SAFE USE INSTRUCTIONS SHEET

Introduction

The European directive on Chemicals No. 1907/2006 (REACH) regulates the communication of information by Material Safety Data Sheets (MSDS) for hazardous substances and preparations. Our products made of continuous glass filaments are considered ARTICLES and MSDS´s are not compulsory in terms of REACH regulation.
Saint-Gobain Vetrotex made a decision to deliver to our customers the appropriate information on safe handling and use of glass filament products through the **Safe Use Instructions Sheet**.

1. Product and company identification

Product identification	**E - Glass Yarns and Chopped Strands, C Glass Staple Fiber and C Glass Cullets (Pellets) for technical application**
Common names	Textile Yarns, Textile Yarn Beams, Voluminized Yarns, Texturized Yarns, Staple Fiber, Cakes, Zerotwist , Chopped Strands, C Glass Cullets (pellets)
Manufacturer Head quarter	**Vetrotex Sales Office Europe** Viktoriaallee 3-5 D-52066 Aachen (Germany) ☎ +49(0) 241 516 2041 Fax +49(0) 241 516 2913
Manufacturer Production plants	**Saint-Gobain ADFORS Cz, Plant 1** Sokolovska 106 CZ-57021 Litomysl ☎ : + 420 461 651 111 Fax : +420 461 651 141 **Saint-Gobain ADFORS Cz, Plant 3** Zahradni 256 CZ-67125 Hodonice ☎ : + 420 515 207 151 Fax : + 420 515 234 128 **Saint-Gobain America S.A. de C.V.** Prol. Zacatepec Manzana 42, Lote 3 Ciudad Industrial Xicohtencatl MEX-Tetla, Tlaxcala CP 90431 ☎ : + 52 241 88 200 Fax : + 52 241 88 249 **Saint-Gobain ADFORS Polska** Ul. Biecka 11 PL-38-300 Gorlice ☎ : +48 18 354 91 00 Fax : +48 18 353 66 56
Health issues Information	Phone + 33 4 325 00 970 Phone + 49 241 516 2041

2. Hazards idenfications

With regard to its composition**, the products are not classified as hazardous** according to European Directive 67/548/EEC and its latest amendments.
Details about chemical hazards are given in paragraph 3. Toxicological aspects are developed in detail in chapter 11.
Glass filaments are over 3µm in diameter. So, they do not reach the lower respiratory tract and, therefore have no possibility of causing serious pulmonary disease
Hazards identified are:
• mechanical irritation (itching),
• formation of respirable filaments (in case of high mechanical overload i.e. milling, grinding …)
• extremely rare possibilities of allergy.

3. Composition – information on constituents

Glass yarn and C- Glass cullets (pellets) products are articles in the meaning of REACH (1907/2006/EC).

These articles are mixtures of E GLASS or C GLASS in the form of continuous strands or staple fibers and a size or cullets (pellets).
The CAS number of glass filaments and cullets (pellets) is 65997-17-3 (corresponding to the oxides used for production).
E- GLASS is a glass with a very low alkaline content.
C- GLASS is a glass with very high alkaline content and low aluminium oxide content.

Glass compositions (expressed in oxides) are within the following percentages:

	E glass	C glass
SiO_2	52-56%	62-67%
CaO	16-25%	16-25%
Al_2O_3	12-16%	1-4%
B_2O_3	5-10%	3-6%
F_2	0-1%	
Alkaline oxides (Na_2O, K_2O)	0-1%	15-17%
TiO_2	0-0,8%	----
Fe_2O_3	0,05-0,4%	0-1%
MgO	0-5%	----
Alkaline earth oxides (CaO,MgO)	----	9-12%
P_2O_5	----	0-1%

SIZE is a mixture of chemicals applied to the glass filaments in a maximum quantity of 2% more generally between 0,5% - 1,5% by weight.

Most of this mixture is made up of basically non-reactive high molecular weight polymers, often natural ingredients (starches) with no reactive sites, which are not listed as substances in the EINECS nor ELINCS appendices.

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 of E glass yarns.

A second type of ingredient (sometimes 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 - H301/H331 toxic if swallowed or inhaled, R21 - H315 harmful in contact with the skin, R36 - H319 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 filaments.

Other products can be used in sizes often acting as lubricants. 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.
Our glass yarn and cullets (pellets) products do not contain any of SVHC (substances of very high concern).

4. First aid measures

General information	No specific measures required
After excessive inhalation	Supply fresh air; consult a doctor in case of complaints once exposed to dusty environment
After skin contact	In case of exposure to dust and consequent irritation immediately wash under running water and soap and rinse thoroughly. Do not rub or scratch affected areas. If skin irritation continues, consult a doctor.
After eye contact	Once a dust particle enters into eyes, rinse opened eye for several minutes under running water, keeping eyelids open and consult a doctor if necessary. Do not rub or scratch eyes.
After swallowing	Seek immediate medical advice

5. Fire fighting measures

In case of fire, glass yarns and cullets (pellets) are not flammable, are incombustible and don't support combustion.
Only the packaging (plastic film, paper, cardboard, wood) and the small amounts of size are combustible and could release small quantities of hazardous gases.

Suitable extinguishing agents:
CO2, powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

Protective equipment:
Mouth respiratory protective devices.
Do not inhale explosion gases or combustion gases.
Wear fully protective suit.

6. Accidental release measures

Personal protection:
Just in case of dusty environment avoid contact with the skin and the eyes. See chapter 8 for other instructions.

Environmental protection:
No special measures required – all sorts of glass wastes are considered as **Common Industrial Wastes**, or even **Inert Industrial Wastes**.

Cleaning:
Vacuum clean, sweep or shovel into containers normally used for glass waste (selective collection).

7. Handling & Storage

Handling:
It is preferable to avoid prolonged contact with the skin: wear the protective equipment as indicated in the chapter 8.
Prevent and minimize the dust formation during the processing of the products.
Provide local exhaust ventilation if dust is formed on the processing machinery
Ensure that suitable extractors are available on processing machines.
Storage:
Technical measures: Respect the stacking procedure recommended for each type of product.
Storage conditions: Store away from excessive humidity to prevent damage to the product and to the packing materials which could lead to storage safety problems.
Store in a good ventilated area and keep away from direct sunbeam

8. Exposure control – Personal protection

Ingredients with limit values that require monitoring at the workplace:

Continuous glass filaments are not respirable however certain mechanical processes might generate airborne dust or filaments (see chapter 11).

Engineering controls:

Provide local exhaust and/or general ventilation system to maintain low exposure levels.

Personal protective equipment:

Respiratory protection:
During operations releasing high quantities of dust, wear minimum FP1 or preferably FP2 EEC approved dust masks.
Protection of hands and other exposed parts of the body:
Protective gloves for the hands, long-sleeved shirts and long pants to prevent irritation. People with delicate skin should apply barrier cream to exposed skin areas.

Eye protection: safety goggles (or masks) or safety glasses.

9. Physical and chemical properties

Physical state	solid
Form	bobbins of yarn, chopped strands, cullets (pellets), staple fiber, cakes..
Colour	White or yellowish white
Odour	none
Softening point	approx.. 850 ℃ (E-glass) approx. 690 ℃ (C-glass)
Melting temperature	not applicable
Decomposition temperature	only sized products start to decompose at 200℃
Flash point	none
Explosive properties	none
Density (molten glass)	2,6g /cm^3
Solubility	Insoluble in water Sizes can be partially (and even totally) dissolved in most organic solvents

10. Stability and reactivity

Chemical stability
Stable in normal use and storage conditions, and in normally foreseeable usage conditions. As already identified, some substances may be released during hot processes or storage.

Hazardous reactions
No chemical hazardous reaction is foreseeable

Hazardous decomposition products
See Chapter 5 for hazardous decomposition products during fire.

11. Toxicological information

Acute toxicity:
Not relevant

Localised effects:
Possible temporary irritation

This irritation is of a purely mechanical and temporary nature. It disappears when exposure is ended. It can affect the skin, the eyes and the upper respiratory tracts. In Europe, mechanical irritation is not considered to be a health hazard within the terms of European directives 67/548/EEC for hazardous products. This is confirmed by the fact that EC Directive 97/69/EC for mineral fibres does not stipulate the need to use an Xi (irritant) label nor a classification for continuous glass filaments.

Sensitisation:
Some allergies to continuous glass filaments have been declared.

Long term toxicity:
Continuous glass filaments are not respirable according to the World Health Organisation (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 3µ, 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.

Regulatory situation:
Following the IARC (International Agency for Research on Cancer) conclusion, **glass filaments are not classified as to their carcinogenicity.** They belong to the **Group 3 of IARC**. This classification has been confirmed by the IARC Working Group during his meeting of October 2001 and in the latest issue of the IARC monographs on the

evaluation of carcinogenic risks to Humans volume 81 on man-made vitreous, published in 2002. The International Labour Office (ILO) and the CSIP (Chemical Safety International Program) came to the same conclusions in a congress held in 1987.

European Commission Directive 97/69/EC dated 5/12/97, the 23rd amendment to Directive 67/548/EEC which concerns classification, packing and labelling of hazardous substances did not think it necessary to include glass filaments as having carcinogenic risks.
OSHA (Occupational Safety and Health Administration) and NTP (U.S. National Toxicology Program), official American organisations, have not listed glass filaments products as hazardous substances and the ACGIH (American Conference of Governmental Industrial Hygienists) has classified them as A4 (not classified as carcinogenic for Man). They are not concerned by the Canadian Controlled Products regulations (CPR).

Mutagenic risks, terratogenic risks, utagenic risks, risks for reproduction:
no known risks

12. Ecotoxicological information

The products are not expected to cause harm to animals, plants nor fish.

13. Disposal consideration

Depending on local regulations, glass filament and C glass cullets (pellets) wastes can either be considered as **inert waste** or as **common industrial waste.** As such they can be buried in landfills approved for these categories.
Smaller quantities can be disposed of with household waste.
Our products are not regarded as hazardous waste, as defined by EU directive 91/689/EEC.

14. Transport information

International regulations:
Glass products are not considered as hazardous goods by transport regulations (IMDG, ADR/RID, ICAO/ IATA, DOT, TDG, MEX)

Continuous glass filament and C glass cullets (pellets) products do not require hazardous product labelling (see Chapter 11).

Glass yarn and C glass cullets (pellets) products 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, CSCL for Japan, AICS for Australia, PICCS for Philippine, KECL for South Korea, etc.

15. Regulatory information

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16. Other information

The information given by this document is based on the best knowledge at the date shown.
Furthermore, users´ attention is drawn to the possible risks run when the product is used for any purpose other than the one for which it was designed.