



Material Safety Data Sheet  
Revision Date: 6/14/11  
Version 8

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### Section 1-Product and Company Information

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Product Name	Pyrograf III <sup>®</sup> Carbon Nanofiber, PS Grade
Product Number	N/A
Company	Pyrograf Products, Inc.
Street Address	154 West Xenia Ave. PO Box 579
City, State, Zip	Cedarville, OH 45314-0579
Technical Phone	(937)-766-4868
Fax	(937)-766-4878

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### Section 2-Composition/Information on Ingredients

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Substance/Name	Carcinogen
Carbon Fiber (>98 wt %)	Unknown
Iron (<1.4 wt %)	No
Sulfur (<0.8 wt %)	No
Mineral content (<1 wt % from H <sub>2</sub> O)	No

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### Section 3-Hazards Identification

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#### Emergency Overview

Irritant if inhaled or exposed to skin or eyes

Health: 1      Flammability: 0      Reactivity: 0

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### Section 4-First Aid Measures

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#### Dermal Exposure

In case of skin contact, wash with soap and water.

#### Inhalation Exposure

If inhaled, remove to fresh air.

#### Eye Exposure

In case of contact with eyes, flush with copious amounts of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers.

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## **Section 5-Fire Fighting Measures**

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**Flammable Hazards:** No

**Explosion Hazards:** No

**Extinguishing Media:**

ABC fire extinguisher or large quantities of water may be used to extinguish incipient stage fires.

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## **Section 6-Accidental Release Measures**

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**Procedures to be followed in Case of Leak or Spill**

In case of leak or spill, gently sweep spillage into a closed container, follow-up with a vacuum cleaner. Dispose of spilled or residual material by hazardous waste incineration.

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## **Section 7-Handling and Storage**

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**Handling:**

**User Exposure**

Do not inhale. Do not get into eyes or on skin.

**Storage**

Store in tightly closed container.

**Special Requirements**

None

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## **Section 8-Exposure Controls/PPE**

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**Personal Protective Equipment:**

**Respiratory**

NIOSH certified air-purifying, tight-fitting full-face respirator equipped with N-100, P-100, or R-100 filter with an APF of 50 or greater

**Hand**

Molded Nitrile Gloves impervious to nanomaterials (passed ASTM standard F739)

**Body**

Full body protective clothing impervious to nanomaterials (passed ASTM standard F739)

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**Section 9-Physical/Chemical Properties**

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**Appearance****Physical State**

Solid (fluffy agglomerates)

**Color**

Black

**Property****Value**

pH	N/A
BP/BP Range	N/A
Vapor Pressure	N/A
Vapor Density	N/A
Specific Gravity	2.0
Volatile %	N/A
Evaporation Rate	N/A
Weight % Solid	>99%
Particle Diameter	~0.2 microns
Apparent Density	2 to 20 lbs/ft <sup>3</sup>
Nanofiber Density*	1.55 to 1.70 g/cc
Flammability	N/A
Flash Point	N/A
Solubility	N/A
Odor	None

\*The nanofiber density includes the hollow core of the nanofiber. The density of the nanofiber wall is 2.0 to 2.1 g/cc

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**Section 10-Stability and Reactivity**

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**Stability**

Stable

**Hazardous Decomposition Products**

None

**Materials to Avoid**

Strong Oxidizers

**Hazardous Polymerization**

Will not occur

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**Section 11-Toxicological Information**

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**Routes of Exposure:****Skin Contact**

Causes irritation

**Inhalation**

May cause lung damage or disease

**Eye Contact**

Causes irritation

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**Section 12-Ecological Information**

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Unknown

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**Section 13-Disposal Considerations**

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**Appropriate Method of Disposal of Substance or Preparation**

May be placed in an industrial hazardous waste incineration process according to applicable federal, state and local environmental regulations.

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**Section 14-Transport Information**

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Land transport (DOT): not regulated

Sea Transport (IMDG): not regulated

Air Transport (ICAO/IATA): not regulated

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**Section 15-Regulations**

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*US Toxic Substances Control Act* – product is listed on the TSCA chemical inventory

The TSCA Section 5(e) Consent Order issued for this product has set provisions for the end user when this product is used in a commercial application. It is important that Pyrograf Products, Inc. be notified prior to placing this product into a commercial application, as information may be needed to determine the extent of regulatory oversight. This product is subject to an Order issued under Section 5(e) of TSCA, to the TSCA Section 12(b) export notice requirement, and to the TSCA Section 8(b) chemical inventory.

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**Section 16-Other information**

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All carbon nanofibers are solid particles. Carbon nanofibers and their associated dust/shards may cause temporary irritation of the skin, eye, nasal passages, throat, upper respiratory tract, or gastrointestinal tract.

All forms of Pyrograf-III carbon nanofiber meet the definition of a respirable fiber (i.e. containing a length greater than 5 microns, a largest cross-sectional width less than 3

microns, and a length to cross-sectional width ratio greater than 3:1). Respirable fibers, dusts and shards may cause lung damage or disease.

During operations involving moving or mechanically working with this product, airborne fibers, shards, and dust may be generated. Any recipients of this product should assess their workplaces, processes, and material/products to determine if handling, processing, and/or incorporating Pyrograf-III carbon nanofibers in anyway allows for these fibers to become airborne in an open atmosphere. If so, recipients should take necessary precautions to protect people who may be exposed to Pyrograf-III carbon nanofibers.

Note: This MSDS is based upon data, information and other resources available at the time of the revision date listed. The information contained within this MSDS is considered accurate, to the extent known by Pyrograf Products, Inc. Pyrograf Products, Inc. assumes no legal responsibility for reliance or use of the information in this MSDS.