



V2 Carbon/Fiberglass Fabrics Safety Data Sheet

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

Product Name: V2 Fiberglass/Carbon Fabrics

Other names: Multiaxial fabric, stitched fabric, non-crimp fabric, knitted fabric

Synonyms: V, VB, VI, VIX, VT, VTT, VTX, VU, VX, VXV

Recommended use: For use in composite or other industrial applications as a reinforcement in combination with other materials.

Restrictions of Use: None

Manufacturer's Name: V2 Composites, Inc.

Address: 770 Lee Road 191 Auburn, Alabama 36830

Telephone: 334-502-3000

Emergency phone number: 334-502-3000

Facsimile: 334-502-3088

Website: www.v2composites.com

SECTION 2 - HAZARDS IDENTIFICATION

OSHA/HCS status: While this material is not considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200), this SDS contains valuable information critical to the safe handling and proper use of the product. This SDS should be retained and available for employees and other users of this product.

Classification of the substance or mixture: Not classified.

GHS label elements

Signal word: No signal word.

Hazard Statements: H315, H319

Precautionary Statement: Possible irritant to the skin, eyes, and respiratory tract when processed due to nuisance dust generation. Fiber is electrically conductive.



Physical/Chemical Hazards: See Section 10 for additional information. In the supplied form the product is not explosive however, the processing and buildup of fine dust can lead to a risk of dust explosion. Warning: processing may create combustible dust concentrations in the air.

Environmental hazards: No specific hazards known.

Other hazards: None

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name: Fiber Glass (E-type, continuous filament, non-respirable)
Carbon Fiber(derived from polyacrylonitrile)
Polyester Veil
Polyester Yarn (POY, Polyethylene Terephthalate Partially Oriented)
Sizing (Organic Surface Binder)

Common Name and Synonyms: Fiber Glass: E-Glass, glass mat, multiaxial, stitched, non-crimp, knitted fabric
Carbon Fiber: carbon fabric, carbon mat, multiaxial, stitched, non-crimp, knitted fabric
Polyester Veil: Nonwoven, CFM, CSM, Flow Media
Polyester Yarn: V-Lock
Sizing: Binder

Mixtures:

Ingredient Name	% by Volume	CAS number
Fiber Glass	80-100%	65997-17-3
Carbon Fiber	80-100%	7440-44-0
Polyester Veil	0-25%	25038-59-9
Polyester Yarn	0-5%	25038-59-9
Sizing	0-5%	Not available



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SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

Any concentration shown as a range is to protect confidentially or is due to batch variation.

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.

Occupational exposure limits, if available, are listed in Section 8.

SECTION 4 - FIRST AID MEASURES

Relevant routes of exposure

- Inhalation:** Remove from area to fresh air. If symptoms persist, contact a poison control center, emergency room, or a physician for treatment information.
- Eye Contact:** Remove contact lens and pour a gentle stream of warm water through the affected area for 15 minutes. Do not rub or scratch eyes. If irritation persists, contact a poison control center, emergency room, or physician as further treatment may be necessary.
- Skin Contact:** Remove contaminated clothing and shoes. Run cold water over the affected area for 15 minutes with mild soap, Do not use warm water. DO NOT rub or scratch affected area. If irritation persists or glass fiber becomes embedded, seek medical attention.
- Ingestion:** Gently wipe or rinse the inside of the mouth with water. Sips of water can be given. Never give anything by mouth to an unconscious person. Contact a poison control center, emergency room, or physician for treatment information.

SECTION 5 - FIRE FIGHTING MEASURES

- Suitable Extinguishing Media:** Dry chemical powder
- Unsuitable Extinguishing Media:** Full water jet
- Specific Hazards from the chemical during a fire:** Carbon monoxide, nitrogen oxides
- Hazardous thermal decomposition products:** Fiberglass and carbon will not burn, but smoking of the product may occur at approx. 400-500 F (approximately 200-260 deg 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 case.
- Special protective equipment for fire-fighters:** Fiberglass will not support combustion, but in a sustained fire, proper protection such as a self-contained breathing apparatus (SCBA) and full firefighting gear should be worn.
- Additional information:** Fire residues and contaminated firefighting water must be disposed of in accordance with local regulations.
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SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Solid
Appearance/Color:	White or off white and/or black
Odor:	Odorless
Odor Threshold:	NA
Vapor Pressure:	NA
Vapor Density:	NA
pH:	NA
Relative Density:	1.76-1.896(carbon), 2.6-2.7 g/cc(bare glass)
Solubility (wt.% in water):	Insoluble
Freezing/Melting Point:	>~1400°F (800°C), 3500 deg C (carbon)
Boiling Point:	NA
Flash Point:	NA
Evaporation Rate:	NA
Flammability:	NA
Explosive limits:	NA
Partition coefficient: n-octanol/water	NA
Auto Ignition Temp:	NA
Decomposition Temp:	>650 deg C in air, preparation > 290 deg C
Viscosity:	NA
Volume % Volatile:	none
Percent Solid	100
Electrically Conductive:	Yes

SECTION 10 - STABILITY AND REACTIVITY

Reactivity:	Stable under proper handling conditions. Avoid reactions with strong oxidizing agents.
Chemical Stability:	This product is stable.
Possible hazardous reactions:	Hazardous reactions will not occur under normal conditions.
Conditions to avoid:	Accumulation of fine dust may entail the risk of a dust explosion in the presence of air. The fine dust from a carbon fiber compound or composite that is cut or formed can create additional dust explosion risk depending on the resin or compounding agent. A process hazard analysis is recommended to determine what, if any, risks are present.
Incompatible materials:	None known.
Hazardous decomposition products:	No hazardous decomposition products will be formed during normal usage of carbon fiber. Complete or partial combustion of the surface coating on "sized" carbon fiber may generate COx, NOx, and/or other trace chemicals. Fiberglass products may release small amounts of acetic acid and other organic materials at elevated temperatures.



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SECTION 11 - TOXICOLOGICAL INFORMATION

Acute toxicity: No known significant effects or critical hazards.

Irritation/Corrosion:

Skin: No known significant effects or critical hazards.

Eyes: No known significant effects or critical hazards.

Respiratory: No known significant effects or critical hazards.

Sensitization:

Skin: No known significant effects or critical hazards.

Respiratory: No known significant effects or critical hazards.

Mutagenicity:

No known significant effects or critical hazards.

Carcinogenicity:

No known significant effects or critical hazards.

Classification

Product/ingredient name	OSHA	IARC	NTP
glass, oxide, chemicals	-	3	-

Reproductive toxicity: No known significant effects or critical hazards.

Teratogenicity: No known significant effects or critical hazards.

Specific target organ toxicity (single exposure): Not available.

Specific target organ toxicity (repeated exposure): Not available.

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

Aspiration hazard: Not available.

Likely routes of exposure

Potential acute health effects

Eye Contact: Dusts from this product may cause temporary mechanical irritation.

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

Skin Contact: 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.

Over-exposure signs/symptoms

Eye Contact: No specific data.

Inhalation: No specific data.

Skin Contact: No specific data.

Ingestion: No specific data.



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Delayed and immediate effects and chronic effects of short and long term exposure

SUMMARY: There are no known health effects from the long term use or contact, with **nonrespirable** continuous filament fibers. As manufactured, the glass fibers in this product are nonrespirable. 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 surface of the upper respiratory tract, nose, or pharynx. These fibers are then cleared through normal physiological mechanisms.

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 fibers may cause fibrosis, lung cancer and mesothelioma. PPG fiber glass in the form supplied, does not contain respirable fibers.

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 special application E-glass continuous filament respirable fibers. 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.

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 fiber glass production facilities. An additional smaller study performed in Canada also did not show an association between exposure of workers to fiber glass and respiratory cancer.

Short term exposure

Potential immediate effects: No known significant effects or critical hazards.

Potential delayed effects: No known significant effects or critical hazards.

Long term exposure

Potential immediate effects: No known significant effects or critical hazards.

Potential delayed effects: No known significant effects or critical hazards.

Potential Chronic health effects

General: No known significant effects or critical hazards.

Carcinogenicity: No known significant effects or critical hazards.

Mutagenicity: No known significant effects or critical hazards.

Teratogenicity: No known significant effects or critical hazards.

Delevopmental effects: No known significant effects or critical hazards.

Fertility effects: No known significant effects or critical hazards.

Acute toxicity estimates: Not available.

SECTION 12 - ECOLOGICAL INFORMATION

Toxicity: Not available

Persistence and degradability Not available

Bioaccumulative Potential Not available

Mobility in soil

Soil/water partition coefficient(Koc): Not available



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SECTION 13 - DISPOSABLE CONSIDERATIONS

Disposal Method:	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 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.
Product:	For recycling, consult manufacturer and/or waste disposal centers.
EU Waste Number:	160306, 061399
Contaminated packaging:	Packaging that cannot be cleaned should be disposed of similar to product. Uncontaminated packaging may be taken for recycling.
EU Waste Number:	150101, 150102

SECTION 14 - TRANSPORT REGULATIONS

Transport Classification:	This product is not classified as a hazardous chemical and not regulated for transport.
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.

SECTION 15 - REGULATORY INFORMATION

UNITED STATES

SARA Title III:	Section 302/304 Extremely Hazardous Substance: None Section 311 Hazardous Categorization: None Section 313 Toxic Chemicals: None
USA TSCA:	All components are listed or exempted.
CERCLA Section 102(a) Hazardous Substance:	None
RCRA Information:	Currently, the product is not listed in federal hazardous waste regulations 40 CFR, Part 261.33 paragraphs (e) or (f), i.e. chemical products that are considered hazardous if they become wastes. State or local hazardous waste regulations may also apply if they are different from the federal regulation. It is the responsibility of the user of the product to determine at the time of disposal, whether the product meets relevant waste classification and to assure proper disposal.
Ozone Depletion Information:	This product does not contain or is not manufactured with ozone depleting substances as identified in Title VI, Clean Air Act "Stratospheric Ozone Protection" and the regulations set forth in 40 CFR, Part 82.
Exposure Risk:	Not determined
Chemical Safety Report:	Not determined
Labeling:	All chemicals in this product are included on the TSCA Inventory
Hazard Symbols:	None
R-phrases:	R36/37/38 - Irritation to eyes, respiratory system and skin
S-phrases:	S36/37/38 - Wear suitable protective clothing such as gloves, eye and face protection for nuisance dust and skin abrasion protection.
Special labeling:	None
Authorization, TITLE VII:	N/A
Restrictions:	None
TITLE VIII:	N/A
Transport Regulations:	IATADGR (2008)



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SECTION 16 - OTHER INFORMATION

HMIS HEALTH HAZARD:	1
HMIS FLAMMABILITY HAZARD	0
HMIS REACTIVITY	0

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

SDS ISSUE DATE:	5/21/2015
SDS VERSION NUMBER:	1
SDS FORMAT:	(HCS)(29 CFR 1910.1200(g))
SDS REVISION NOTES:	
SDS AUTHOR:	DLM/ACM

Disclaimer: V2 Composites does not manufacture the components in the product. Component safety data sheets are available upon request. The SDS originates from the component SDS. Reasonable care has been taken in the preparation of this information, but the manufacturer makes no warranty of 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.