



MATERIAL SAFETY DATA SHEET

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name: TwistTube 2440

Manufacturer:

Federal-Mogul Corporation
26555 Northwestern Highway
Southfield, MI 48033

MSDS# BH-132

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

International: 001-352-323-3500

Non-Emerg #: 248-354-9844

SECTION 2: COMPOSITION/INFORMATION ON HAZARDOUS INGREDIENTS

Bentley-Harris TwistTube 2440 is a high temperature, lightweight sleeve designed to provide a combination of thermal and mechanical protection. It incorporates a unique, self-wrapping closure that allows for quick and easy installation. It also allows for breakouts and can be installed over complete assemblies. It is a woven blend of aramid multifilament and PPS monofilament. The combination of these two types of fibers provides the product with a continuous temperature rating of 250°C.

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 operations such 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
Poly (isophthaloyl-chloride-m-phenylenediamine) coating mixture	25765-47-3	~50	None Established	None Established
Polyphenylens sulfide (PPS)	26125-40-6	~50	None Established	None Established

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 created from abrasion may cause respiratory irritation.

Skin: Hot materials can cause thermal burns.

Eye: Dust particles may cause irritation.

Ingestion: Not a probable route of entry.

POTENTIAL HEALTH EFFECTS (continued)

Carcinogenicity:

	COMPONENT NTP IARC OSHA
Poly (isophthaloyl-chloride-m-phenylenediamine)	No No No
Polyphenylene sulfide (PPS)	No No No

Symptoms and Effects of Exposure to Selected Individual Components

Poly(isophthaloyl-chloride-m-phenylenediamine)

May cause mild skin, eye, and nasal passage irritation. Inhalation of respirable fibers may cause mild irritation to the upper respiratory tract with discomfort and cough. Chronic exposure to fiber dust may cause permanent lung injury.

Polyphenylene sulfide

Toxic effects are not known to be associated with inhalation of dust or vapors of this material. If product handled in accordance with good industrial hygiene practices, it should not present a hazard in the workplace.

SECTION 4: FIRST AID MEASURES

Inhalation:	Move to fresh air. Seek medical attention.
Eye Contact:	Rinse thoroughly with ample amounts of water. Seek medical attention.
Skin Contact:	Wash with soap and water. Seek medical attention.
Ingestion:	Not a probable route of entry. Seek medical attention.

SECTION 5: FIRE FIGHTING MEASURES

This product is inherently flame resistant, but may ignite at temperatures 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 type for surrounding fire.

Unusual Fire and Explosion Hazards: None

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. 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

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.

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:	285°C	Vapor Density (air = 1):	N/A
pH:	N/A	% Volatile:	N/A
Specific Gravity:	1.38 – 1.8	Evaporation Rate:	N/A
Water Solubility:	Insoluble	Form, Color, and Odor:	Solid, gold, none

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 start at temperatures greater than 370°C, producing such by-products as carbon monoxide, carbon dioxide, oxides of nitrogen, sulfur dioxide, carbonyl sulfide, and a small amount of hydrogen cyanide.

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 have not been established for the ingredients 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)
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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