

Section 1: Product and Company Information:

Product Name (s):

GSX Series Fiberglass Continuous Filament/Yarns

Identity of Producer/Supplier:

Premier Farnell
150 Armley Road
Leeds LS12 2QQ
Tel. : +44 (0) 870 129 8608

Emergency telephone number

+44 (0) 870 202530

Section 2: Composition and Ingredient Information

2.1. Chemical Characteristic

Common Name	Chemical Name	CAS No.	Wt. %
Fiberglass Continuous Filament (non respirable)*1	Fibrous Glass	65997-17-3	98-100
-Nonrespirable filaments and particulate			>98%
-Respirable particulate			<1%
-Respirable particulate with fiber-like dimensions (glass shards)			<0.002%
Size *2	Size	Mixture	0-2%

Note: *1 - See Section 8 of SDS for exposure limit data for these ingredients.

*2 - See Section 15 of SDS for concentrations of California Proposition 65 chemicals and other regulatory information relative to this product(s).

Section 3: Hazards Identification

Appearance and Odour : White/off-white coloured solid with no odour.

Emergency Overview

No unusual conditions are expected from this product

Primary Route(s) of Exposure : Inhalation, Skin, Eye

Potential Health Effects : ACUTE (short term): Fiberglass continuous filament is a mechanical irritant. Breathing dusts and fibers may cause short-term irritation of the mouth, nose and throat. Skin contact with dust and fibers may cause itching and short-term irritation. Eye contact with dust and fibers may cause short-term mechanical irritation. Ingestion may cause short-term mechanical irritation of the stomach and intestines. See Section 8 for exposure controls.

CHRONIC (long term): There is no known chronic health effects connected with long-term use or contact with this product. In a laboratory test of a different product with comparable composition and durability, animals breathing very high concentrations of respirable fibers on a long-term basis developed fibrosis, lung cancer and mesothelioma. See Section 11 of SDS for more toxicological data.

Medical Conditions Aggravated by Exposure : Respiratory or skin conditions that are aggravated by mechanical irritants may be at an increased risk for worsening from exposure to this product.

Section 4: First Aid Measures

Inhalation : Move person to fresh air. Seek medical attention if irritation persists.
Eye Contact : Flush eyes with running water for at least 15 minutes. Seek medical attention if irritation persists.
Skin Contact : Wash with mild soap and running water. 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 skin. Seek medical attention if irritation persists.
Ingestion : Ingestion of this material is unlikely. If it does occur, watch the person for several days to make sure that intestinal blockage does not occur.

Section 5: Fire Fighting Measures

Flash Point and Method : None
Flammability Limits (%) : None
Auto Ignition Temperature : Not Applicable
Extinguishing Media : Water, Foam, CO₂ or dry chemical.
Unusual Fire and 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, carbon dioxide and water. Other undetermined compounds could be released in small quantities.

Section 6: Accidental Release Measures

Releases of this product to the land, water and air may require reporting to federal, state or local authorities.
Land Spill : Scoop up material and put into suitable container for disposal as a non-hazardous waste.
Water Spill : 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.
Air Release : This material will settle out of the air. If concentrated on land it can then be scooped up for disposal as a non-hazardous waste.

Section 7: Handling and Storage

Storage Temperature : Not applicable.
Storage Pressure : Not applicable.
General : No special Storage or handling procedures are required for this material.

Section 8: Exposure Controls and Personal Protection

Ingredient	OSHA PEL (8-hr TWA)	ACGIH TLV (8-hr TWA)
Fiberglass Continuous Filament:		
Nonrespirable fibers and particulate	15mg/m ³ (total dust)	5mg/m ³ (inhalable fraction)
Respirable particulate	5mg/m ³ (respirable dust)	3mg/m ³ (PNOC)
Respirable particulate with fiber like dimensions (glass shards)	None Established	1fiber/cc aspect ratio >5:1
Size	None Established	None Established

PNOC = Particles not otherwise classified

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.

- Ventilation : General dilution ventilation and/or local exhaust ventilation should be provided as necessary to maintain exposures below occupational exposure limits.
- Personal Protection : Respiratory Protection: A properly fitted NIOSH/MSHA approved disposable dust respirator such as the 3M model 8210 (formerly 8710) or model 8271 (formerly 9900) 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. Use respiratory protection in accordance with your company's respiratory protection program, local regulations and OSHA regulations under 29 CFR1910.134.
- Skin Protection : Loose fitting long sleeved shirt that covers to the base of the neck, long pants and gloves. Skin irritation is known to occur chiefly at pressure points such as around neck, wrist, waist, and between fingers.
- Eye Protection : Safety glasses, goggles or face shield.
- Work and Hygienic Practices : Handle using good industrial hygiene and safety practices. Avoid unnecessary exposures by using adequate local exhaust ventilation. Remove material from the skin and eyes after contact. Remove material from clothing using vacuum equipment (never use compressed air). Always wash work clothes separately from other clothing. Wipe out the washer or sink to prevent loose glass fibers from getting on other clothing). Keep the work area clean of dusts and fibers released during processing or fabrication. Use vacuum equipment to clean up product. Avoid dry sweeping or using compressed air as these techniques re-suspend dusts and fibers into the air. Have access to safety showers and eye wash stations.

Section 9: Physical and Chemical Properties

- Vapor Pressure (mm Hg @ 20°C) : Not Applicable
- Vapor Density (Air = 1) : Not Applicable
- Specific Gravity (water = 1) : 2.6
- Solubility in Water : Insoluble
- Appearance : Solid

Odour Type : None
Evaporation Rate (n-Butyl Acetate = 1) : Not Applicable
pH : Not Applicable
Boiling Point : Not Applicable
Viscosity : Not Applicable
Physical State : Solid
Freezing Point : Not Applicable

Section 10: Stability and Reactivity

General : Stable
Incompatible Materials and Conditions to Avoid : None
Hazardous Decomposition Products : Sizings or binders may decompose in a fire. See Section 5 of SDS for combustion products statement.
Hazardous Polymerization : Will not occur.

Section 11: Toxicological Information

CARCINOGENICITY : The table below indicates whether or not each agency has listed each ingredient as a carcinogen:

Ingredient	ACGIH	IARC	NTP	OSHA	97/69/EC
Fiberglass Continuous Filament ^(a)	A4	3	No	No	No
Size	No	No	No	No	No

ACGIH: A4 not classifiable as a human carcinogen

IARC 3: Not Classifiable with respect to Human Carcinogenicity

^(a)Includes: Nonrespirable glass particulate, Respirable glass particulate, and Respirable particulate with fiber-like dimensions (glass shards)

	LD ₅₀ Oral (g/kg)	LD ₅₀ Dermal (g/kg)	LC ₅₀ Inhalation (ppm, 8hrs.)
Fiberglass Continuous Filament ^(a)	Not Available	Not Available	Not Available
Size	Not Available	Not Available	Not Available

Fiberglass Continuous Filament:

The International Agency for Research on Cancer(IARC) in June, 1987, categorized fiberglass 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 fiberglass 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 concentration 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 azrcinoma), 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 advance fibrosis.

Importantly, this result, that is similar disease rates for the special application fiber and amosit 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 that 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 rate would be seen in longer lived species or humans, exposed to these fibers.

Section 12: Ecological Information

This material is not expected to cause harm to animals, plants or fish.

Section 13: Disposal Considerations

RCRA Hazard Class : Non-hazardous

Section 14: Transport Information

DOT Shipping Names : Not regulated
Hazard Class or Division : None
Identification No : None
Label(s) required (if not excepted) : None
Special provisions : None
Non-bulk Packaging : None
EPA Hazardous Substances : None
Quantity Limitations : Passenger Aircraft: None;
Cargo Aircraft: None
Marine Pollutants : None
Freight Description : None

Safety Data Sheet

Hazardous Material Shipping
Description : None
Secondary : None
Packing Group : None
Packaging Exceptions : None
Bulk packaging : None
RQ : None

Transportation of Dangerous Goods - Canada

Proper Shipping Name : Not Regulated
TDG Hazard Classification : (Primary): None
(Secondary): None
IMO Classification : None
ICAO/IATA Classification : None
Product Identification Number : None
Packing Group : None
Control Temperature : None
Emergency Temperature : None
Schedule XII Quantity Restriction : None
Reportable Quantity for US Shipments : None
IATA Packing Instructions : Passenger/Cargo: None
Cargo Only: None
Limited Quantity: None
Maximum Net Quantity per Package : Passenger/Cargo: None
Cargo Only: None
Limited Quantity: None
Special Provisions : None

Section 15: Regulatory Information

TSCA Status : Each ingredient is on the TSCA Inventory.
NSR Status (Canada) : Each ingredient is on the DSL
SARA Title III: Hazard Categories:

Acute Health	Yes
Chronic Health	No
Fire Hazard	No
Pressure Hazard	No
Reactivity Hazard	No
Reportable Ingredients	
Sec. 302/304	None
Sec. 313	None

Safety Data Sheet

California Proposition 65: Chemical	CAS Number:	Concentration - Parts Per Billion (PPB) Maximum
1, 4-Dioxane	123-91-1	<5
Acetaldehyde	75-07-0	<5
Ethylene Oxide	75-21-8	<5
Formaldehyde	50-00-0	<12.1

Clean Air Act : No ingredient is listed.
WHMIS (Canada) : Status : Not Controlled WHMIS Classification(s): None

Certification Statement for:
Directive 2002/96/EC for RoHS as it relates to WEEE
Based on our current glass analyses, PRO POWER certifies that our fiberglass yarns are well below the requirements to Directive 2002/96/EC for RoHS as it relates to WEEE.

Section 16: Other Information

HMIS and NFPA Hazard Rating:

Category	HMIS	NFPA
Acute Health	1	1
Flammability	0	0
Reactivity	0	0

NFPA Unusual Hazards : None
HMIS Personal Protection : To be supplied by user depending upon use.

Part Number Table

Description	Size (AWG)	Inside Diameter Inches		Wall Thickness (Nominal) Inches	Part Number
		Min.	Max.		
Heat Treated Fibreglass Electrical Sleeving	24	0.02	0.027	0.012	GSX-S24-1100-NAT
	22	0.025	0.032	0.012	GSX-S22-1100-NAT
	20	0.032	0.039	0.012	GSX-S20-1100-NAT
	18	0.04	0.049	0.012	GSX-S18-1100-NAT
	16	0.051	0.061	0.012	GSX-S16-1100-NAT
	14	0.064	0.074	0.013	GSX-S14-1100-NAT
	12	0.081	0.091	0.015	GSX-S12-1100-NAT
	10	0.102	0.112	0.015	GSX-S10-1100-NAT
	8	0.129	0.141	0.015	GSX-S08-1100-NAT
	6	0.162	0.178	0.015	GSX-S06-1100-NAT
	4	0.204	0.224	0.015	GSX-S04-1100-NAT
2	0.258	0.278	0.018	GSX-S02-1100-NAT	

Safety Data Sheet

Description	Size (AWG)	Inside Diameter Inches		Wall Thickness (Nominal) Inches	Part Number
		Min.	Max.		
Heat Treated Fibreglass Electrical Sleeving	0	0.325	0.347	0.018	GSX-S00-1100-NAT
	3/8"	0.375	0.399	0.022	GSX-024-1100-NAT
	7/16"	0.438	0.462	0.022	GSX-028-1100-NAT
	1/2"	0.5	0.524	0.022	GSX-032-1100-NAT
	5/8"	0.625	0.655	0.022	GSX-040-1100-NAT
	3/4"	0.75	0.786	0.022	GSX-048-1100-NAT
	1"	1	1.036	0.022	GSX-064-1100-NAT

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