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MATERIAL SAFETY DATA SHEET

Section 1 — Product & Supplier Information

Product Name: Glass Fibers- Continuous glass fiber products

Other Names: Direct roving, dry chopped strands, assembled roving, effect texturized roving, needle mats, moulded parts, woven parts, and knitted parts

Company: Shesto Ltd

Address: 3 Century Court, Toplits Lane, Watford, WD18 9RS

Telephone 0208 451 6188

Use: Acoustical and thermal, plastics reinforcement

Section 2 — Hazards Identification

With regard to its composition, this product is not classified as hazardous according to European Directive 67/548/EEC and 99/45/EC and their latest amendments.

This section identifies the potential hazards related to the article i.e. its shape, its dimensions and other physical characteristics.

- Mechanical irritation (itching)
- Exposure to airborne dust and fibers

Section 3 — Ingredient Composition/Information

Continuous filament glass fiber (CFGF) products are articles in the meaning of REACH (1907/2006/ER) CFGF products are made of glass which is given a specific shape (filament) and dimension (filament) diameter. A surface treatment (sizing) is applied to the filaments which are gathered to form a strand.

The strand is further processed into a specific product designed according to the downstream use of the article. The sizing is a mixture of chemicals, i.e. coupling agent, film former and polymeric resin/emulsion. The sizing content is usually below 1% and in some specific product design according to the downstream use of the article.

The sizing content is usually below 1% and in some specific case up to 2.5%. The sizing mixture basically consist of high molecular weight polymers and not listed as dangerous substances (EINECS) nor in subsequent additions to the European list of New commercial Chemical Substances (ELINCS). For moulded products, based on CFGF a binder is applied in a secondary step to form the pre-form. The binder (polymeric resin) content is usually 3% of the product weight.

Section 4 First Aid Measures

Eye: Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Have eye rinsing bottle available in case of potential hazard of eye contact, seek medical advice, if necessary

Skin: Wash off immediately with soap and cold water- if there is an irritation

- DO NOT use warm water because this will open up the pores of the skin, which will cause further penetration of the fibers.
- Do NOT rub or scratch affected areas.
- Remove contaminated clothing
- If skin irritation persists, call a physician

Inhalation: In case of upper respiratory tract irritation

- Move to fresh air
- If symptoms persist, call a physician

Section 5 Fire Fighting Measures

CFGF products are not flammable, are incombustible and do not support combustion. Only the sizing and or/binder are combustible and could release small quantities of hazardous gas in case of major prolonged heat or fire

Suitable Extinguishing Media – Water dry chemical, foam and carbon dioxide (CO2)

Protective Equipment and Precautions for Fire-fighters- Wear self-contained breathing apparatus (SCBA) and full firefighting protective gear

Section 6 Accidental Release Measures

Personal Precautions: Avoid contact with the skin and the eyes
Environmental precautions: Prevent further leakage or spillage if safe to do so

Methods for clean-up:

- Pick up and transfer to properly labelled containers
- Avoid dry sweeping
- Shovel the major part of spilled material into a container
- Use an industrial vaccum cleaner with a high efficiency filter to clean up dust and residual spilled material
- After vacumm cleaning, flush away with water

Section 7 Handling & Storage

Handling: Wear appropriate personal protective equipment in case of direct contact with the product

- Prevent and/or minimize dust formation

Storage: Store the product in a dry area in its packaging until use to minimize potential dust generation. The temperature should not exceed 30 °C, the relative air humidity should be between 50 and 75%

Section 8 Exposure Control/Personal Protection

General info: Continuous filament glass fibers are not respirable however certain mechanical processes might generate airborne dust or fiber (see section 11). The occupational exposure limits below mentioned are applicable to airborne fiber exposure and/or to dust exposure

Exposure standards: Note: The user of CFGF products has to comply with the national regulation in term of health worker protection. You will find below some occupational exposure limit values for some of European countries

	Respirable Dust	Total Dust	Respirable Fiber
ACGIH	3 mg/m ^{3}	10 mg/ m ^{3}	1 fiber/ml
AUSTRIA	6mg/m3 (fine)		0.5 fiber/ml
DENMARK	5 mg/m^3	10 mg/ m ^{3}	1 fiber/ml
FINLAND		10 mg/ m ^{3}	1 fiber/ml
FRANCE		10 mg/ m ^{3}	1 fiber/ml
GERMANY	3 mg/m^3	4 mg/ m ^{3}	0.25 fiber/ml
IRELAND	5 mg/m^3		2 fiber/ml
ITALY	3 mg/m^3	10 mg/ m ^{3}	1 fiber/ml
NETHERLANDS	2 mg/m^3	10 mg/ m ^{3}	1 fiber/ml
NORWAY	5mg/m^3	10 mg/ m ^{3}	1 fiber/ml
PORTGUAL		4 mg/ m ^{3}	1 fiber/ml
SPAIN	3 mg/m^3	10 mg/ m ^{3}	1 fiber/ml
UNITED KINGDOM	5 mg/m^3	10 mg/ m ^{3}	2 fiber/ml

Personal Protective Equipment: Respiratory protection: Respiratory protection: during occasional operations releasing high quantities of dust, wear minimum FP1 or preferably FB2 EEC approved dust masks. According to American national institute for occupational safety and health (NIOSH) and Mine Safety and Health Administration (MSHA) directives, type 3M 8710 or 3M 9900 respiratory protection can for example be used

Engineering controls:
(Such as ventilation, enclosed process)

Provide local exhaust and/or general ventilation system to maintain low exposure levels. Dust collection systems must be in transferring operations, cutting or machining or other dust generating processes. Vacuum or wet clean-up methods should be used

Eye/face Protection:
Safety glasses with side-shields

Skin Protection

- Protective gloves
- Long sleeved shirt and long pants

General Hygiene Considerations

- Wash hands before breaks and immediately after handling the product
- Avoid contact with skin, eyes and clothing
- Avoid getting dust into boots and gloves through wrist bands and pant tucks
- Remove and wash contaminated clothing before re-use

Section 9	Physical & Chemical Properties

Appearance: White or off- white

Softening Point: >800°C

Melting Point: Non applicable

Solubility in Water: Insoluble

Hazardous Decomposition: Size and mat binders start to decompose at 200°C

Density (molten glass): 2.6-2.7 (water =1)

Physical state: Solid state

Section 10 Stability & Reactivity

Chemical stability: Stable in normal use and storage conditions, and in normally foreseeable usage conditions

Hazardous decomposition products: In continuous combustion conditions, in addition to water vapour and CO_2 small quantities of CO and NOx may be released by the combustion of the size. See function 5 of MSDS for hazardous decomposition products during a fire

Possibility of Hazardous Reactions: Glass roving is stable and never generates hazardous chemical reactions

Section 11 Toxicological Information

Acute toxicity: not relevant

Local effects: Dusts and fibers may cause mechanical irritation to eyes and skin. The irritation disappears when the exposure ceases. Mechanical irritation is not considered as a health hazard in the meaning of European directive 67/548/EC on hazardous substances. Continuous filament glass fibers do not require a classification as an irritant (Xi) under the European 97/69/EC. Inhalation may cause coughing, nose and throat irritation and sneezing. High exposures may cause difficult breathing, congestion and chest tightness.

Long term health effects

Continuous filament glass fibers are not respirable according to the world health organization. (WHO) definition

Respirable fibers have a diameter (d) smaller than 3µm, a length (I) larger than 5µm and an l/d-ratio larger than or equal to 3. Fibers with diameters greater than microns, which is the case for continuous filament glass fibre, do not reach the lower respiratory tract and, therefore have no possibility of causing serious pulmonary disease.
Section 2.3 of TRGS 905, edition of June 1997 is not applicable.

The general principles of industrial hygiene for fibers with a diameter of> 3µm listed in TRGS 521- Fiber dusts- as amended in November 1997 under no.5 which can develop or be released during processing, have to be adhered to

Continuous filament glass fibers do not possess cleavage planes which would allow them to split length-wise into fibers with small diameters, rather they break across the fiber, resulting in fibers which are of the same diameter as the original fiber with a shorter length and a small amount of dust,

Microscopic examination of dust from highly chopped and pulverized glass demonstrated the presence of small amount of respirable dust particles. Among these respirable particles, some were fiber like in terms of l/d ration (so-called "shards"). It can be clearly observed however that they are not regular shaped fibers but irregular shaped particles with fiber like dimensions. To the best of our knowledge, the exposure level of these fiber-like dust particles measured at our manufacturing plants are of the order magnitude between 50 to 1000 below existing applicable limits.

Continuous filament glass fibers are not carcinogenic

Section 12 Ecological Information

Ecotoxicity: No specific data are available for this product. This material is not expected to cause harm to animal's plants or fish.

Section 13 Disposal Considerations

Waste Disposal: Continuous filament glass fiber waste is a nonhazardous waste

Waste code no: EAK 101 103
Identification: old glass fiber provisions
Adhere to the following national and regional provisions:

1) Act on the support cycle management and safeguarding of environmentally compatible waste disposal (act on cycle management and waste KrW-/AbfG) of 27 September 1994, amended by the Act of 12 September 1996 (BGBL I p.1354)
2) Regional waste management statutes) clean cardboard, wood, plastic (film or bags) and packaging can be eliminated in waste disposal units specific to these products (i.e. for recycling or use as fuels)

Section 14 Transport Information

Shipping Information: international transport provision: Glass fiber (continuous fiber) products are **no dangerous substances** according to the Dangerous substance ordinance (GGVS) as amended on 18 July 1995. Therefore, no specific measures for the transportation and labelling for land, inland waterwy and air transportation are necessary. It is recommended to transport and store the product in a dry condition and within its original packaging

Section 15 Regulatory Information

This product is not hazardous according to European Directive 99/45/EEC and their latest amendment

Info on non-carcinogenicity: According to E.U. Directives the continuous filament glass fibers in these products are not classified carcinogenic

Continuous filament glass fibers are not within the scope of Directive (67/548/EEC per amendment 97/69/EC since they are not "fibers with random orientation".

The international Agency of research on cancer (IARC) in June, 1987, and in October, 2001, categorized continuous filament fiber glass as not classifiable with respect to human carcinogenicity (group 3). The evidence from human, as well as, animal studies were evaluated by IARC as insufficient to classify continuous filament fiber glass as a confirmed, probable or even possible cancer causing material

National chemical inventories

Continuous filament glass fiber products are *articles* under the chemicals inventories listed below and consequently are exempt from listing on these inventories:

- The European Inventory of Existing Chemical Substances: EINECS/ELINCS.
- The US EPA Toxic Substance Control Act: TSCA,
- The Canadian Chemical Registration Regulations: NDSL/DSL,
- The Japanese Chemical Substances Control Law Under METI: CSCL
- The Australian Inventory of Chemicals and Chemicals Substances: PICCS,
- The Korean Existing Chemicals List: (K)ECL and,
- The Chinese List on New Chemical Substances

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However, based on the rules enforced with regards to the marketing and use of chemicals in countries where our CFGF products are manufactured, each chemical ingredient of these finished products has to be listed on National

Chemicals Inventory of the specific country where produced

Other info: Preparation date: 24.08.2008

This document has been issues to align with REACH regulation

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