



E&L Enterprises Inc.

1140 Pine Orchard Road Oakdale Tennessee 37829 Tel. (423) 369-2080 Fax (423) 369-2033

Material Safety Data Sheet

May be used to comply with OSHA's
Hazard Communication Standard
29 CFR 1910.1200. Standard must be consulted
for specific requirements

U.S. Department of Labor

Occupational Safety and Health Administration
(Non-mandatory Form)
Form Approved OMB No. 1218-0072

Section I – Company Identification

Manufacturer's Name	E&L Enterprises, Inc.
Address	1140 Pine Orchard Road, Oakdale, Tennessee 37829
County	Morgan
Country	USA
Emergency Telephone Number	(423) 369-2080
Telephone Number for Information	(423) 369-2080
Facsimile Number	(423) 369-2033
Trade Name	PC100
MSDS Date	January 5, 2004
Supersedes	July 7, 1997

Section II – Product Identification

Component/ Product Trade Name	Type	Form	Composition	CAS RN	% By Wt.
Pan Based Carbon Fiber	Unsize	Milled	Polyacrylonitrile Based	7440-44-0	>99%

Section III – Physical Properties

Appearance	Black milled fibers	Specific Gravity	1.8
Vapor Pressure (mm Hg.)	Not Applicable	Melting Point	Not Applicable
Vapor Density (AIR = 1)	Not Applicable	Solubility in Water	NIL
Odor	None	Physical State	Solid
Molecular Weight	Not Applicable	Molecular Formula	Not Applicable
% Volatile	<.5%	pH	Not Applicable

Section IV – Stability and Reactivity

Chemical Stability: Stable under conditions of normal use.

Incompatibility: Compatible with most materials, avoid strong oxidizers.

Conditions to Avoid: None.

Hazardous Decomposition Products: None.

Hazardous Polymerization: Not Applicable.

Section V – Hazardous Identification

Hazardous Ratings (HMIS)

Health	Flammability	Reactivity	Protective Equipment
1	0	0	E

Hazardous Overview

This product is not expected to present any immediate concern for emergency response personnel. This product is electrically conductive and has the potential to cause severe problems in exposed electrical equipment. May cause minor skin and or eye irritation. Do not incinerate. This product is not expected to burn, however, incineration of carbon fibers can generate airborne particulates that can cause electrical malfunction.

Exposure Control

Component	OSHA (PEL)	ACGIH (TLV)	Supplier Recommended
Carbon Fiber	Not Defined	Not Defined	OSHA-TWA 15 mg/m ³ total 5 mg/m ³ respirable fraction ACGIH TLV-TWA 10 mg/m ³

Personal Protective Equipment.

Engineering controls and personal protective equipment (PPE) are required. Good hygiene practices should be followed. Before eating, drinking, or smoking, wash face and hands thoroughly with soap and water. Avoid unnecessary skin contact.

Exposure Guidelines

Ventilation Requirements	Eye Protection	Skin Protection	Respiratory
Local exhaust needed where possible to contain airborne fibers.	Safety glasses needed. Do not wear contact lenses when working with carbon fiber.	Protective gloves and full body clothing needed to prevent skin irritation.	Dust mask or air purifying respirator needed if there is a potential for exposure to high concentrations of airborne fibers.

Potential Health Effects

Skin: This product may cause slight irritation of the skin. Mechanical irritation may arise from the carbon fiber abrading or becoming imbedded into the skin. Chemical irritation may occur from exposure to sizing present on the fibers.

Eye: Fragments of this product may cause irritation, redness or inflammation of the eye.

Inhalation: Inhalation exposure to respirable fibers of this product is not expected to occur under normal industrial use. However, under very limited circumstances, exposure to respirable fibers of this product can occur and result in irritation of the respiratory tract.

Ingestion: No hazard is expected during normal industrial use. Ingestion is not a likely route of exposure for this product. Not necessary to induce vomiting. No known hazard exists.

Chronic Effects/Carcinogenicity: None of the ingredients in this product are listed as carcinogens or potential carcinogens by OSHA, NTP or IARC. Under very limited circumstances, exposure to respirable fibers of this product can occur and result in irritation to respiratory tract; prolonged exposure may cause more adverse effects.

Signs and Symptoms of Exposure

Slight irritation of the affected area.

Section VI - Emergency and First Aid Procedures

Eyes: If fibers get into the eyes, flush eyes with water for 15 minutes. Seek medical attention if irritation persists.

Skin: Wash fibers off in cold, running water with soap. If fibers are imbedded in the skin, remove fibers with tweezers. Seek medical attention if irritation develops or persists. Wash contaminated clothing before use.

Inhalation: If there is inhalation exposure to the fibers of this product, remove source of exposure and move victim to fresh air. Seek medical attention if irritation or breathing difficulty develops.

Ingestion: Not expected to occur. Ingestion is not a likely route of exposure for this product.

Section VII – Fire Fighting Measures

Flammable Properties: Not expected to burn. However, under high heat (>750 °F), this product may react with oxygen to give off carbon oxides and other decomposition products.

Flash Point: Not applicable.

Flammable Limits (UFL/LFL): Not applicable.

Extinguishing Media: This material is not expected to burn in a fire. If this product is present in a fire, fight fire based on the presence of materials that are flammable. Water, dry chemical, foam, carbon dioxide or Halon.

Fire Fighting Instructions: As in any fire, wear a self-contained breathing apparatus with pressure demand (MSHA/NOIS approved or equivalent) and full protective gear.

Section VIII- Precautions for Safe Handling and Use

Steps to Be Taken in Case Material is Released or Spilled

Collect, sweep up or vacuum spilled material and either reuse or dispose of properly. Milled carbon fibers may be slippery if spilled posing an accident risk. Flush area with water. In case of spill, place loose contaminated material in plastic bags and seal. No-contaminated material may be reclaimed for reuse. Do not allow fiber filaments to become airborne where exposed electrical equipment may be present.

Waste Disposal Method

Keep container closed. Maintain good housekeeping to control dust. The waste material of this product is not expected to be hazardous. Disposal in an approved landfill facility is recommended. Do not incinerate carbon fibers since airborne fibers may cause electrical malfunctions. Any disposal practices must be in compliance with federal, state, and local laws and regulations. Contact local state environmental agencies for specific requirements.

Transportation Information

This product is not regulated as dangerous or hazardous goods according to the regulations of DOT, IMO or IATA. Therefore, no hazard label, hazard class or UN number is applicable to this product.

Section IX – Ecological Information

No ecological information exists on this product however, carbon fiber is sufficiently inert to expected exposure conditions that no ecological affect is anticipated. To the best of our knowledge, this product does not contain nor is manufactured with any Class I or Class II Ozone Depleting Chemicals (ODCs).

Section X – Toxicological Information

No toxicological information exists on this product. E&L Enterprises, Inc. knows of no published reports which link carbon fiber to clinical disease or adverse health effects in humans.

Section XI –Regulatory Information

Federal Regulations:

CERCLA: No constituents of this material are regulated as hazardous substances.

CAA: No substances regulated as hazardous air pollutants are contained in this material.

SARA: This material is categorized as “immediate health hazard” and “not a physical hazard”.

TSCA: Product components are listed on the TSCA inventory.

State Regulations: Not determined.

International Regulations: Not determined.

Section XII–Other Information

Acronyms:

ACGIH- American Conference of Governmental Industrial Hygienists
CAA- Clean Air Act
CAS- Chemical Abstracts Service
CASRN- Chemical Abstract Service Registration Number
CECRLA- Comprehensive Environmental Response Compensation and Liability Act
DOT: Department of Transportation
HMIS- Hazardous Materials Identification Rating
IARC- International Agency for Research on Cancer
IATA- International Air Transport Association
IMO-International Maritime Organization
MSHA- Mine Safety and Health Administration
N/A- Not Applicable
NOIS- Neuro-Oncology Information System
NTP- National Toxicology Program
ODC- Ozone Depleting Chemicals
OSHA- Occupational Safety and Health Administration
PEL- Permissible Exposure Limit
PPE- Personal Protective Equipment
SARA- Superfund Amendments and Reauthorization Act
TLV- Threshold Limit Value
TSCA- Toxic Substances Control Act
TWA- Time Weighted Average
UN- United Nations Number

DISCLAIMER:

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