

SECTION 1: PRODUCT IDENTIFICATION

Product Name	: Polyester Resin
Generic Name	: Organic Resin
Chemical Name	: Polyethylene terephthalate polymer
Trade Names	: Polyester Resin Type (17, 18, 26, 32, 38)
Cas#	: Mixture/None Assigned
Formula	: Polymer
Hazard Label	: PET-001

SECTION 2: INGREDIENTS

Ingredient Name	Cas#	%	Exposure Limits
Polyethylene terephthalate polymer (PET)	25038-50-9	100	5mg/m ³ TWA respirable fraction (osha) 15mg/m ³ TWA total dust (osha) 3mg/m ³ TWA respirable fraction (acgih) 10mg/m ³ TWA total dust (acgih) 1 fiber/cc workplace exposure guide (Teijin Monofilament U.S.)
Heating the resin above 383°F (195°C) may release: Acetaldehyde	75-07-0		200 ppm TWA (osha) 25 ppm Ceiling (acgih)

SECTION 3: HAZARD IDENTIFICATION

EMERGENCY OVERVIEW

APPEARANCE AND ODOR: The different product variants may contain pigments that cause the appearance to range from milky white to black; several levels of translucence or luster are also possible in the form of chips, dice, noodles, or lace.

Under normal conditions of use, this product is not expected to create any unusual emergency hazards.

Polyester can burn if exposed to flame. Molten polymer generates small amounts of volatile degradation products (off-gases), one of which is acetaldehyde. Acetaldehyde vapors form explosive mixtures with air that can spontaneously ignite (auto-ignite) at temperatures above 347° (175°C). Combustion products will be comprised of compounds of carbon, hydrogen, and oxygen. The exact composition will depend on the conditions of combustion.

In the event of fire, use normal fire fighting procedures to prevent inhalation of smoke and gases.

Potential Health Effects

Summary:

Nuisance dust hazards are associated with the dry resin. Heating resin above 383°F (195°C) may cause gas and vapour that are potent irritants.

Acute (Shot-Term) Health Effects:

Dry product is associated with nuisance dust hazards. Acetaldehyde vapour and gas, which are released in small quantities from molten resin, are potent irritants. Irritation to eyes, nose and upper respiratory tract: eye skin burns, dermatitis, conjunctivitis, cough, central nervous system depressant/depression: delayed pulmonary edema.

Chronic (Long-Term) Health Effects:

No long-term health hazards are associated with polyethylene terphthalate polymer (PET). Acetaldehyde is classified a possible human carcinogen.

Target Organs:

Eyes, skin and upper respiratory tract.

Primary Routes of Entry (Exposure):

Eyes, skin and upper respiratory tract.

Symptoms of Overexposure**Inhalation:**

Irritation of the upper respiratory tract, coughing and congestion may occur.

Skin:

Molten resin will cause burns.

Absorption:

Not Applicable

Ingestion:

Not Applicable

Eyes:

Temporary redness and irritation may occur.

SECTION 4: FIRST AND MEASURES**Inhalation:**

Remove to fresh air. Drink water to clear throat, and blow nose to remove dust.

Skin:

If contact with molten resin occurs, the affected area should be flushed with plenty of cold water. Prompt medical attention is advised for burns.

Absorption:

Not applicable

Ingestion:

Not applicable

Eye:

Flush eyes with large amounts of water for 5-15 minutes. If irritation persists, contact a physician.

SECTION 5: FIRE FIGHTING MEASURES**Summary:**

No special procedures are expected to be necessary for this product. Normal fire fighting procedures should be followed to avoid inhalation of smoke and gases.

Unusual Fire/Explosion Hazards:

Polyesters can burn if exposed to flame. Molten polymer generates small amounts of volatile degradation products (off-gases), one of which is acetaldehyde. Acetaldehyde vapors form explosive mixtures with air that can spontaneously ignite (auto-ignite) at temperatures above 347°F (175°C). Combustion products will be comprised of compounds of carbon, hydrogen, and oxygen. The exact composition will depend on the conditions of combustion.

Extinguishing Media:

Class A or Class B fire extinguishers or water fog.

Hazardous Combustion Products:

Acetaldehyde, carbon, hydrogen and oxygen.

Flammable Properties and Explosive Limits:

Flash Point	: Not applicable
FP Test Method	: Not applicable
Flame Classification	: Not determined
Flame Propagation	: Not determined
Lower Explosive Limit (LEL)	: Not applicable
Upper Explosive Limit (UEL)	: Not applicable
Autoignition Temperature	: 175°C/347°F
Decomposition Temperature	: Not applicable

SECTION 6: ACCIDENTAL SPILL/RELEASE MEASURES

Containment Procedures:

Pick up large pieces.

Disposal:

Wastes are not hazardous as defined by the Resource Conservation and Recovery Act (RCRAL40: CFR 261). Comply with state and local regulations for disposal of solid wastes. If you are unsure of the regulations contact your local Public Health Department or the local offices of the Environmental Protection Agency (EPA).

SECTION 7: HANDLING AND STORAGE

Storage Handling:

Customary personal hygiene measures such as washing hands after working with these products are recommended.

Conditions to Avoid:

No special procedures are required for handling or storage of these products.

SECTION 8: EXPOSURE CONTROL/PERSONAL PROTECTION

Summary:

Protective equipment should be provided as necessary to prevent irritation of the throat, eyes and skin and to keep exposures below the applicable exposure limits identified in Section 2.

Eye:

Safety glasses with side shields are recommended.

Skin:

Leather or cotton gloves should be worn to prevent skin contact and irritation.

Respiratory:

Respiratory protection is not required when using this product. However exposure to chemical substances may occur as a result of heating this resin. Use a NIOSH-approved full-face respirator to protect against toxic gasses.

Ventilation:

Local exhaust ventilation should be provided for high temperature processed such as extruding melting or dying. Accumulation of resin on hot machine surfaces should be avoided to minimize the possible generation of volatile decomposition products which may be irritating toxic and/or combustible. General dilution ventilation should be provided as necessary to keep airborne gases and mists below the applicable exposure limits and guidelines. The need for ventilation systems should be evaluated by a professional industrial hygienist, while the design of specific ventilation systems should be conducted by a professional engineer.

Other:

Loose-fitting, long-sleeved clothing should be worn to protect the skin from irritation. Exposed skin areas should be washed with soap and warm water after handling.

Special Considerations for Repair/Maintenance of Contaminated Equipment:

Where possible, vacuum equipment before repair/maintenance to remove excessive dust.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Boiling Point (°F/°C)	: Not determined
Evaporation Rate (Butyl acetate=1)	: Not applicable
Melting Point	: 260°C/500°F
pH	: Not applicable
Saturation in Air (%)	: Not applicable
Solids Content	: Not applicable
Specific Gravity (Water=1)	: 1.33 to 1.45
Vapor Pressure	: Not applicable
Viscosity	: Not applicable
VOCs (g/liter)	: Not applicable
Volatile by Volume (%)	: 0
Water Solubility (%)	: Nil

Appearance and Odor:

The different product variants may contain pigments that cause the appearance to range from milky white to black: several levels of translucence or luster are also possible in the form of chips, dice, noodles or lace.

SECTION 10: STABILITY AND REACTIVITY

Product is Stable

Hazardous polymerization will not occur

Reactivity:

This product is not reactive

Hazardous Decomposition Products:

Acetaldehyde, carbon, hydrogen and oxygen

SECTION 11: TOXICOLOGICAL AND EPIDEMIOLOGICAL DATA

This product has not been tested as a separate entity. Therefore, the hazards must be evaluated on the basis of individual ingredients and those hazards must be assumed to be additive in the absence of complete information. The hazards described in this document have been evaluated on a threshold of 1% for all hazardous ingredients and 0.1% for all carcinogens.

Acute Effects:

Acetaldehyde can cause irritation to eyes, nose and upper respiratory tract: eyes, skin burns; dermatitis; conjunctivitis; cough; central nervous system depressant/depression: delayed pulmonary edema.

Toxicity (LD50):

The toxicity for this product has not been determined.

Chronic Effects:

No long-term health hazards are associated with polyester or polyethylene terephthalate polymer.

References:

Johns Manville, material safety data sheet No. 2203-1.0, P.O. Box 5108. Denver CO 80217-5108, 5/11/00.

Hoechst Celanese material safety data sheet No. L35010, P.O. Box 31414. Charlotte NC 28237-2414, 1/190.

SECTION 12: ECOLOGICAL INFORMATION

Ecotoxicity:

This product has not been tested.

SECTION 13: DISPOSAL CONSIDERATIONS

Summary:

Wastes are not hazardous as defined by the Resource Conservation and Recovery Act (RCRA: 40 CFR 261). Comply with state and local regulations for disposal of solid wastes. If you are unsure of the regulations contact your local Public Health Department, or the local offices of the Environmental Protection Agency (EPA).

SECTION 14: TRANSPORT INFORMATION

Transportation Summary:

This product is not regulated as a hazardous material for transport.

SECTION 15: REGULATORY INFORMATION

U.S. REGULATIONS

Federal Regulations:

The Occupational Safety and Health Administration (OSHA), National Toxicology Program (NTP), International Agency for Research on Cancer (IARC) and American Conference of Governmental Industrial Hygienists (ACGIH) have not classified this product as a carcinogen.

IARC Group 2B Possibly Carcinogenic to Humans: Acetaldehyde.

NTP Suspect Carcinogen: Acetaldehyde.

ACGIH A3 Animal Carcinogen: Acetaldehyde.

The Permissible Exposure Limits (PELs) reported in this MSDS are from the air contaminants standard OSHA issues in 1989. While an appeals court eventually wanted this standard it was without authority to reverse state law under which states, operating with their own OSHA programs has adopted the 1989 standard. Below is a list of states enforcing the 1989 standard. Please also refer to 29 CFR 1919.1000 and to relevant state statutes for other applicable exposure limits.

State Regulation:

Component	Cas#	State(s)
Acetaldehyde	75-07-0	CA, FI, MA, MN, NJ, NY, PA, RJ

California Safe Drinking Water and Toxic Enforcement Act (Proposition 65):

Warning: This product contains the following substances known to the state to cause cancer. Acetaldehyde.

Environmental Regulations:

Component	CAS#	%	SARA 313	SARA 302 TPO(lbs)	CERCLA	CERCLA RO(lbs)
Acetaldehyde	75-07-0		Yes	NA	Yes	1,000

Toxic Substances Control Act Inventory (TSCA 8(b)):

This product and its components are listed.

INTERNATIONAL REGULATIONS

Canada Environmental Protection Act Domestic Substance List (Section 25(1) DSL):

This product and its components are listed.