POSITION PAPER

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REACH REGULATION AND STATUS OF CONTINUOUS FILAMENT GLASS FIBRE PRODUCTS

As a result of the review by its Member Companies of Regulation (EC) No.1907/2006 (REACH), Glass Fibre Europe makes the following statement:

Continuous Filaments Glass Fibre Products are ***articles***, see Annex 1 for Rationale.

Continuous Filaments Glass Fibre Products embedded into a plastic matrix (pellets) keep their status of **article**, see Annex 2 for Rationale.

REACH ARTICLE 6 REQUIREMENT:

General obligation to register substances on their own or in preparations

Article 6.1

Save where this Regulation provides otherwise, any manufacturer or importer of a substance, either on its own or in one or more preparation(s), in quantities of 1 tonne or more per year shall submit a registration to the Agency.

Registration requirement is not applicable to articles.

REACH ARTICLE 7 REQUIREMENTS:

Registration and notification of substances in articles

Article 7.1

Any producer or importer of articles shall submit a registration to the Agency for any substance contained in those articles, if both the following conditions are met:

(a) the substance is present in those articles in quantities totalling over 1 tonne per producer or importer per year;

(b) the substance is intended to be released under normal or reasonably foreseeable conditions of use.

A submission for registration shall be accompanied by the fee required in accordance with Title IX.

CFGF products do not contain substances intended to be released under normal or reasonably foreseeable conditions of use. Therefore, there is no registration obligation for substances in article according to Article 7(1) of the Regulation.

Article 7.2

Any producer or importer of articles shall notify the Agency, in accordance with paragraph 4 of this Article, if a substance meets the criteria in Article 57 and is identified in accordance with Article 59(1), if both the following conditions are met:

(a) the substance is present in those articles in quantities totalling over 1 tonne per producer or importer per year;

(b) the substance is present in those articles above a concentration of 0,1 % weight by weight (w/w).

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The presence of substances that will potentially meet the criteria in Article 57 (SVHC – Substances of Very High Concern) and be identified in accordance with Article 59(1) (candidate list) in concentration above 0.1% is generally not anticipated in CFGF products. **However, it is the responsibility of each GlassFibreEurope member company to assure compliance with Article 7(2).**

REACH ARTICLE 31 REQUIREMENT:

Requirements for Safety Data Sheets

Article 31.1

The supplier of a **substance or a preparation** shall provide the recipient of the substance or preparation with a safety data sheet compiled in accordance with Annex II: …….

There is an obligation to provide Safety Data Sheet for dangerous substances and preparations. Providing a Safety Data Sheet for Continuous Filament Glass Fibre products is in fact in contradiction with their ***article*** status. It is expected that Glass Fibre Europe member companies will communicate to their customers the appropriate information for assuring the safe handling and use of CFGF products. However, there is no mandatory format defined in the Regulation for providing that information.

REACH ARTICLE 33 REQUIREMENTS:

Duty to communicate information on substances in articles

Article 33.1

Any supplier of an article containing a substance meeting the criteria in Article 57 and identified in accordance with Article 59(1) in a concentration above 0.1 % weight by weight (w/w) shall provide the recipient of the article with sufficient information, available to the supplier, to allow safe use of the article including, as a minimum, the name of that substance.

Article 33.2

On request by a consumer any supplier of an article containing a substance meeting the criteria in Article 57 and identified in accordance with Article 59(1) in a concentration above 0,1 % weight by weight (w/w) shall provide the consumer with sufficient information, available to the supplier, to allow safe use of the article including, as a

minimum, the name of that substance.

The relevant information shall be provided, free of charge, within 45 days of receipt of the request.

It is the responsibility of each Glass Fibre Europe member company to assure compliance with Article 33, if applicable.

About Glass Fibre Europe – EU Transparency Register n°635608817518-09.

Glass Fibre Europe, founded in 1987, is the voice of the European continuous filament glass fibre industry. It is composed of 7 companies: 3B the fibreglass company, FYSOL SAS, Johns Manville, Lanxess, Nippon Electric Glass, Owens Corning and Saint-Gobain Vetrotex. Glass Fibre Europe represents over 90% of the continuous filament glass fibre production in Europe.

ANNEX 1

Continuous Filament Glass Fibre (CFGF) products as, among others, single end or direct roving, multi-end or assembled roving, chopped strand, chopped strand mats and yarns are articles according to Article 3(3) – Definitions - of the Regulation (EC) No. 1907/2006 (REACH).

General considerations

According to Article 3 (3) of the REACH Regulation, article means an object which during production is given a special shape, surface or design which determines its function to a greater degree than does its chemical composition.

In the following are considered the different elements in view of CFGF products:

1. Shape of CFGF

Continuous filament glass fibre products are produced by a continuous drawing process through a "bushing" (a device fitted with calibrated holes) which forms continuous glass filaments from molten glass. This process is designed to obtain glass filaments with a defined and precisely controlled diameter. A surface treatment (sizing) is applied onto the glass filament which are then gathered into continuous filament glass fibre strands.

2. Design of CFGF

The CFGF strands are further processed into various product designs according to their use, e.g.:

- Single end or direct roving: the single filaments are brought together into a bundle in order to result in a well defined design.
- Multi-end or assembled roving: single filaments are brought together into a bundle, these bundles are again brought together in order to result in a well defined design. The design is also influenced by the number of strands, the orientation of the fibres and the linear density.
- Chopped strands: the filaments are cut (chopped) to a specific length.
- Textile yarns – single yarns consisting of pre-determined number of filaments, further processed and available in form of twisted, plied, voluminized and texturised yarns
- Technical Fabrics: woven fabrics of various structures made of textile yarns with coating/impregnation in forms of mesh fabrics, wall coverings, laid scrims, insect screens, grinding wheels fabrics, dry wall tapes, etc.
- Chopped Strand Mat or Continuous Filament Mat: the strands (chopped or not) are distributed on a conveyor with a binder application

The shape of the fibre filament, especially its diameter as well as the additional design characteristics of the various CFGF products, is essential for delivering the function.

3. Surface of CFGF

The filament form (endless cylinder) defines the size of the final surface of the fibre, which is a direct function of the diameter and length.

4. Function of CFGF

The function of CFGF products is defined by the purpose of their use.

CFGF are used mainly as reinforcement in plastics, where they have the function to increase the mechanical strength, the thermal and chemical resistance of the plastics.

After their embedding in a plastic resin, the continuous filament glass fibres - aligned following a pre-defined direction or dispersed isotropically – are still characterized by their original filament diameter and a high length-to-diameter ratio. This results in a high surface-to-volume ratio permitting optimum anchorage of fibres within the plastic through the surface treatment (sizing) deposited on fibre surface and leads to a high improvement in the material strength, i.e. the reinforcement function.

CFGF can also be used for acoustic or thermal insulation where their function is to form a porous network through which heat or sound energy can be attenuated. This function is obtained by the friction of fluids (usually air) against the large surface of the CFGF randomly placed in defined volumes.

Considerations in light of the Guidance for Articles (paragraph 3 deciding what an article is)

Chapter 3 of the Guidance for Articles assists in deciding if an object is an article or not, in particular when there are doubts concerning:

1) The borderline in the sequence of processing natural or synthetic materials to final articles, in particular deciding on 'semi-finished products'
2) The borderline between substances/preparations in special containers / on special carrier material

1. Borderline in the sequence of processing natural or synthetic materials to final articles

If there is a doubt whether or not a material is an article, the following indicative questions may help.

1.1 Does the material in question have a function other than being further processed?

Yes. Certain CFGF products can be used as such to deliver their function e.g. muffler filling with roving for sound attenuation, glass fibre fabrics for fire protection clothes, …. However there are also many applications where CFGF fibres go to further processing steps in order to obtain a more sophisticated design.

1.2. Does the seller put the material on the market and/or is the customer mainly interested in acquiring a material because of its chemical composition or its shape/surface/design?

The shape, surface and design of the material are more important for the person acquiring a man-made fibre (e.g. length and diameter). Shape and design determine the end-use function. The buyer specifies the CFGF product he wants by designating elements of shape/surface/design like filament diameter, linear density, twist, surface weight, length and surface treatment.

The buyer purchases a chopped strand, a roving, a mat,…which in essence is designating elements of shape and design.

1.3. After which processing step is the function determined to a larger degree by the shape/surface/design?

After the first step, the "drawing" of the fibre.

The drawing (or fiberizing) step in the CFGF manufacturing process shapes molten glass into fibres/filaments which are deliberately given a specific precisely defined diameter. The filament diameter is the essential "shape / surface / design" characteristic determining the function of the fibre.

After the drawing step a surface treatment (sizing) is applied to the filament to enhance their processability and improve the performances of the function delivered by the fibre: reinforcing the polymer matrix[1].

The further processing steps such as cutting, twisting, bundling, assembling, weaving…do not modify the original filament diameter.

1.4. Does the chemical composition of the material as such remain similar in the next processing steps as a change may indicate the material being a preparation?

Yes. The chemical composition of the CFGF article remains similar through the next processing steps.

[1] "Surface treatment of raw materials which are articles may result in a change in its overall chemical composition, however not in the status of the material being an article" Guidance on substance in articles – appendix 3 number 2 page 87

2. **Borderline between substances/preparations in special containers / on special carrier** materials and substances/preparations being (integral) parts of an article.

In order to determine if the surface treatment (sizing) is an integral part of the CFGF product, the following questions may lead to clarification.

2.1 If the substance/preparation (i.e. sizing) were to be removed or separated from the object (i.e. CFGF article) and used independently from it or changed from the object to a similar type of object, would the substance/preparation still be capable in principle (though perhaps without convenience or sophistication) of carrying out the intended purpose of the substance/preparation?

No, the sizing has no function on its own! The function of the sizing is to improve the processability of the fibre and the adhesion between the glass fibre and the polymer matrix. The same sizing applied to e.g. "glass micro balls" would also not deliver the function, since the fibre shape is essential for the function.

2.2 Does the object (i.e. CFGF article) act as a container or carrier for release or controlled delivery of the substance/preparation (i.e. sizing) or its reaction products?

No, the function of the sizing is to adhere to the glass fibre and not to be released.

2.3 Is the substance/preparation (i.e. sizing) predominantly consumed during the use phase of the object (i.e. CFGF article) or eliminated or in any other way outside the object at the end of useful life, i.e. before disposal?

No, the sizing is not consumed and remains on the fibre.

If you can answer these questions with 'no' rather than 'yes', then the object should be regarded as an article!

Since the questions above were answered predominantly with 'no' you can use the following questions to crosscheck

whether the object (i.e. CFGF article) should indeed be considered as an article and not as a substance/preparation (i.e. sizing) in a special container.

2.4 If the substance/preparation (i.e. sizing) were to be removed or separated from the object (i.e. CFGF article) or exchanged for a similar type of substance/preparation, would the object be unable to fulfill its intended purpose?

The sizing can not be separated from the object (i.e. CFGF article).

2.5 Is the main purpose of the object (i.e. CFGF article) other than to deliver the substance/preparation (i.e. sizing) or its reaction products?

Yes.

2.6 Is the object (i.e. CFGF article) normally discarded with the substance/preparation (i.e. sizing) at the end of useful life, i.e. at disposal?

Yes.

If you can answer these questions with 'yes' rather than 'no', then the function of the object is likely to be determined by the physical properties shape, surface and design, than by the chemical composition.

The object is then regarded as an article and its chemical content as an integral part thereof. In this case it must be checked if obligations under Article 7 and Article 33 apply.

Conclusion

From the above it can be concluded that CFGF are given a special shape, surface or design during production. The function that is intended by its use is clearly defined by these characteristics. Even if the chemical composition of the glass and the sizing plays an important role for achieving certain properties or increasing the anchorage of fibres in the plastic matrix, they are not the determining factor for achieving the function during the intended use. The exact same composition but without the specific "shape, surface and design" given to specific CFGF products would not deliver the function.

ANNEX 2

In Annex 1 we clearly showed that CFGF products with their surface treatment (sizing) are articles according to the REACH Regulation.

In the majority of their end-use applications, CFGF products are combined with plastic polymers to obtain composite materials (glass fibre reinforced plastics).

The combination may take place at various stages (processing steps) of the composite article manufacturing process.

In some cases the combination of CFGF products and polymer matrix can result directly into a composite material article, e.g. a car bumper, a windmill blade, a water distribution pipe, etc.

In other cases, the CFGF products and polymer matrix are combined to obtain first reinforced plastic granules which will further be processed into a finished article.

Plastic granules are generally considered as preparations (their shape/surface/design are not determining their function).

When it comes to reinforced plastic granules/pellets, we strongly believe these granules can be considered as a combination of a preparation (i.e. polymer + chemical additives if any) and an article (i.e. CFGF products).

In this specific case the combination takes place in an extrusion process to obtain the reinforced plastic pellets. Whereas the initial length of the chopped strand may be reduced in the extrusion process, the essential initial characteristics of the fibre (filament diameter, fibre shape) remain unchanged.

Based on above considerations, it is our conclusion that CFGF products keep their ***article*** status throughout their downstream supply chain.