the tape and are pulled out of the skin.

Eye Contact:

Immediately flush eyes with plenty of running water for at least 15 minutes. If irritation persists get medical attention.

Ingestion:

Ingestion of this material is unlikely. If it does occur, watch the person for several days to make sure that partial or complete intestinal obstruction does not occur. Do not induce vomiting unless directed to do so by medical personnel. Seek medical attention if irritation persists.

5. FIRE FIGHTING MEASURES

Flash Point: None

Flash Point Method: Not determined

Upper Flammability Limit: None

Lower Flammability Limit: None

Flammability Classification: Non-flammable

Extinguishing Media:

Dry chemical, foam, carbon dioxide, and water fog.

Unusual Fire & Explosion Hazards:

None known.

Fire-Fighting Instructions:

Use self-contained breathing apparatus (SCBA) and full bunker turnout gear in a sustained fire.

Hazardous Combustion Products:

Primary combustion products are carbon monoxide, hydrogen, carbon dioxide and water. Other undetermined compounds could be released in small quantities.

6. ACCIDENTAL RELEASE MEASURES

Containment Procedures:

This material will settle out of air. If concentrated on land, it can then be scooped up for disposal as nonhazardous waste. This material will sink and disperse along the bottom of waterways and ponds. It cannot easily be removed after it is waterborne; however, the material is non-hazardous in water.



Clean-Up Procedures:

Scoop up material and put into a suitable container for disposal as a non-hazardous waste.

Response Procedures:

Isolate area. Keep unnecessary personnel away.

Special Procedures:

None.

7.HANDLING AND SORAGE

Keep product in its packaging, as long as practicable to minimize potential dust generation. Keep work areas clean. Avoid unnecessary handling of scrap materials. Wear PPE as described in Section 8.

Storage Procedures:

No special procedures.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

A: General Product Information

Follow all applicable exposure limits.

B: Exposure Limits

Fiber Glass Continuous Filament (65997-17-3)

Ingredient	OSHA PEL (8-hr TWA)	ACGIH TLV (8-hr TWA)
Non-respirable fibers and particulate	15 mg/m ³ (total dust) (a)	5 mg/m ³ (inhalable fraction)
Respirable particulate	5 mg/m ³ (respirable dust) (b)	None
Respirable particulate with fiber like dimensions (glass shards)	None Established	None Established

Ventilation:

General dilution ventilation and/or local exhaust ventilation should be provided as necessary to maintain exposures below regulatory limits.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection:

A properly fitted NIOSH approved N 95 series disposable dust respirator such as the 3M model 8210 (model 8271 in high humidity environments or equivalent should be used when high dust levels are encountered, the level of glass fibers in the air exceeds the occupational exposure limits, or if irritation occurs.

Skin Protection:

Normal work clothing (long sleeved shirts and long pants) is recommended. Use gloves. Skin irritation is known to occur chiefly at the pressure points such as around the neck, wrists, waist and between the fingers.

Eyes/Face Protective Equipment:

Wear safety glasses, goggles or face shield.

9. PHYSICAL & CHEMICAL PROPERTIES

PHYSICAL STATE: solid

FORM: continuous or chopped or mats of fibre made up of continuous, parallel filaments glued together.

COLOUR: white or yellowish white

ODOUR: none, except for some products from which a slightly basic or acid odour is sometimes released when a pallet or carton is opened. This odour never indicates that an eventual toxic product has been released in a dangerous amount.

PH: not applicable

SPECIFIC TEMPERATURE AT WHICH CHANGES IN PHYSICAL STATE OCCUR:

Softening point: Littleton point (defined as the temperature for which the viscosity of glass is 107.65 Poises): approximately 850°C

Melting point: Not applicable. Glass does not melt, but the viscosity decreases by elevation of temperature and is 10³ for E glass in a range of temperature between 1150°C and 1250°C

(fiberizing temperature).

DECOMPOSITION TEMPERATURE: Sizes and mat binders start to decompose at 200°C

FLASH POINT: none

EXPLOSIVE PROPERTIES: none

DENSITY (molten glass): 2.6 g / cu. cm.

SOLUBILITY: very low solubility in water. Sizes and binders can be partially (and even totally) dissolved in most organic solvents

10.CHEMICALSTABILITY AND REACTIVITY INFORMATION

Stability:

This is a stable material.

Conditions to Avoid:

None known.

Incompatible Materials:

None known.

Hazardous Decomposition Products:

Sizing or binders may decompose in a fire. See Section 5 of MSDS for information on hazardous combustion products.

Hazardous Polymerization:

Will not occur.

11.TOXICAL INFORMATION

Acute Effects:

General Product Information

Dusts may cause mechanical irritation to eyes and skin. Ingestion may cause transient irritation of throat, stomach and gastrointestinal tract. Inhalation may cause coughing, nose and throat irritation, and sneezing. People with pre-existing respiratory conditions, may experience difficulty breathing, congestion and chest tightnes.

Carcinogenicity:

Fiber Glass Continuous Filament: The International Agency for Research on Cancer (IARC) in June, 1987, categorized fiber glass continuous filament as not classifiable with respect to human carcinogenicity (Group 3). The evidence from human as well as animal studies was evaluated by IARC as insufficient to classify fiber glass continuous filament as a possible, probable, or confirmed cancer causing material.

The American Conference of Governmental Industrial Hygienists (ACGIH) A4 classification, not classifiable as a human carcinogen, for respirable continuous filament glass fibers is based on inadequate data in terms of its carcinogenicity in humans and/or animals.

For respirable continuous filament glass fibers, a TLV-TWA of 1 fiber/cc was adopted to protect workers

Against mechanical irritation. The TLV-TWA of 5 mg/m³ was adopted for nonrespirable glass filament fiber, measured as inhalable dust, to prevent mechanical irritation of the upper respiratory tract.

Note: There are no known chronic health effects connected with long term use or contact with these products.

Products that are chopped, crushed or severely mechanically processed during manufacture or use may contain a very small amount of respirable glass fiber-like fragments. NIOSH defines “respirable fibers “ as greater than 5 microns in length and less than 3 microns in diameter with an aspect ratio of $\geq 5:1$ (length-to-width ratio).

Chronic Study in Animals

A laboratory test was conducted with a different product (special application glass fiber) with comparable composition and durability. Test animals breathing very high concentrations of respirable fibers on a long-term basis developed fibrosis, lung cancer and mesothelioma.

About 23% of the rats (n=43) exposed to 1022 f/cc for 5 hrs/day, 7 days/week for 52 weeks developed lung tumors(adenoma and carcinoma). Five percent (5%) of the unexposed control group (n=38) developed lung tumors (adenoma and carcinoma).

Five percent (5%) of the rats in the exposed group developed mesothelioma and 12.5% developed advanced fibrosis. None of the rats in the unexposed control group developed mesothelioma and 0.6 % developed advanced fibrosis.

A second group of rats was exposed to a similar concentration of asbestos (respirable amosite fibers) for 5 hours/day, 7 days a week for 52 weeks. 38% of the rats developed lung tumors (adenoma and carcinoma) and 5 % developed mesothelioma. 14.5 % developed advanced fibrosis.

Importantly, this result, that is similar disease rates for the special application fiber and amosite asbestos, had been predicted in a 1996 scientific paper (Inhal. Tox. 8:323-343, 1996 ref). That paper specifically stated that in rats all fibers which were durable enough to remain in a rat lung for two (2) years or more would produce the same disease rates if the exposures were the same. While the special application fiber is much less durable than asbestos, it is stable enough to remain in the rat lung for more than the two (2) year time period. The results of the current study are therefore not unexpected, and they do not indicate that similar disease rates would be seen in longer lived species or humans, exposed to these fibers.

B: Component Carcinogenicity

Fiber Glass (Continuous Filament) (65997-17-3)

ACGIH: A4 – Not classifiable as a human carcinogen.

IARC: Group 3 “not classifiable as to its carcinogenicity to humans”

June 1987 meeting

12. ECOLOGICAL INFORMATION

No data available for this product. This product is not anticipated to harm animals, plants or fish.

13. DISPOSAL CONSIDERATIONS

US EPA Waste Number & Descriptions:

A: General Product Information

Material, if discarded, is not expected to be a characteristic hazardous waste under RCRA.

B: Component Waste Numbers

No EPA Waste Numbers are applicable for this product's components.

Disposal Instructions:

Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.

14. TRANSFORMATION INFORMATION

US DOT Information

Shipping Name: Not regulated for transport.

Hazard Class: None

UN/NA #: None

Packing Group: None

Required Label(s): None

TDG Information

Shipping Name: Not regulated for transport.

Hazard Class: None

UN/NA #: None

Packing Group: None

Required Label(s): None

Additional Info.: None

Additional Transportation Regulations:

No additional information available.

15. REGULATORY INFORMATION

Continuous filaments glass reinforcements do not require hazardous product labelling (see Chapter 11).

General hygiene and work safety regulations apply (see Chapter 8).

Continuous filament s glass reinforcement for plastics are articles and for this reason they have not to be listed in most of the countries, for instance in the list EINECS in Europe, ELINCS, TSCA for the USA, DSL and NDSL for Canada

16.OTHER INFORMATION

HMIS and NFPA Hazard Ratings	Category	HMIS	NFPA
	Acute Health	1	1
	Flammability	0	0
	Reactivit	0	0

NFPA Unusual Hazards: None

HMIS Personal Protection: To be supplied by user depending upon use.

Reasonable care has been taken in the preparation of this information, but the manufacturer makes no warranty of merchantability or any other warranty, expressed or implied, with respect to this information. The manufacturer makes no representations and assumes no liability for any direct, incidental or consequential damages resulting from its use.

Revision Summary:

This is a revised MSDS, which replaces 15-MSD-14672-01-I with updated product names and contact information. Read this information carefully.