SAFETY DATA SHEET

PRODUCT IDENTIFICATION

Product Name: TG-15-N
15.3 oz/yd² - 518 g/m²

Product composition: 98.95% PPG Glass
1.05% Sapona Polyester fabric

Weaver: jb martin ltée
445 St-Jacques
Québec, Canada
J3B 2M1
Tel.: (450) 346-6853

Raw material: PPG Industries, Inc.
One PPG Place
Pittsburgh, PA
15272 USA

Telephone Number: 1 (412) 434-4515 (24h)

The production of TG-15-N 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 suppliers of the raw materials.
Material Safety Data Sheet

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,
PREFERENCE ROVING
INNOFIBER®: CR, HP, LD, 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.
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

<table>
<thead>
<tr>
<th>Name</th>
<th>CAS number</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fibrous glass, continuous filament</td>
<td>65997-17-3</td>
<td>&gt;95</td>
</tr>
<tr>
<td>Organic Surface Binder/Sizing</td>
<td>Not available.</td>
<td>&lt;5</td>
</tr>
</tbody>
</table>

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.

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

<table>
<thead>
<tr>
<th>Name</th>
<th>Result</th>
<th>ACGIH</th>
<th>OSHA</th>
<th>Ontario</th>
<th>Mexico</th>
<th>PPG</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synthetic vitreous fibers</td>
<td>TWA</td>
<td>1 f/cc R</td>
<td>15 mg/m³ TD</td>
<td>Not established</td>
<td>Not established</td>
<td>Not established</td>
</tr>
<tr>
<td></td>
<td></td>
<td>5 mg/m³ R (Inhalable)</td>
<td>5 mg/m³ R (PNOC)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Key to abbreviations**

- A = Acceptable Maximum Peak
- ACGIH = American Conference of Governmental Industrial Hygienists.
- C = Ceiling Limit
- F = Fume
- IPEL = Internal Permissible Exposure Limit
- OSHA = Occupational Safety and Health Administration.
- R = Respirable

**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**: No special ventilation requirements. Good general ventilation should be sufficient to control worker exposure to airborne contaminants. If this product contains ingredients with exposure limits, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

**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**

- **Eyes**: Safety glasses with side shields.
- **Hands**: Use gloves to protect against physical irritation or injury if required by handling conditions.
8. Exposure controls/personal protection

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:

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: 2.4 to 2.7
Vapor pressure: Not available.
Vapor density: Not available.
Vapour pressure: Not available.
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: Not available.
Chronic toxicity: 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.
11. Toxicological information

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**

<table>
<thead>
<tr>
<th>Product/ingredient name</th>
<th>ACGIH</th>
<th>IARC</th>
<th>NTP</th>
<th>OSHA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Synthetic vitreous fibers</td>
<td>A4</td>
<td>3</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Glass filament, continuous</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

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.

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.
13. Disposal considerations

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

14. Transport information

<table>
<thead>
<tr>
<th>Regulation</th>
<th>UN number</th>
<th>Proper shipping name</th>
<th>Classes</th>
<th>PG*</th>
<th>Additional information</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN</td>
<td>None.</td>
<td>Not regulated.</td>
<td>None.</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>IMDG</td>
<td>None.</td>
<td>Not regulated.</td>
<td>None.</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>DOT</td>
<td>None.</td>
<td>Not regulated.</td>
<td>None.</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

PG*: Packing group

Reportable quantity RQ: CERCLA: Hazardous substances: No products were found.

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 MSDS Distribution - Chemical Inventory - Hazard Identification:

<table>
<thead>
<tr>
<th>Chemical name</th>
<th>CAS #</th>
<th>Acute</th>
<th>Chronic</th>
<th>Fire</th>
<th>Reactive</th>
<th>Pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fibrous glass, continuous filament</td>
<td>65997-17-3</td>
<td>N</td>
<td>Y</td>
<td>N</td>
<td>N</td>
<td>N</td>
</tr>
</tbody>
</table>

Product as-supplied:

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Reactivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Canada

WHMIS (Canada): None identified.

Mexico

Classification

<table>
<thead>
<tr>
<th>Flammability</th>
<th>Health</th>
<th>Reactivity</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Physical hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

( * ) - Chronic effects

16. Other information

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

<table>
<thead>
<tr>
<th>Health</th>
<th>Flammability</th>
<th>Physical hazards</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>
16. Other information

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 : 12/9/2011.

Organization that prepared the MSDS : EHS

Indicates information that has changed from previously issued version.

Disclaimer

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.
Disclaimer:

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

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.

This MSDS 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 this MSDS are only those of the manufacturers of the raw materials and no further testing was performed by JB Martin.

The technical department

November 2013