



## MATERIAL SAFETY DATA SHEET

### SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** Expando FR Tulip

**Manufacturer:**

 Federal Mogul Corporation  
 26555 Northwestern Highway  
 Southfield, MI 48033

**MSDS#** BH-122

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

**International:** 001-352-323-3500

**Non-Emerg #:** 248-354-9844

### SECTION 2: COMPOSITION/INFORMATION ON HAZARDOUS INGREDIENTS

Expando FR Tulip Construction is a self-flaring, lightweight protective oversleeve used to protect cable assemblies, hoses, and wire harnesses from chafing, cutting, and abrading. The open-weave construction of Expando products enables each size to expand to fit several application shapes and sizes. This open-weave construction also makes them highly flexible and resistant to trapping water, heat, and humidity.

Expando protective oversleeve with Tulip construction blossoms or flares open when cut, making it easy to insert large numbers of small wires or apply sleeving over connectors. Tulip construction reduces production costs, speeds installation, and facilitates automation. Expando Tulip is ideal for applications using small diameter oversleeves which are not easily flared by manual operation.

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 overheating, burning, machining, abrasion, or riveting.

This information provides 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
Thermoplastic Polyester	None Established	<30	None Established	None Established
Antimony Trioxide	1327-33-9	<30	0.5 mg/m <sup>3</sup>	None Established (A2)
Organic Flame Retardant	None Established	<45	None Established	None Established

A2: Categorized by ACGIH as Suspected Human Carcinogen; there is limited evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals with relevance to humans

### SECTION 3: HAZARDS IDENTIFICATION

#### EMERGENCY OVERVIEW

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

## POTENTIAL HEALTH EFFECTS

### Inhalation:

Dust from abnormal abrasion or vapors from heating to greater than 300°C can cause irritation.

### Skin:

Molten material can cause thermal burns.

### Eye:

Solid or dust particle may cause irritation or corneal injury.

### Ingestion:

Not a probable route of entry.

## POTENTIAL HEALTH EFFECTS (continued)

### Carcinogenicity:

	COMPONENT NTP IARC OSHA
Thermoplastic Polyester	No No No
Antimony Trioxide	No No No
Organic Flam Retardant	No No No

## Symptoms and Effects of Exposure to Selected Individual Components

### ANTIMONY TRIOXIDE

**Inhalation** – No serious health risks reported from exposure other than a possible change in blood pressure. Prolonged exposure may cause irritation of the nose, throat and mouth.

**Other hazards** – Skin or eye contact may result in coughing, dizziness, headache, nausea, vomiting, diarrhea, stomach cramps and insomnia.

#### SECTION 4: FIRST AID MEASURES

<b>Inhalation:</b>	Move to fresh air. Seek medical attention.
<b>Eye Contact:</b>	Rinse thoroughly with ample amounts of water for 15 minutes. Seek medical attention.
<b>Skin Contact:</b>	Wash thoroughly with soap and water. If molten material falls on skin, do not attempt to remove material; cool immediately with water. Seek medical attention.
<b>Ingestion:</b>	If significant quantities have been consumed, give two glasses of water to induce vomiting. Seek medical attention.

#### SECTION 5: FIRE FIGHTING MEASURES

This product is inherently flame resistant, but may ignite at temperature exceeding 600°C in an oxygen-enriched atmosphere.

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

**Extinguishing Media:** Use media suitable for surrounding fire. Product is a flame retardant.

**Unusual Fire and Explosion Hazards:** Toxic vapors can be emitted under fire conditions.

**Special Fire Fighting Procedure:** Wear self-contained breathing apparatus when extinguishing. Hazardous decomposition products are generated in fire conditions.

#### SECTION 6: ACCIDENTAL RELEASE MEASURES

Scrap monofilament may present a slipping hazard. Sweep up and dispose of according to all federal and state disposal procedures. If dust is generated during machining, abrading, grinding or riveting, remove dust by vacuuming or wet-mopping. Do not use compressed air to blow dust from surfaces.

#### SECTION 7: HANDLING AND STORAGE

Do not heat to greater than 200°C. Avoid breathing fumes at elevated temperatures. If dust is generated while shipping product, remove 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 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

<b>Ventilation Protection:</b>	Any operation which may produce dust, including machining, grinding, riveting, or abrading this product, should be adequately exhausted to prevent inhalation of dust.
<b>Respiratory Protection:</b>	Use a NIOSH-approved respirator if there is a potential for exposure to dust, vapor, or fume exceeding PELs or TLVs. (See 29 CFR 1910.134, OSHA Respiratory Protection Standard).
<b>Skin Protection:</b>	If skin irritation occurs, gloves and other protective garments may be worn.
<b>Eyes:</b>	Wear safety glasses or goggles, as necessary, if dust exposure is possible.

**SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES**

<b>Boiling Point:</b>	N/A	<b>Vapor Pressure:</b>	N/A
<b>Melting Point:</b>	240 - 250°C	<b>Vapor Density (air = 1):</b>	N/A
<b>pH:</b>	N/A	<b>% Volatile:</b>	N/A
<b>Specific Gravity:</b>	1.5 g/cc	<b>Evaporation Rate:</b>	N/A
<b>Water Solubility:</b>	Insoluble	<b>Form, Color and Odor:</b>	Solid, black or white and odorless

**SECTION 10: STABILITY AND REACTIVITY**

<b>Stability:</b>	Stable at normal temperatures and storage conditions.
<b>Incompatibility (Materials/Conditions to Avoid):</b>	Oxidizing agents, acids and bases
<b>Hazardous Polymerization:</b>	Will not polymerize
<b>Decomposition Products:</b>	Avoid exposing to temperatures to greater than 300°C for prolonged periods of time. At this temperature, thermal decomposition starts to occur producing by-products such as carbon monoxide, carbon dioxide, hydrogen bromide and bromine.

**SECTION 11: TOXICOLOGICAL INFORMATION**

<b>Inhalation:</b>	Refer to Section 3
<b>Skin:</b>	Refer to Section 3
<b>Eye:</b>	Refer to Section 3
<b>Ingestion:</b>	Refer to Section 3
<b>Acute:</b>	None known
<b>Chronic:</b>	None known

**SECTION 12: ECOLOGICAL INFORMATION**

N/A

**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**

<b>Proper Shipping Name:</b>	Not regulated by these modes of transportation
<b>Hazard Class:</b>	None
<b>Identification Number:</b>	None
<b>Packing Group:</b>	N/A
<b>Shipping Label:</b>	None
<b>Additional Marking Requirement:</b>	None

#### SECTION 15: REGULATORY INFORMATION

<b>U.S. TSCA:</b>	All chemicals used in the manufacture of this product are listed on the U.S. Toxic Substances Control Act (TSCA) Inventory
<b>California Proposition 65:</b>	This product does not contain ingredients known to the State of California to cause cancer, birth defects or other reproductive effects.
<b>SARA Title III – Section 313 Supplier Notification:</b>	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.
<b>RCRA Hazardous Waste Code:</b>	Not Available
<b>CERCLA Hazardous Substances:</b>	Not Available
<b>OSHA:</b>	Not Available
<b>WHMIS Classification:</b>	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)
N/A:	Not Applicable
IARC:	International Agency for Research on Cancer
NTP:	National Toxicology Program

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