Material Safety Data Sheet

AMI-TUF™ TGL SERIES

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Trade Names/Synonyms	AMI-TUF™ PTFE coated glass cloth /Woven fiber glass cloth impregnated with PTFE
Product Identification	TGL series.
Chemical Name/Synonyms	Continuous filament fiber glass, polytetrafluoroethylene/fibrous glass, glass fibers, PTFE.
Manufacturer's Name	Auburn Manufacturing, Inc. P. O. Box 220 Mechanic Falls, ME 04256 207/345-8271
Date prepared Revised Reviewed for content & accuracy	June 15, 1994 April 16, 2003 April 3, 2006

2. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Ingredients	Weight %	OSHA-PEL	ACGIH-TLV	OTHER
Fiberglass, continuous filament	10 to 90%	a.	10 mg/ m^3. 8-hr TWA	3 x 10^6 fibers/m^3 10-hr TWA (NIOSH)
Polytetrafluoroethylene	10 to 90%	not known	not listed	----------
Nonhazardous Ingredients	**Weight %**	**OSHA-PEL**	**ACGIH-TLV**	**OTHER**
Sizing	< 2.5%	----------none established----------		

a. OSHA has not established a specific PEL for fibrous glass. It is considered to be a "particulate not otherwise regulated" (PNOR) and is covered under the OSHA nuisance dust PEL's of 5 mg/m^3 for the respirable dust fraction and 15 mg/m^3 for the total dust fraction for an 8-hr TWA (Time Weighted Average).

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3. HAZARDS IDENTIFICATION

PRIMARY ROUTES OF EXPOSURE: Inhalation and skin contact.

HEALTH HAZARDS (Including acute and chronic effects and symptoms of overexposure):

ACUTE:

Inhalation: Inhalation of dusts and fibers may result in irritation of the upper respiratory tract (mouth, nose and throat).

Skin Contact: Skin contact with dusts and fibers may produce itching and temporary mechanical irritation.

Eye Contact: Eye contact with fibers and dusts may produce temporary mechanical irritation.

Ingestion: Temporary mechanical irritation of the digestive tract. Observe individual. If symptoms develop, consult a physician.

Heating polytetrafluoroethylene above 500^{o} F. can produce harmful fumes; above 800^{o} F. the fumes are acutely very toxic and can induce death.

CHRONIC: See carcinogenicity section below.

CARCINOGENICITY:

Hazardous Ingredients:	Listed as carcinogen by: ACGIH	IARC	NTP	OSHA
Fiberglass continuous filament	No	No*	No	No
Polytetrafluoroethylene	----none known----			

*IARC: In June, 1987 the International Agency for Research on Cancer (IARC) categorized fiberglass continuous filaments 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 filaments as a possible, probable, or confirmed cancer causing material.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Persons with a history of chronic respiratory or skin conditions that are aggravated by mechanical irritants may be at increased risk for worsening their condition from exposure during use of the product.

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4. FIRST AID MEASURES

Inhalation: Move individual to fresh air. 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 irritated areas. Rubbing or scratching may force fibers into the skin. Seek medical attention if irritation persists.

Eye Contact: Flush eyes with flowing water for at least 15 minutes. Seek medical attention if irritation persists.

Ingestion: N. A. (Not Applicable)

Note to Physician: Inhaling fumes of the decomposition products of polytetrafluoroethylene can induce temporary influenza-like symptoms which are described as "polymer fume fever". These symptoms include fever, cough and malaise.

5. FIRE FIGHTING MEASURES

Flash Point (^{O}F): NA (Not Applicable)

Auto Ignition Temperature (^{O}F):NA

Flammability Limits (%): LEL: NA UEL: NA

Extinguishing Media: Water, foam, carbon dioxide, dry chemical

Special Fire-Fighting Instructions: In a sustained fire, self contained breathing apparatus with full facepiece and protective clothing should be worn.

Unusual Fire and Explosion Hazards: Product will emit toxic fumes at high temperatures.

6. ACCIDENTAL RELEASE MEASURES

ACTION TO TAKE FOR SPILLS (Use Appropriate Safety Equipment): For solid product, not applicable. For dusts and fibers generated during fabrication vacuum up and containerize.

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7. HANDLING, STORAGE AND DISPOSAL

HANDLING: See Section 8.

STORAGE: No special precautions necessary.

DISPOSAL: Dispose of in accordance with federal, state and local regulations as a solid nonhazardous waste. Do not incinerate polytetrafluoroethylene (PTFE) waste.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

VENTILATION: General dilution ventilation and/or local exhaust ventilation should be provided, as necessary, to maintain exposures below PEL's or TLV's. **Adequate ventilation must be provided at elevated temperatures.**

RESPIRATORY PROTECTION: A properly fitted NIOSH/MHSA approved disposable dust respirator should be used when: high dust levels are encountered; glass fibers in the air exceeds the OSHA permissible exposure limits; or if irritation occurs. Use an air supplied respirator in confined spaces and when the temperature of the polymer is above 500^{o} F. Use industrial hygiene air monitoring to insure that TLV or PEL values are not exceeded. Use respiratory protection in accordance with your company's respiratory protection program and OSHA regulations under 29 CFR 1910.134 .

EYE PROTECTION: Safety glasses, goggles or face shields should be worn whenever fiberglass materials are being handled.

PROTECTIVE CLOTHING: Wear loose fitting, long sleeved shirt that covers to the base of the neck, and long pants. Skin irritation from exposure to fiberglass is known to occur chiefly at pressure points such as around the neck, wrist and waist. Wear gloves when handling product.

WORK/HYGIENIC PRACTICES: Handle in accordance with good industrial hygiene and safety practices:

= Be careful not to rub or scratch irritated areas. Rubbing or scratching may force the fibers into the skin. The fibers should be washed off. Use of barrier creams can, in some instances, be helpful.

= Use vacuum equipment to remove fibers and dusts from clothing. **COMPRESSED AIR SHOULD NEVER BE USED**. Always wash work clothes separately and wipe out the washer/sink in order to prevent loose glass fibers from getting on other clothes.

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8. EXPOSURE CONTROLS / PERSONAL PROTECTION (CON'T)

WORK/HYGIENIC PRACTICES: Handle in accordance with good industrial hygiene and safety practices(con't):

= Have access to safety showers and eye wash fountains.

= **Enforce no smoking rule in areas where polytetrafluoroethylene (PTFE) is handled or stored. Wash hands and face after handling to avoid transfer of polytetrafluoroethylene (PTFE) onto cigarettes and tobacco.**

= Avoid unnecessary exposure to dusts and fibers

= Remove fibers from skin after exposure

= Keep the work area clean of any dusts and fibers generated during fabrication. Use vacuum equipment to clean up dusts and fibers. Avoid sweeping or using compressed air as these techniques resuspend dusts and fibers into the air.

= For professional use only. **Keep out of children's reach.**

9. PHYSICAL AND CHEMICAL PROPERTIES

MELTING POINT (Softening): NM (Not Measured)

BOILING POINT (^{O}C): NA (Not Applicable)

SPECIFIC GRAVITY (Bare Glass): NM

PERCENT VOLATILE: NA

VAPOR PRESSURE (mm Hg): NA

VAPOR DENSITY (Air = 1): NA

EVAPORATIVE RATE (Ethyl Ether = 1): NA

SOLUBILITY IN WATER: Not soluble

APPEARANCE AND ODOR: Colored solid with no odor.

pH: NA

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10. STABILITY AND REACTIVITY

STABILITY (Conditions to Avoid): Stable under normal conditions. Polytetrafluoroethylene (PTFE) begins to decompose very slowly above 500^{o} F. Decomposition increases rapidly above 750^{o} F. and processing at these temperatures is not recommended.

INCOMPATIBILITY (Materials to Avoid): Molten alkali metals.

HAZARDOUS DECOMPOSITION PRODUCTS: Sizings or binders may decompose in a fire. Primary decomposition products include carbon monoxide, carbon dioxide, other hydrocarbons and water.

Decomposition of the polytetrafluoroethylene will produce tetrafluoroethylene (from 800^{o} F.), hexafluoropropylene (from 825^{o} F.), perfluoroisobutylene (from 885^{o} F.), and carbonyl fluoride (from 930^{o} F.).

HAZARDOUS POLYMERIZATION: Will not occur.