MATERIAL SAFETY DATA SHEET

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name: **Thermflex 1212®**
(with End Dips)

Manufacturer:
Federal-Mogul Corporation
26555 Northwestern Highway
Southfield, MI 48033

MSDS# BH-079

24hr Emerg # (Infotrac): 1-800-535-5053
International: 001-352-323-3500
Non-Emerg #: 248-354-9844

SECTION 2: COMPOSITION/INFORMATION ON HAZARDOUS INGREDIENTS

BH – Thermflex 1212® (with End Dips) is an epoxy-saturated, fiberglass-braided sleeving designed to provide higher temperature resistance, excellent flame out properties, and lower fume emission than other resin systems now offered by Thermflex type sleeving. The end portions of the product have an acryl coating that helps with connections.

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.

The information in this document 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 (2005)
Continuous filament glass fibers	65997-17-3	<95	1 f/cc*	1 f/cc or 5 mg/m^3
Phenolic polymer	Proprietary	<5	None Established	None Established
Formaldehyde	50-0-0	<0.002	0.75 ppm 2 ppm (STEL)	0.3 ppm (C) (A2)
Acrylamide	79-06-1	<0.001	0.3 mg/m^3 (S)	0.03 mg/m^3 (inhalable fraction and vapor)
Acrylonitrile	107-13-1	<0.00025	2 ppm	2 ppm

* proposed

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

The product 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 or vaporsmay cause respiratory irritation.

Skin: Prolonged contact may cause skin irritation.

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
Acrylamide Yes 2A No
Acrylonitrile Yes 2B Yes
Continuous filament glass fibers No 3 No
Formaldehyde Yes 2A Yes
Phenolic polymer Unknown Unknown Unknown

Symptoms and Effects of Exposure to Selected Individual Components

ACRYLAMIDE
Toxic by ingestion, skin contact, intravenous, intraperitoneal, and other exposure routes. Intoxication has caused peripheral neuropathy, erythemia and peeling of skin on the palms. Absorbed through intact skin.

ACRYLONITRILE
Acute – May cause somnolence, general anesthesia, cyanosis and diarrhea. Symptoms include flushing of the face, salivation, irritation of eyes and nose, nausea, deepened respiration, weakness and headache.
Chronic – IARC classifies acrylonitrile as "probably carcinogenic to humans"."
Other – Human systemic irritant, may be toxic by skin and ingestion exposure routes. Target organs include liver, brain, kidneys and cardiovascular system.

CONTINUOUS FILAMENT GLASS FIBERS
Acute - May cause irritation to skin, eyes, nose, and throat. May cause skin rash, conjunctivitis, coughing and sneezing.
Chronic – Although some studies of fibrous and mineral wool workers have shown a link to lung cancer in humans, those studies have clearly provided no evidence of a link between lung cancer and continuous filament fiberglass exposure.

FORMALDEHYDE
Acute – Gastrointestinal effects may develop if ingested; may cause nausea, vomiting and severe abdominal pain. Exposure to the skin may cause irritation and contact dermatitis at low to moderate levels. Inhalation may cause irritation of the upper respiratory tract, a burning sensation of the nose and throat, sneezing, coughing, headache, difficulty breathing, nausea, vomiting, and excessive thirst. May cause conjunctivitis, eye irritation/redness/burning and excessive tearing.
Chronic – May sensitize respiratory tract and cause an asthmatic reaction. May sensitize the skin and cause an allergic skin reaction. May aggravate asthma and inflammatory or fibrotic pulmonary disease.

PHENOLIC POLYMER
May cause irritation to eyes, nose, and throat. Avoid skin contact and avoid breathing vapors. May cause dermal and respiratory sensitization (allergic reactions).

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: Wash exposed area with soap and cool water. Avoid scratching irritated areas. If irritation persists, seek medical attention.

Ingestion: Not a probable route of entry.

SECTION 5: FIRE FIGHTING MEASURES

This product is flame resistant and non-burning.

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

Extinguishing Media: Use appropriate media for surrounding materials.

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

If dust is generated, remove the dust 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. If dust is generated during shipping, remove the dust from the 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.

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. For cutting operations, gloves and loose-fitting clothing are recommended to be worn.

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:	Not determined	**Vapor Density (air = 1):**	N/A
pH:	N/A	**% Volatile:**	N/A
Specific Gravity:	1.1	**Evaporation Rate:**	N/A
Water Solubility:	Insoluble	**Form, Color, and Odor:**	Solid, various colors, odorless

SECTION 10: STABILITY AND REACTIVITY

Stability: Stable at normal temperatures and storage conditions.

Incompatibility (Materials/Conditions to Avoid): None known

Hazardous Polymerization: Will not polymerize.

Decomposition Products: Thermal decomposition will occur at temperatures exceeding 150°C, and may produce such by-products as carbon monoxide, carbon dioxide, oxides of nitrogen, and small amounts of aromatic or aliphatic hydrocarbons.

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

California Proposition 65: This product contains acrylamide, acrylonitrile, and formaldehyde, 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 contains the following 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:

Ingredient **CAS Number**
Acrylamide 79-06-1
Acrylonitrile 107-13-1
Formaldehyde 50-00-0

RCRA Hazardous Waste Code: Not Available

CERCLA Hazardous Substances: Acrylamide, acrylonitrile, and formaldehyde are CERCLA Hazardous Substances.

OSHA: OSHA has not developed standards other than PELs specific to this product or its constituents.

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 (2005)
ppm:	Parts of contaminant per million parts of sampled air, on a volume-to-volume basis.
f/cc:	Fibers per cubic centimeter of sampled air
mg/m^3:	Milligrams of contaminant per cubic meter of sampled air, on a weight-to-volume basis.
C:	Ceiling limit, a concentration that shall not be exceeded at any time during the exposure period.
A2:	ACGIH has designated this constituent as a suspected human carcinogen.
STEL:	Short-term exposure limit
(S):	"Skin" notation meaning that there is a potential for cutaneous absorption.
N/A:	Not Applicable

Abbreviations:

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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