

Preparation Date: February 9, 2018

Revision Date: --

Version: 1

0. INTRODUCTION

The European Regulation (ER) on Chemicals No. 1907/2006 (REACH) enforced on June 1st, 2007 does only require Safety Data Sheet (SDS) for hazardous substances and preparations. Our continuous filaments glass fiber products (CFGF) are articles under REACH and therefore, no SDS is legally required.

FORTA decides to provide our customers with the appropriate information for assuring the safe handling and use of Continuous Filaments Glass Fiber products through a **Safe Use Instructions Sheet**.

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name	Surface-EXT™
Recommended Uses	Reinforcement of slurry surfacing and micro surfacing paving applications
Supplier of the Safety Data Sheet	FORTA 100 Forta Drive Grove City, PA 16127
Company Phone Number	Phone: 1-800-245-0306 Fax: 724-458-8331
Health Contact	(8am-5pm CET): European R&D: +33 479 75 53 00

2. HAZARDS IDENTIFICATION

This product is not classified hazardous according to European Regulation n°1272/2008.

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

- May cause temporary skin and mucous membranes itching due to the mechanical abrasion effect of fibers.
- Exposure to airborne dusts and fibers (inhalation).

For detailed explanation see section 11.

3. COMPOSITION / INFORMATION ON INGREDIENTS

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 design 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 3%

For CSM and CFM products, a binder is applied in a secondary step to form the mat. The binder (mixture of polymeric resin and surfactant) content is usually below 10% of the product weight.

4. FIRST AID MEASURES

Eye Contact	<ul style="list-style-type: none">• Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.• Do not rub or scratch eyes.• If eye irritation persists, consult a specialist.
Skin Contact	<ul style="list-style-type: none">• Wash off immediately with soap and <u>cold</u> water.• 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	<ul style="list-style-type: none">• Move to fresh air.• If symptoms persists, call a physician.

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 and prolonged heat or fire.

Suitable Extinguishing Media	<ul style="list-style-type: none">• water• dry chemical• foam• carbon dioxide (CO₂)
Protective Equipment and Precautions for Firefighters	Wear self-contained breathing apparatus (SCBA) and full fire-fighting protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions	Avoid contact with the skin and the eyes.
Methods for Clean-up	<ul style="list-style-type: none">• Pick up and transfer to properly labeled containers.• Avoid dry sweeping.• Shovel the major part of spilled material into a container.• Use an industrial vacuum cleaner with a high efficiency filter to clean up dust and residual spilled material.• After vacuum cleaning, flush away with water.

7. HANDLING AND STORAGE

Handling	<ul style="list-style-type: none">• Wear appropriate personal protective equipment in case of direct contact with the product. (See section 8.)• Prevent and/or minimize dust formation.
Storage	<ul style="list-style-type: none">• Keep product in its packaging until use to minimize potential dust generation.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

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 Limit(s)

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

	Respirable Dust	Total Dust	Respirable Fiber
ACGIH	3mg/m ³	10 mg/m ³	1 fiber/ml
Austria	5 mg/m ³	5 mg/m ³	0.5 fiber/ml
Belgium	3 mg/m ³	10 mg/m ³	1 fiber/ml
Denmark	5 mg/m ³	10 mg/m ³	0.1 fiber/ml
Finland	--	10 mg/m ³	1 fiber/ml
France	5 mg/m ³	10 mg/m ³	1 fiber/ml
Germany	1.25 mg/m ³	10 mg/m ³	--
Ireland	4 mg/m ³	10 mg/m ³	1 fiber/ml
Italy	3 mg/m ³	10 mg/m ³	1 fiber/ml
Netherlands	3 mg/m ³	10 mg/m ³	0.5 fiber/ml
Norway	5 mg/m ³	10 mg/m ³	1 fiber/ml
Portugal	3 mg/m ³	10 mg/m ³	1 fiber/ml
Spain	3 mg/m ³	10 mg/m ³	1 fiber/ml
Switzerland	3 mg/m ³	10 mg/m ³	0.5 fiber/ml
United Kingdom	4 mg/m ³	10 mg/m ³	2 fibers/ml

Occupational Exposure Controls

Engineering Controls

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

Personal Protective Equipment

Respiratory Protection

- In situations where concentrations are above exposure limits, appropriate dust masks must be worn (FFP1 or FFP2 depending on the actual airborne concentration).

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.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	White or off-white
Physical State	Solid
Softening Point	>800°C
Melting Point	Not applicable
Decomposition Temperature	Size and mat binders start to decompose at 200°C
Density (molten glass)	2.6 (water = 1)
Water Solubility	Insoluble

10. STABILITY AND REACTIVITY

Chemical Stability	Stable under normal conditions.
Hazardous Decomposition Products	See section 5 of SDS for hazardous decomposition products during a fire.
Possibility of Hazardous Reactions	Hazardous reaction does not occur.

11. TOXICOLOGICAL INFORMATION

Acute Toxicity	Not relevant
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Local Effects

Dust and fibers may cause temporary skin and mucous membranes itching due to the mechanical abrasion effect of fibers. The symptoms disappear when the exposure ceases. Mechanical abrasion is not considered as a health hazard in the meaning of Regulation (EC) 1272/2008. Continuous filament glass fibers are not classified as irritant under the regulation (EC) 1272/2008.

Inhalation may cause coughing 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 (l) larger than 5µm and a l/d-ratio larger than or equal to 3. Fibers with diameters greater than 3 microns, which is the case for continuous filament glass fiber, do not reach the lower respiratory tract and, therefore have no possibility of causing serious pulmonary disease.

Continuous filament glass fibers do not possess cleavage planes which would allow them to split length-wise into fibers with smaller 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 amounts of respirable dust particles. Among these respirable particles, some were fiber-like in terms of l/d ratio (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 levels of these fiber-like dust particles measured at our manufacturing plants are of the order of magnitude between 50 to 1000 below existing applicable limits.

Continuous filament glass fibers are not carcinogenic. (See section 15).

12. ECOTOXICOLOGICAL INFORMATION

No specific data are available for this product. This material is not expected to cause harm to animals, plants or fish.

13. DISPOSAL CONSIDERATIONS

Continuous filament glass fiber waste is a non-hazardous waste. European Waste Code number is 101103.

14. TRANSPORT INFORMATION

IMDG/IM – RID – ADR – ICAO – IATA – DOT – TDG – MEX

Not regulated

15. REGULATORY INFORMATION

This product is not hazardous according to European Regulation 1272/2008.

Information on non carcinogenicity

Continuous filament glass fibers are not classified as carcinogenic by regulation (EC) 1272/2008 since they are not "fibers with random orientation."

The International Agency for 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 was evaluated by IARC as insufficient to classify continuous filament fiber glass as a confirmed, probable or even possible cancer causing material.

National chemicals 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 Chemical Substances: AICS,
- The Philippine Inventory of Chemicals and Chemical Substances: PICCS,
- The Korean Existing Chemicals List: (K)ECL and
- The Inventory of Existing Chemical Substance in China (IECSC)

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 the National Chemicals Inventory of the specific country where produced.

16. OTHER INFORMATION

AR Glass contains traces of naturally-occurring radioactive materials. The total content of Uranium and Thorium is less than 500 ppm with a total specific activity below 20Bq/g.

This document has been issued to align with REACH Regulation.

Disclaimer

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

End of Safe Use Instructions Sheet