



SAFETY DATA SHEET

PRODUCT IDENTIFICATION

Product Name: **TG-13-U**
13.0 oz/yd² - 440 g/m²

Product composition: **100% PPG / AGY Glass**

Weaver: **Texonic inc**
445 St-Jacques
Québec, Canada
J3B 2M1
Tel.: (450) 346-6853

Raw material: **PPG Industries, Inc.** **AGY**
One PPG Place 2556, Wagener Rd
Pittsburgh, PA Aiken, SC
15272, USA 29801, USA

Telephone Number: **1 (800) 432-7073** **(803) 643-1367**
Emergency: **(412) 434-4515** **(888) 434-0945**

The production of TG-13-U fabric has not in any way altered the physical state of the raw materials used to make this product, please see the enclosed MSDS from the supplier of the raw materials.

Material Safety Data Sheet



Date of issue 12 August 2014

Version 7.02

1. Product and company identification

Product name : Fiber Glass Continuous Filament

Code : 01014

Synonym : Product Family: Product Name:
Chopped Strand: ChopVantage®, ChopVantage® HP, Delta Chop®, Chopped Strands for Nonwovens
Direct Draw: HYBON®, TUFROV®, InnoFiber® NTY, LFT4000, LFT9000
Yarn: FiberGlass Yarn, L.E.X.® Yarn, TEXO® Yarn, InnoFiber® DCS
Mat: Chopped Strand Mat, MatVantage® II
Roving: Roving for Continuous Laminating, Roving for Pultrusion/Filament Winding, Roving for SMC, HYBON® Roving for Spray Up, HYBON® Woven Roving, PREFORMANCE ROVING
INNOFIBER®: CR, HP, LD, TS, XM
Insulation: Texo® HTM Mat
Recycled Products: Chop/Open ESM, Chop/Open Plastic Reinforcement, Chop/Open 10 micron, Chop/Open 900, Reject Roving, Reject Chopped Strand

Supplier :
PPG Industries, Inc.
One PPG Place
Pittsburgh, PA 15272

PPG INDUSTRIES FIBER GLASS B.V.
Energieweg 3
NL 9608 PZ Westerbroek
The Netherlands
Telephone: 31 598 313 633 / 31 598 313 911 (24h/24h) PPG Fiber Glass EMEA
Service Center/Centre

Emergency telephone number : (412) 434-4515 (U.S.)

Technical Phone Number : 1-800-432-7073 ext. 302 (Fiberglass)

2. Hazards identification

Emergency overview : WARNING!
Fiberglass may cause mechanical irritation to the skin, eye and upper respiratory tract.
Use only with adequate ventilation. Wash thoroughly after handling.

Potential acute health effects

Inhalation : Dusts from this product may cause mechanical irritation of the nose, throat and respiratory tract.

Ingestion : Although ingestion of this product is not likely to occur in industrial applications, accidental ingestion may cause illness or irritation of the mouth and gastrointestinal tract.

Skin : Dusts from this product may cause temporary mechanical irritation.

Eyes : Dusts from this product may cause temporary mechanical irritation.

Over-exposure signs/symptoms

Inhalation : No specific data.

Ingestion : No specific data.

Skin : No specific data.

Eyes : No specific data.

Product name Fiber Glass Continuous Filament

2. Hazards identification

Medical conditions aggravated by over-exposure : Pre-existing disorders involving any target organs mentioned in this MSDS as being at risk may be aggravated by over-exposure to this product.

This Material Safety Data Sheet has been prepared in accordance with Canada's Workplace Hazardous Materials Information System (WHMIS) and the OSHA Hazard Communication Standard (29 CFR 1910.1200).

See toxicological information (Section 11)

3. Composition/information on ingredients

<u>Name</u>	<u>CAS number</u>	<u>%</u>
Fibrous glass, continuous filament	65997-17-3	>95
Organic Surface Binder/Sizing	Not available.	<5

Some Fiberglass products contain Textured Polyester Filament Yarn

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. First aid measures

If ingestion, irritation, any type of overexposure or symptoms of overexposure occur during or persists after use of this product, contact a POISON CONTROL CENTER, EMERGENCY ROOM OR PHYSICIAN immediately; have Material Safety Data Sheet information available. Never give anything by mouth to an unconscious or convulsing person.

- Eye contact** : Check for and remove any contact lenses. Immediately flush eyes with running water for at least 15 minutes, keeping eyelids open. If irritation persists, seek medical attention.
- Skin contact** : Remove contaminated clothing and shoes. Gently wash with plenty of soap and water. If irritation persists, seek medical attention. If glass fiber becomes embedded, get medical attention.
- Inhalation** : Remove to fresh air. If not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel.
- Ingestion** : If swallowed, rinse mouth with water (only if the person is conscious). Keep person warm and at rest. Do not induce vomiting. Get medical attention/advice.
- Notes to physician** : Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

5. Fire-fighting measures

Flammability of the product : Material is not an electrical conductor and may accumulate static charge.

Extinguishing media

Suitable : Use an extinguishing agent suitable for the surrounding fire.

Not suitable : None known.

Special exposure hazards : Promptly isolate the scene by removing all persons from the vicinity of the incident if there is a fire. No action shall be taken involving any personal risk or without suitable training.

Hazardous combustion products : Fiberglass will not burn, but smoking of the product may occur at approximately 400 - 500 °F (approximately 200 - 260 °C) due to decomposition of the surface binder. Surface binders may decompose in a fire situation and release carbon monoxide, carbon dioxide and water. Additionally, there are many chemicals that can evolve during any partial decomposition of chemical products. The amounts or identities cannot be predicted and can differ in each situation

5 . Fire-fighting measures

Special protective equipment for fire-fighters : Fiberglass itself will not support combustion, but in a sustained fire, proper protection against products of combustion from the fuel and sizing/binder must be worn.

6 . Accidental release measures

- Personal precautions** : No action shall be taken involving any personal risk or without suitable training. Keep unnecessary and unprotected personnel from entering. Put on appropriate personal protective equipment.
- Environmental precautions** : Fiberglass is generally considered to be an inert solid waste. No special precautions are needed in case of a release or spill.
- Large spill** : Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.
- Small spill** : Vacuum or sweep up material and place in a designated, labeled waste container. Dispose of via a licensed waste disposal contractor.
- Reference to other sections** : See Section 1 for emergency contact information.
See Section 8 for information on appropriate personal protective equipment.
See Section 13 for additional waste treatment information.

7 . Handling and storage

- Handling** : Put on appropriate personal protective equipment (see Section 8). Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Do not swallow. Do not get in eyes or on skin or clothing.
- Storage** : Store in accordance with local regulations.

8 . Exposure controls/personal protection

Name	Result	ACGIH	OSHA	Ontario	Mexico	PPG
Synthetic vitreous fibers	TWA	1 f/cc R 5 mg/m ³ (Inhalable)	15 mg/m ³ TD 5 mg/m ³ R (PNOC)	Not established	Not established	Not established

Key to abbreviations

A	= Acceptable Maximum Peak	S	= Potential skin absorption
ACGIH	= American Conference of Governmental Industrial Hygienists.	SR	= Respiratory sensitization
C	= Ceiling Limit	SS	= Skin sensitization
F	= Fume	STEL	= Short term Exposure limit values
IPEL	= Internal Permissible Exposure Limit	TD	= Total dust
OSHA	= Occupational Safety and Health Administration.	TLV	= Threshold Limit Value
R	= Respirable	TWA	= Time Weighted Average
Z	= OSHA 29CFR 1910.1200 Subpart Z - Toxic and Hazardous Substances		

Consult local authorities for acceptable exposure limits.

- Recommended monitoring procedures** : If this product contains ingredients with exposure limits, personal, workplace atmosphere or biological monitoring may be required to determine the effectiveness of the ventilation or other control measures and/or the necessity to use respiratory protective equipment.
- Engineering measures** : Good general ventilation should be sufficient to control worker exposure to airborne contaminants.
- Hygiene measures** : Good personal hygiene and the use of barrier creams, caps, protective gloves, cotton coveralls or long sleeved loose fitting clothing will maximize comfort. Appropriate techniques should be used to remove potentially contaminated clothing. Work clothing should be laundered separately from other clothing before reuse. Ensure that eyewash stations and safety showers are close to the workstation location.

Personal protection

Product name Fiber Glass Continuous Filament

8 . Exposure controls/personal protection

Eyes	: Safety glasses with side shields.
Hands	: Use gloves to protect against physical irritation or injury if required by handling conditions.
Respiratory	: If dust is generated and ventilation is inadequate, use respirator that will protect against dust/mist. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.
Skin	: Wear clean, body-covering clothing.
Environmental exposure controls	: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation. In some cases, fume scrubbers, filters or engineering modifications to the process equipment will be necessary to reduce emissions to acceptable levels.

9 . Physical and chemical properties

Physical state	: Solid.
Flash point	: Closed cup: Not applicable. [Product does not sustain combustion.]
Color	: White to yellowish.
Odor	: Odorless.
pH	: Not available.
Boiling/condensation point	: Not available.
Melting/freezing point	: >800°C (>1472°F)
Specific gravity	: 2.65 to 2.7
Vapor pressure	: Not available.
Vapor density	: Not available.
Volatility	: 0% (v/v), 0% (w/w)
Evaporation rate	: Not available.
Viscosity	: Not applicable.
Solubility	: Insoluble
Partition coefficient: n-octanol/water	: Not available.
% Solid. (w/w)	: 100

10 . Stability and reactivity

Stability	: The product is stable.
Conditions to avoid	: When exposed to high temperatures may produce hazardous decomposition products.
Materials to avoid	: None known.
Hazardous decomposition products	: Fiberglass products may release small amounts of acetic acid and other organic materials at elevated temperatures.
Possibility of hazardous reactions	: Under normal conditions of storage and use, hazardous reactions will not occur.

11 . Toxicological information

Acute toxicity

Conclusion/Summary : Not available.

Chronic toxicity

Conclusion/Summary : There are no known health effects from the long term use or contact with nonrespirable continuous filament fibers, which is the type of fiber glass that PPG produces. Nonrespirable fibers cannot reach the deep lung because they have a diameter of greater than 3.5 micrometers. Fibers of this diameter cannot penetrate the narrow, bending passages of the human respiratory tract to reach the lower regions of the lung and thus, have no possibility of causing serious pulmonary damage. Instead, they deposit on the surfaces of the upper respiratory tract, nose, or pharynx. These fibers are then cleared through normal physiological mechanisms.

Animal Study: In 2000, the Institute of Occupational Medicine (IOM) in Scotland published the results of a long term inhalation study in animals exposed to fibers that were manufactured to be RESPIRABLE. Animals were exposed to a very high concentration of these RESPIRABLE fibers (1022 fibers/cc for 5 hours/day, 7 days/week for 52 weeks). Exposure to these microfibers resulted in the development of fibrosis, lung cancer and mesothelioma as a result of the fibers being able to reach the lower regions of the lung.

Chopped, crushed or severely mechanically processed fiber glass may contain a very small amount of respirable fibers that could reach the deep lung. The measured airborne concentration of these respirable fibers in areas where severe processing of fiberglass occurred has been shown to be extremely low and well below the TLV. Repeated or prolonged exposure to respirable glass fibres may cause fibrosis, lung cancer and mesothelioma. PPG fiber glass in the form supplied, does not contain respirable fibers.

Epidemiology Studies: Two major studies in the US (performed by the University of Pittsburgh) and Europe (performed by the International Agency for Research on Cancer) showed no increase in lung cancer or respiratory disease among people working in production facilities producing NONRESPIRABLE continuous filament fiberglass. An additional smaller study performed in Canada also did not show an association between exposure of workers to fiber glass and respiratory cancer.

Irritation/Corrosion

Skin : Not available.

Eyes : Not available.

Respiratory : Not available.

Sensitization

Skin : Not available.

Respiratory : Not available.

Target organs

: Contains material which may cause damage to the following organs: upper respiratory tract, skin, eyes.

Carcinogenicity

Classification

Product/ingredient name	ACGIH	IARC	NTP	OSHA
Synthetic vitreous fibers Glass filament, continuous	A4	3	- -	- -

11 . Toxicological information

Carcinogen Classification code: ACGIH: A1, A2, A3, A4, A5
 IARC: 1, 2A, 2B, 3, 4
 NTP: Proven, Possible
 OSHA: +
 Not listed or regulated as a carcinogen: -

12 . Ecological information

Environmental effects : No known significant effects or critical hazards.

Additional information :

13 . Disposal considerations

Waste disposal : The generation of waste should be avoided or minimized wherever possible. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Disposal should be in accordance with applicable regional, national and local laws and regulations.

Refer to Section 7: HANDLING AND STORAGE and Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION for additional handling information and protection of employees. Section 6. Accidental release measures

14. Transport information

	DOT	TDG	Mexico	IMDG
UN number	Not available.			<input checked="" type="checkbox"/> Not regulated.
UN proper shipping name				<input checked="" type="checkbox"/>
Transport hazard class(es)	Not available.			<input checked="" type="checkbox"/>
Packing group	-			-
Environmental hazards				No.
Marine pollutant substances	<input checked="" type="checkbox"/> Not applicable.	Not applicable.	Not applicable.	<input checked="" type="checkbox"/> Not applicable.

Additional information

DOT :
 TDG :
 Mexico :
 IMDG : None identified.

Special precautions for user : **Transport within user's premises:** always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

15 . Regulatory information

- United States inventory (TSCA 8b) : All components are listed or exempted.
 Australia inventory (AICS) : All components are listed or exempted.
 Canada inventory (DSL) : All components are listed or exempted.
 China inventory (IECSC) : All components are listed or exempted.
 Europe inventory (REACH) : Please contact your supplier for information on the inventory status of this material.
 Japan inventory (ENCS) : All components are listed or exempted.
 Korea inventory (KECI) : All components are listed or exempted.
 New Zealand (NZIoC) : All components are listed or exempted.
 Philippines inventory (PICCS) : All components are listed or exempted.

United States

SARA 302/304/311/312 extremely hazardous substances: No products were found.

SARA 302/304 emergency planning and notification: No products were found.

SARA 302/304/311/312 hazardous chemicals: No products were found.

CERCLA: Hazardous substances.: No products were found.

SARA 311/312 SDS Distribution - Chemical Inventory - Hazard Identification:

<u>Chemical name</u>	<u>CAS #</u>	<u>Acute</u>	<u>Chronic</u>	<u>Fire</u>	<u>Reactive</u>	<u>Pressure</u>
Fibrous glass, continuous filament	65997-17-3	N	Y	N	N	N
Product as-supplied :		N	N	N	N	N

Canada

WHMIS (Canada) : None identified.

Mexico

Classification

Flammability : 0 Health : 1 Reactivity : 0

16 . Other information

Hazardous Material Information System (U.S.A.)

Health : 1 Flammability : 0 Physical hazards : 0

(*) - Chronic effects

Caution: HMIS® ratings are based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® ratings are not required on MSDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® ratings are to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). HMIS® materials may be purchased exclusively from J. J. Keller (800) 327-6868.

The customer is responsible for determining the PPE code for this material.

National Fire Protection Association (U.S.A.)

Health : 1 Flammability : 0 Instability : 0

Date of previous issue : 9/14/2012.

Organization that prepared the MSDS : EHS

✔ Indicates information that has changed from previously issued version.

Disclaimer

16 . Other information

The information contained in this data sheet is based on present scientific and technical knowledge. The purpose of this information is to draw attention to the health and safety aspects concerning the products supplied by PPG, and to recommend precautionary measures for the storage and handling of the products. No warranty or guarantee is given in respect of the properties of the products. No liability can be accepted for any failure to observe the precautionary measures described in this data sheet or for any misuse of the products.



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Section 1: Product and Company Information

Product Name(s): Beta[®] fibers, Cardable fiber, Chopped Strand, Conductive Roving, E-Glass Yarns, Multitex, S-1 Glass[®] fibers, S-2 Glass[®] fibers, S-3 Glass[®] fibers, Wax Bonded Strand, Polyester Combination Yarn, VeTron[™] fibers, Yarns, ZenTron[®] fibers, L-Glass[™] fibers, S-3 HDI Glass[™] fibers, S-3 HPB Glass[™] fibers, S-3 UHM Glass[™] fibers, or S-1 HM Glass[™] fibers.

Manufacturer:

AGY World Headquarters
2556 Wagener Rd.
Aiken, SC 29801
Telephone: 1-803-643-1212 (8am to 5pm ET, weekdays)

Emergency Contacts:

CHEMTREC (24 hours everyday): 1-800-424-9300

Health and Technical Contacts:

1-888-434-0945 (8am to 5pm ET, weekdays)

Section 2: Hazards Identification

Emergency Overview

No unusual conditions are expected from this product



Appearance and Odor: White/off-white colored solid with no odor.

Primary Route(s) of Exposure: Inhalation, lungs, skin, eye

Potential Health Effects:

Inhalation:

Dusts and fibers from this product may cause mechanical irritation of the nose, throat and respiratory tract.

Skin Contact:

Dusts and fibers from this product may cause temporary mechanical irritation to the skin.

Eye Contact:

Dusts and fibers from this product may cause temporary mechanical irritation to the eyes.



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Ingestion:

Ingestion of this product is unlikely. However, ingestion of product may produce gastrointestinal irritation and disturbances.

Medical Conditions Aggravated by Exposure:

Chronic respiratory and skin conditions may temporarily worsen from exposure to this product.

Chronic Conditions:

See Section 11 for additional information.

Section 3: Composition and Ingredient Information

Common Name	CAS No.	Wt. %
Fiber Glass (non respirable)*1	65997-17-3	98 - 100
Size*2	NA	0 - 2 %

Note: *1 – 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. See Section 8 of Safety Data Sheet for exposure limit data. *2 - See Section 15 of SDS for concentrations of California Proposition 65 chemicals and other regulatory information relative to this product(s).

Component Related Regulatory Information

This product may be regulated, have exposure limits or other information identified as the following: glass wool fiber, fibrous glass and nuisance particulates.

Component Information/Information on Non-Hazardous Components

No additional information available.

Section 4: First Aid Measures

Inhalation:

Move person to fresh air. Seek medical attention if irritation persists.

Skin Contact:

For skin contact, wash with mild soap and cold water. Do not wash with warm water because this will open up the pores of the skin, which will cause further penetration of the fibers. 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. If irritation persists get medical attention.



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Eye Contact:

Immediately flush eyes with plenty of running water for at least 15 minutes. If irritation persists get medical attention.

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: None

Flash Point Method: Not determined

Upper Flammability Limit: None

Lower Flammability Limit: None

Flammability Classification: Non-flammable

Vapor Density (Air = 1): Not Applicable

Extinguishing Media: Water fog, foam, carbon dioxide (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, hydrogen, carbon dioxide and water. Other undetermined compounds could be released in small quantities.

Section 6: Accidental Release Measures

Containment Procedures: This material will settle out of air. If concentrated on land, it can be scooped up for disposal as non-hazardous waste. 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.

Clean-Up Procedures: Scoop up material and put into a suitable container for disposal as a non-hazardous waste.

Response Procedures: Isolate area. Keep personnel away.

Special Procedures: None.



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Section 7: Handling and Storage

Handling Procedures: Keep product in its packaging, as long as practicable to minimize potential dust generation. Keep work areas clean. Avoid unnecessary handling of scrap materials. Wear PPE as described in Section 8.

Storage Procedures: No special procedures.

Section 8: Exposure Controls and Personal Protection

Exposure Guidelines:

A: General Product Information: Follow all applicable exposure limits.

B: Exposure Limits:

Fiber Glass Continuous Filament (65997-17-3)

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

*PNOC = Particles not otherwise classified

Ventilation: General dilution ventilation and/or local exhaust ventilation should be provided as necessary to maintain exposures below occupational exposure limits.

PERSONAL PROTECTIVE EQUIPMENT

Respiratory Protection: A properly fitted NIOSH approved N 95 series disposable dust respirator such as the 3M model 8210 (model 8271 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.



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Skin Protection: Normal work clothing (long sleeved shirts and long pants) is recommended. Use gloves. Skin irritation is known to occur chiefly at pressure points such as around neck, wrists, waist, and between fingers.

Eye/Face Protection Equipment: Wear safety glasses, goggles or face shield.

Section 9: Physical and Chemical Properties

Appearance: White/off-white Solid	Odor: None
Physical State: Solid	pH: Not Applicable
Vapor Pressure (mm Hg @ 20°C): Not Applicable	Vapor Density (Air = 1): Not Applicable
Boiling Point: Not Applicable	Solubility (H₂O): Insoluble
Specific Gravity (Water=1): 2.60	Freezing Point: Not Applicable
Evaporation Rate (n-Butyl Acetate = 1): Not Applicable	Viscosity: Not Applicable
VOC: < 0.4%	Melting Point: > 800°C

Physical Properties: Additional Information

No additional information available.

Section 10: Chemical Stability and Reactivity Information

Stability: This is a stable material.

Conditions to Avoid: None known.

Incompatible Materials: None known.

Hazardous Decomposition Products: Sizings or binders may decompose in a fire. See Section 5 of SDS for information on hazardous combustion products.

Hazardous Polymerization: Will not occur.



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Section 11: Toxicological Information

Acute Effects:

General Product Information

Dusts may cause mechanical irritation of the eyes and skin. Ingestion may cause transient irritation of throat, stomach and gastrointestinal tract. Inhalation may cause coughing, nose and throat irritation, and sneezing. People with pre-existing respiratory conditions, may experience difficulty breathing, congestion and chest tightness.

Carcinogenicity:

Fiber Glass Continuous Filament: The International Agency for Research on Cancer (IARC) in June, 1987, categorized fiber glass 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 fiber glass 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 concentrations 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 carcinoma). 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.



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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 amosite 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 than 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 rates would be seen in longer lived species or humans, exposed to these fibers.

B: Component Carcinogenicity

Fiber Glass Continuous Filament (65997-17-3)

ACGIH: A4 – Not classified as a human carcinogen.

IARC: Group 3 “not classifiable as to its carcinogenicity to humans”
October 2001 meeting

Section 12: Ecological Information

No data available for this product. This material is not anticipated to harm animals, plants or fish.

Section 13: Disposal Considerations

US EPA Waste Number & Descriptions:

A: General Product Information

Material, if discarded, is not expected to be a characteristic hazardous waste under RCRA.

B: Component Waste Numbers

No EPA Waste Numbers are applicable for this product's components.

Disposal Instructions

Dispose of waste material according to Local, State, Federal, and Provincial Environmental Regulations.



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Section 14: Transport Information

US DOT/TDG (Canada) Information

Shipping Name: Not regulated for transport
Hazard Class: None
UN/NA #: None
Packing Group: None
Required Labels: None

Additional Transportation Regulations:
No additional information available.

Section 15: Regulatory Information

US Federal Regulations:

A: General Product Information

No additional information available.

B: Component Analysis

No additional information available.

The following is provided to aid in the preparation of SARA 311 and 312 reports.

SARA 311/312

Acute Health Hazard: Yes
Chronic Health Hazard: No
Fire Hazard: No
Sudden Release of Pressure Hazard: No
Reactive Hazard: No

C: Clean Air Act

The following components appear on the Clean Air Act – 1990 Hazardous Air Pollutants List:

None

State Regulations:

A: General Product Information

No additional information available.



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B: Component Analysis – California

California Proposition 65: Chemical	CAS Number:	Concentration - Parts Per Billion (PPB) Maximum
1, 4-Dioxane	123-91-1	< 5.0
Acetaldehyde	75-07-0	< 5.0
Ethylene Oxide	75-21-8	< 5.0
Formaldehyde	50-00-0	< 12.1

Other Regulations:

A: General Product Information

No additional information available.

B: Component Analysis - Inventory

Component	CAS #	TSCA	DSL	EINECS
Fiber Glass (Continuous Filament)	65997-17-3	Yes	Yes	266-046-0

C: Component Analysis – WHMIS IDL

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

None

WHMIS Status: Not controlled

WHMIS Classification: None

D: Other Government Regulations

Continuous filament glass products are not classified as a “Dangerous Substance” or a “Dangerous Preparations” under the EU Directive 88/379/EEC.

- 1. Classification and Labeling (EEC)** – This product is not required to be labeled under Council Directives 88/379EEC, 67/548/EEC, Annex I, and 97/69/EC.
- 2. CERTIFICATION STATEMENT for:**
Directive 2002/95/EC for RoHS and Directive 2002/96/EC for WEEE
Based on our current glass analyses, AGY certifies that our fiberglass yarns are well below the requirements of both of these Directives.



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Section 16: Other Information

HMIS and NFPA Hazard Ratings:	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.

Reasonable care has been taken in the preparation of this information, but the manufacturer makes no warranty of the 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.



SAFETY DATA SHEET

SDS Change Log

Effective Date	Revisions to Section:	Supercedes
August 09, 1999		**NEW**
August 31, 1999	1 – Added Trade Mark ® names	August 09, 1999
March 14, 2001	Reviewed entire SDS & added California Proposition Chemicals data in Section 15	August 31, 1999
April 12, 2002	Reviewed entire SDS & added VeTron™ Trade Mark in Section 1	March 14, 2001
April 14, 2004	Reviewed entire SDS & Changed name to “ AGY ”	April 12, 2002
April 12, 2005	Reviewed entire SDS & added “Other Chemicals” data to Section 15	April 14, 2004
May 22, 2006	Reviewed entire SDS & amended “Other Chemicals” data in Section 15 to remove use of Tributyl Tin Oxide (TBTO) compounds and to update per modified European Directive on Restriction of Hazardous Substances.	April 12, 2005
June 18, 2007	Added certification statement for RoHS & removed large table from Section 15. Length reduced from 15 pages to 13 pages.	May 22, 2006
October 23, 2007	Clarified certification statements for Directive 2002/95/EC for RoHS and Directive 2002/96/EC for WEEE. Length reduced from 13 pages to 11 pages.	June 18, 2007
June 23, 2008	Added E-Glass Yarns and S-1 Glass ® Fibers to product name(s).	October 23, 2007
August 1, 2008	Revised Section 8 – added ACGIH exposure limits for glass fibers.	June 23, 2008
April 8, 2010	Added S-3 Glass ® fibers and L-Glass ™ fibers to Product Name(s).	August 1, 2008
January 13, 2012	Adjusted registration marks and added S-1 HM Glass ™ fibers.	April 8, 2010
October 19, 2012	Added S-3 HDI Glass ™ fibers, S-3 HPB Glass ™ fibers, S-3 UHM Glass ™ fibers.	January 13, 2012
December 11, 2013	Reversed Sections 2 and 3 to meet requirements of OSHA 1910.1200(g)(2). Changed Material Safety Data Sheet (SDS) to Safety Data Sheet (SDS).	December 11, 2013



Disclaimer:

The information given by this document is based on the best knowledge at the date shown. It is given in good faith.

Furthermore, user's 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.

These MSDSs do not exempt users from knowing and applying the rules regulating their activities. Users assume full responsibility for applying the appropriate safety measures when the product is used.

The specifications mentioned in these MSDSs are only those of the manufacturers of the raw materials and no further testing was performed by Texonic.

The technical department