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## Material Safety Data Sheet

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### ***HYDEX™ 4101 Natural and Black***

EMERGENCY TELEPHONE: 724-746-6050 or 856-227-0500  
ISSUE DATE: October 1, 1985  
REVISION DATE: May 31, 2011  
TRADE NAME: HYDEX™  
PART NAME: 4101  
CHEMICAL NAME: Polybutylene Terephthalate (PBT)

### *1. Information on Ingredients*

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<b>MATERIAL</b>	<b>CAS Number</b>	<b>%</b>
Polybutylene Terephthalate (PBT)	30965-26-5, 26062-94-2	>98
Tetrahydrofuran	109-99-9	<0.5

This product may contain proprietary ingredients.

This is a polymeric material. Any hazardous constituents are wetted by the polymer system, and therefore are unlikely to present exposure under normal conditions of processing, machining, and handling.

### *2. Hazard Identification*

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#### **POLYBUTYLE TEREPHTHALATE**

There are no known effects from exposure to the PBT polymer itself.  
Dust from this product can form an explosive organic dust cloud.  
Released shavings or dust on the floor may present a slipping hazard.  
Molten product in contact with skin can cause serious burns.

#### **POTENTIAL HEALTH EFFECTS**

##### **Immediate Effects**

<b>Inhalation</b>	Dust irritating to the respiratory tract. Overheating in processing may generate hazardous, irritating vapors.
<b>Skin</b>	Polymer particles may cause mechanical irritation. The molten product can cause serious burns.
<b>Eyes</b>	Dust and particles, like other inert materials, are mechanically irritating to eyes

**Ingestion** Low toxicity by this route is expected based on the biological activity of high molecular weight polymers.

**Medical conditions which may be aggravated by exposure:**

No specific information available on the product. Off-gases, which may be released if overheated, may affect those with chronic diseases of the respiratory system.

### 3. *First Aid Measures*

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**INHALATION**

Move to fresh air in case of accidental inhalation of vapors. Seek medical attention immediately if symptoms occur.

**SKIN CONTACT**

The compound is not likely to be hazardous by skin contact, but cleansing the skin after use is advised. If molten polymer gets on skin, cool rapidly with cold water. Do not attempt to peel polymer from skin. Seek medical treatment for thermal burn.

**EYE CONTACT**

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Call a physician if irritation persists.

**INGESTION**

No specific intervention is indicated as compound is not likely to be hazardous by ingestion. If swallowed, do not induce vomiting – seek medical advice.

### 4. *Fire Fighting Measures*

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**FLAMMABLE PROPERTIES**

Flash Point: Not Applicable

*Fire and Explosion Hazards :*

Like most organic materials in powder form, dust generated from this product may form a flammable dust-air mixture. Potential for a dust explosion may exist. Minimize the generation and accumulation of dust. Keep away from sources of ignition.

Hazardous gases/vapors produced in fire are carbon monoxide, carbon dioxide (CO<sub>2</sub>)

**EXTINGUISHING MEDIA**

Water, Foam, Dry Chemical

**FIRE FIGHTING INSTRUCTIONS**

Keep personnel removed and upwind of fire. Wear self-contained breathing apparatus and protective suit.

## 5. Handling and Storage

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### HANDLING

#### Protection – fire and explosion

Do not handle hot or molten material without appropriate protective equipment. Maintain good housekeeping in work areas. Do not exceed recommended process temperatures to minimize release of decomposition products.

### STORAGE

#### Material Storage

Store in a cool dry place. Keep away from heat and sunlight.

## 6. Exposure Controls / Personal Protection

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### ENGINEERING CONTROLS

**VENTILATION:** If hot processing this material, use local and/or general exhaust ventilation to control the concentration of vapors and fumes below exposure limits.

In cutting, grinding, or machining operations with this material, use local exhaust to control the concentration of dust below exposure limits.

### PERSONAL PROTECTIVE EQUIPMENT

#### EYE/FACE PROTECTION

Wear safety glasses. Wear coverall chemical splash goggles and face shield when possibility exists for eye or face contact with molten material. A full face mask positive-pressure air-supplied respirator provides protection from eye irritation.

#### RESPIRATORS

When temperatures exceed 230°C and ventilation is inadequate to maintain concentrations below exposure limits, use a positive-pressure air-supplied respirator. Air-purifying respirators may not provide adequate protection.

During grinding, sawing, routing, drilling or sanding operations use a NIOSH/MSHA approved air-purifying respirator with dust/mist cartridge or canister if airborne particulate concentrations are expected to exceed permissible exposure levels.

#### PROTECTIVE CLOTHING

If there is potential contact with hot/molten materials, wear heat resistant clothing and footwear. Wear leather or cotton gloves when grinding, sawing, routing, drilling or sanding.

### EXPOSURE GUIDELINES

#### EXPOSURE LIMITS

#### TETRAHYDROFURAN

PEL (OSHA):	Particulates, 200 PPM, TWA
	15 mg/m <sup>3</sup> , 8 hr. TWA, total dust
	5 mg/ m <sup>3</sup> , 8 hr. TWA, respirable dust

TETRAHYDROFURAN

TLV (ACGIH):

Particulates, 50 PPM, TWA  
 10 mg/m<sup>3</sup>, 8 hr. TWA, total dust  
 3 mg/ m<sup>3</sup>, 8 hr. TWA, respirable dust  
 Particulates, 100 PPM, TWA

## 7. Physical and Chemical Properties

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### PHYSICAL DATA

Melting Point:	228°C (422°F)
Ignition Temperature:	>420°C (788°F)
Method	ASTM D1929
Solubility in Water:	Insoluble
Odor:	Slight, specific
Color:	Opaque White or Black
Form:	Rod, Plate, Sheet or Tube (stock shape product)
Specific Gravity:	1.38 – 1.55

## 8. Stability and Reactivity

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### CHEMICAL STABILITY

Stable at normal temperatures and storage conditions

### CONDITIONS TO AVOID

Flame. Do not heat above 288°C (550°F). Avoid prolonged exposure at or above 271°C (520°F)

### INCOMPATIBITLY WITH OTHER MATERIALS

Incompatible with strong acids and bases

### HAZARDOUS COMBUSTION OR DECOMPOSITION

Aldehydes, ketones, esters, acids, alcohols, butadiene, tetrahydrofuran, toluene, benzoic acid, terephthalic acid

### POLYMERIZATION

Polymerization will not occur.

## 9. Toxicological Information

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No data is available on the product itself.

## 10. Ecological Information

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### **AQUATIC TOXICITY**

No information is available. Toxicity is expected to be low based on insolubility in water. Do not discharge to streams, ponds, lakes or sewers.

### **ENVIRONMENTAL FATE/INFORMATION**

This material is considered to be non-biodegradable.

## 11. Disposal Considerations

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### **WASTE DISPOSAL**

Preferred options for disposal are (1) recycling, (2) incineration with energy recovery, and (3) landfill. The high fuel value of this product makes option 2 very desirable for material that cannot be recycled, but incinerator must be capable of scrubbing out acidic combustion products. Treatment, storage, transportation, and disposal must be in accordance with applicable federal, state/provincial, and local regulation.

## 12. Transportation Information

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### **SHIPPING INFORMATION**

Not regulated in transportation by DOT/IMO/IATA.

## 13. Regulatory Information

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### **U.S. FEDERAL REGULATIONS**

TSCA Inventory Status:	In compliance with TSCA Inventory requirements for commercial purposes.
SARA 313 Chemicals:	Contains no substances at or above the reporting threshold under Section 313.

### **STATE REGULATIONS (U.S.)**

#### STATE RIGHT-TO-KNOW

No substances on the state hazardous substances list, for the states indicated below, are used in the manufacture of products on this Material Safety Data Sheet, with the exceptions indicated.

Substances on the Pennsylvania Hazardous Substances List present at a concentration of 1% or more (0.01% for special hazardous substances) – None known.

WARNING – Substances known to the state of California to cause cancer, birth defects or other reproductive harm – None known.

**CANADIAN REGULATIONS****WHMIS Classification:**

Not a WHMIS controlled product.

**WHMIS Ingredient Disclosure List:**

This product does not contain substances required to be disclosed according to the Canada WHMIS Ingredient Disclosure List

## 14. *Other Information*

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**ADDITIONAL INFORMATION**

MEDICAL USE: CAUTION – Do not use in medical applications involving permanent implantation in the human body.

*This Material Safety Data Sheet and the information it contains is offered to you in good faith as accurate. We have reviewed any information contained in this data sheet which we received from sources outside our company. We believe this information to be correct but cannot guarantee its accuracy or completeness. Health and safety precaution in this data sheet may not be adequate for all individuals and/or situations. It is the user's responsibility to evaluate and use this product safely and to comply with all applicable laws and regulations. No statement made in the data sheet shall be construed as a permission or recommendation for the use of any product in a manner that may infringe existing patents. No warranty is made, either expressed or implied.*