



Material Safety Data Sheet

Revision Date: 6/14/11

Version 8

Section 1-Product and Company Information

Product Name	Pyrograf III [®] Carbon Nanofiber, LHT 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

Section 2-Composition/Information on Ingredients

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

Section 3-Hazards Identification

Emergency Overview

Irritant if inhaled or exposed to skin or eyes

Health: 1 Flammability: 0 Reactivity: 0

Section 4-First Aid Measures

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.

Section 5-Fire Fighting Measures

Flammable Hazards: No

Explosion Hazards: No

Extinguishing Media

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

Section 6-Accidental Release Measures

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.

Section 7-Handling and Storage

Handling:

User Exposure

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

Storage

Store in tightly closed container.

Special Requirements

None

Section 8-Exposure Controls/PPE

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)

Section 9-Physical/Chemical Properties

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 ³
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 volume of the hollow core of the nanofiber. The density of the nanofiber wall is 2.0 to 2.1 g/cc

Section 10-Stability and Reactivity

Stability

Stable

Hazardous Decomposition Products

None

Materials to Avoid

Strong Oxidizers

Hazardous Polymerization

Will not occur

Section 11-Toxicological Information

Routes of Exposure:**Skin Contact**

Causes irritation

Inhalation

May cause lung damage or disease

Eye Contact

Causes irritation

Section 12-Ecological Information

Unknown

Section 13-Disposal Considerations

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.

Section 14-Transport Information

Land transport (DOT): not regulated

Sea Transport (IMDG): not regulated

Air Transport (ICAO/IATA): not regulated

Section 15-Regulations

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.

Section 16-Other information

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.