



MATERIAL SAFETY DATA SHEET

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name: ProGard®

Manufacturer:

Federal-Mogul Corporation
26555 Northwestern Highway
Southfield, MI 48033

MSDS# BH-119

24hr Emerg # (Infotrac): 1-800-535-5053

International: 001-352-323-3500

Non-Emerg #: 248-354-9844

SECTION 2: COMPOSITION/INFORMATION ON HAZARDOUS INGREDIENTS

ProGard is a durable, flame retardant, tightly woven, nylon sleeving. Constructed from high denier nylon yarns, ProGard was designed to provide enhanced abrasion protection over hoses, cables, wires, and other applications where rugged environments may cause wires and hoses to be chafed and damaged.

Although several of the ingredients used to formulate this product may be hazardous in the raw state, the manufacturing process results in a solid, infusible form, binding and otherwise, rendering the product inert. The constituents identified below may be present in quantities greater than 1% (0.1% for carcinogens) that may be released from the product by such operations as overheating, burning, machining, abrading, or riveting.

This information provides the minimum criteria for safe usage and handling of this product. Companies using this product should develop their own occupational health program to protect employees from injury or adverse health effects.

Ingredient	CAS No.	% Weight	OSHA PEL	ACGIH TLV
Caprolactam	105-60-2	<1	None Established	5 mg/m ³
Polycaproamide	25038-54-4	>99	None Established	None Established

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Shipped material is not considered hazardous, but operations (e.g., overheating, burning, machining, abrading, or riveting) that can create airborne dust should be avoided.

POTENTIAL HEALTH EFFECTS

Inhalation: Dust created from abrasion may cause respiratory irritation.

Skin: Prolonged contact may cause skin irritation. Hot materials can cause thermal burns.

Eye: Dust particles may cause irritation or corneal injury due to mechanical action.

Ingestion: Not a probable route of entry.

POTENTIAL HEALTH EFFECTS (continued)**Carcinogenicity:**

	COMPONENT
	NTP
	IARC
	OSHA
Caprolactam	No No No
Polycaproamide	No No No

Symptoms and Effects of Exposure to Selected Individual Components**CAPROLACTAM**

Moderately toxic by ingestion or skin contact. A skin and eye irritant. When heated, could emit toxic fumes of nitrogen oxides.

POLYCAPROAMIDE

An experimental neoplastigen by implant route. Moderately toxic by ingestion or inhalation. When heated, could produce toxic concentrations of nitrogen oxides.

SECTION 4: FIRST AID MEASURES

Inhalation:	Move to fresh air. If irritation persists, seek medical attention.
Eye Contact:	Rinse thoroughly with ample amounts of water. If irritation persists, seek medical attention.
Skin Contact:	Do not remove the molten material from skin. Rinse with cool water. Seek medical attention for thermal burn or persistent irritation.
Ingestion:	Not a probable route of entry.

SECTION 5: FIRE FIGHTING MEASURES

This product is inherently flame resistant, but may ignite at temperatures exceeding 410°C.

Flashpoint: N/A **LEL:** N/A **UEL:** N/A **Autoignition Temperature:** N/A

Extinguishing Media: Use media type for surrounding fire.

Unusual Fire and Explosion Hazards: None known

Special Fire-Fighting Procedure: Wear self-contained breathing apparatus when extinguishing a fire.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Scrap monofilament may present a slipping hazard. Sweep and dispose. If dust is generated, remove by vacuuming or wet-mopping. Vacuums used for this purpose should be equipped with HEPA filters. Do not use compressed air to blow dust from surfaces.

SECTION 7: HANDLING AND STORAGE

Store in a cool, dry place. Do not heat over 200°C for prolonged periods of time. Avoid breathing thermal decomposition products at high temperatures. If dust is generated during shipping, remove from container by vacuuming or wet-mopping. Vacuums used for this purpose should be equipped with HEPA filters. Do not use compressed air to blow dust from surfaces.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Ventilation Protection: Any operation which may produce dust, including machining, grinding, riveting, or abrading this product, should be adequately exhausted to prevent inhalation of dust. Use local exhaust ventilation when heating product above 200°C. Control caprolactam vapor concentrations to less than 1 ppm with efficient ventilation.

Respiratory Protection: Use a NIOSH-approved respirator if there is a potential for exposure to exceed applicable PELs or TLVs. (See 29 CFR 1910.134, OSHA Respiratory Protection Standard.)

Skin Protection: If skin irritation occurs, gloves and other protective garments may be worn. Wear cloth gloves when handling monofilaments to prevent cuts.

Eyes: Wear safety glasses or goggles when cutting the material.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point:	N/A	Vapor Pressure:	N/A
Melting Point:	200°C	Vapor Density (air = 1):	N/A
pH:	N/A	% Volatile:	N/A
Specific Gravity:	1.12 – 1.14	Evaporation Rate:	N/A
Water Solubility:	Insoluble	Form, Color, and Odor:	Solid, black, slight odor

SECTION 10: STABILITY AND REACTIVITY

Stability: Stable at normal temperatures and storage conditions.

Incompatibility (Materials/Conditions to Avoid): Oxidizing agents, acids, and bases.

Hazardous Polymerization: Will not polymerize.

Decomposition Products: Thermal decomposition will start at temperatures exceeding 200°C and may produce such by-products as carbon monoxide, carbon dioxide, hydrogen cyanide, ammonia, carbon dioxide, caprolactam, acetaldehydes, esters, alcohols, and acids. is released when heating above 200°C.

SECTION 11: TOXICOLOGICAL INFORMATION

Inhalation: Refer to Section 3
Skin: Refer to Section 3
Eye: Refer to Section 3
Ingestion: Refer to Section 3
Acute: None known
Chronic: None known

SECTION 12: ECOLOGICAL INFORMATION

Not available.

SECTION 13: DISPOSAL CONSIDERATIONS

Federal and state law regulates disposal of scrap material or dust as solid waste; disposal must be in accordance with federal and state laws. Contact local regulatory agencies for guidance.

SECTION 14: TRANSPORTATION INFORMATION

Proper Shipping Name: Not regulated
Hazard Class: N/A
Identification Number: N/A
Packing Group: N/A
Shipping Label: None
Additional Marking Requirement: None

SECTION 15: REGULATORY INFORMATION

U.S. TSCA: All chemicals used in the manufacture of this product are listed on the U.S. Toxic Substances Control Act (TSCA) Inventory.

California Proposition 65: This product does not contain ingredients known to the State of California to cause cancer, birth defects or other reproductive effects.

SARA Title III – Section 313 Supplier Notification: This product does not contain chemicals subject to SARA Title III/CERCLA “reportable quantities” (RQs) and/or “threshold planning quantities” (TPQs) and/or are classified as “Toxic Chemicals” under the Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 and 40 CFR 372.

RCRA Hazardous Waste Code: Not Available

CERCLA Hazardous Substances: Not Available

OSHA: PELs not established for constituents or the product.

WHMIS Classification: Not Available

SECTION 16: OTHER INFORMATION

Abbreviations:

CAS No.:	Chemical Abstract Services Number
OSHA PEL:	U.S. Occupational Safety and Health Administration, Permissible Exposure Limit
ACGIH TLV:	American Conference of Governmental Industrial Hygienists, Threshold Limit Value (2004)
mg/m ³ :	Milligrams of contaminant per cubic meter of sampled air, on a weight-to-volume basis.
N/A:	Not Applicable
IARC:	International Agency for Research on Cancer
NTP:	National Toxicology Program
HEPA:	High-efficiency particulate air
NIOSH:	National Institute of Occupational Safety and Health

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