

MATERIAL SAFETY DATA SHEET

PermaFlex

1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION

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PRODUCT IDENTIFIER: PermaFlex
PRODUCT DESCRIPTION: Thermoplastic polyester elastomer cas (37282-12-5)

PRODUCT USE: May be used to produce molded or extruded articles or as a component of other industrial products.

2. COMPOSITION/INFORMATION ON INGREDIENTS

This product consists primarily of high molecular weight polymers. Substances listed below are reportable hazardous ingredients as defined by the OSHA Hazard Communication Standard. Exposure limits, when available, are also listed.

This product does not contain reportable hazardous ingredients as defined by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Solid pellets with little or no odor. Spilled pellets create slipping hazard. Can burn in a fire creating dense toxic smoke. Molten plastic can cause severe thermal burns. Fumes produced during melt processing may cause eye, skin and respiratory tract irritation. Secondary operations, such as grinding, sanding or sawing, can produce dust which may present an explosion or respiratory hazard.

POTENTIAL HEALTH EFFECTS:

EYE:	Product may cause irritation or injury due to mechanical action. Flush eye with water.
SKIN:	Pellets not likely to cause skin irritation.
INGESTION:	Not acutely toxic.
INHALATION:	Pellet inhalation unlikely due to physical form. When fumes of molten material has been inhaled <ul style="list-style-type: none">- Move person to fresh air as quickly as possible- Rest in half upright position- Loosen clothing- Keep warm

CHRONIC/CARCINOGENICITY

NTP:	Not Tested
OSHA :	Not Regulated
IARC:	Not Listed

MELT PROCESSING HEALTH EFFECTS: Molten plastic can cause severe burns. Processing fumes may cause irritation to the eyes, skin and respiratory tract, and in cases of severe over-exposure, nausea and headache.

Grease-like processing fume condensates on ventilation duct work, molds and other surfaces can cause irritation and injury to skin.

MEDICAL RESTRICTIONS: There are no known human health effects aggravated by exposure to this product. However, certain sensitive individuals and individuals with respiratory impairments may be affected by exposure to components in the processing fumes.

4. FIRST AID MEASURES

EYES: Remove contact lenses at once. Immediately flush eyes well with copious quantities of water or normal saline for at least 20-30 minutes. If irritation persists, seek medical attention.

SKIN: Wash skin thoroughly with soap and water. Seek medical attention if rash or burn occurs.

INGESTION: Not probable. If a large amount is swallowed, seek medical attention.

INHALATION: Not likely to be inhaled due to physical form.

MELT PROCESSING: For molten plastic skin contact, cool rapidly with water and immediately seek medical attention. Do not attempt removal of plastic without medical assistance. Do not use solvent for removal.

For processing fume inhalation irritation, leave contaminated area and breathe fresh air. If coughing, difficult breathing or any other symptoms develop seek medical attention at once, even if symptoms develop at a later time.

For skin contact with fume condensate, immediately wash thoroughly with soap and water. If irritation develops seek medical attention.

5. FIRE FIGHTING MEASURES

FIRE FIGHTING: Approved pressure demand breathing apparatus and protective clothing should be used for all fires. When burning appreciable quantities of carbon monoxide are released with irritating and/or toxic substances. Water spray is the preferred extinguishing medium. This product will melt, but will not be carried on the surface of water.

EXTINGUISHING MEDIA: Water spray and foam, CO₂, ABC fire extinguisher powder.

HAZARDOUS COMBUSTION PRODUCTS: Hazardous combustion products may include intense heat, dense black smoke, carbon monoxide, carbon dioxide and hydrocarbon fragments.

FLASH POINT: Not applicable.

LOWER FLAMMABLE LIMIT: Not Established

UPPER FLAMMABLE LIMIT: Not established.

AUTOIGNITION: 630 C (1166 F), established

CONDITIONS OF FLAMMABILITY: Requires a continuous flame source to ignite.

EXPLOSION DATA:

IMPACT SENSITIVITY: Not sensitive to mechanical impact.

STATIC DISCHARGE: Not sensitive to static discharge.
(See HANDLING AND STORAGE)

6. ACCIDENTAL RELEASE MEASURES

GENERAL: Sweep or gather up material and place in proper container for disposal or recovery. (See DISPOSAL INFORMATION)

7. HANDLING AND STORAGE

HANDLING: Make provisions for sufficient ventilation and local exhaust at vent, nozzle and ejected melt. Dust and processing fumes must be removed by effective exhaust ventilation.

STORAGE: Store in a dry place away from moisture, excessive heat and sources of ignition.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: A continuous supply of fresh air to the workplace together with removal of processing fumes through exhaust systems is recommended. Processing fume condensate may be a fire hazard and toxic, remove periodically from exhaust hoods, duct work and other surfaces using appropriate personal protection. For powders and residual dusts refer to HANDLING AND STORAGE section.

Ventilation requirements must be locally determined to limit exposure to processing fumes in the workplace. Design techniques and guidelines may be found in publications such as:

Industrial Ventilation; available from the American Conference of Governmental Industrial Hygienists, Committee on Industrial Ventilation, P.O. Box 16153, Lansing, MI 48901.

PERSONAL PROTECTION:

EYE/FACE: Wear safety glasses with side shields or chemical goggles. In addition, use full face shield when cleaning processing fume condensates from hoods, ducts and other surfaces. When handling hot melt, heat resistant face shields should be worn.

SKIN: When handling pellets avoid prolonged or repeated contact with skin. When melt processing product wear long pants, long sleeves, well insulated gloves and face shield when applicable. Use appropriate protective clothing, including chemical resistant gloves, to prevent any contact with processing fume condensates.

RESPIRATORY: When processing fumes are not adequately controlled, use respirator approved for protection from organic vapors and acid gases. When dust and powder from secondary operations, such as grinding, sanding or sawing, are not adequately controlled use respirator approved for protection from dust.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	Solid
ODOR AND APPEARANCE:	Pellet with slight odor.
MELTING POINT:	185 - 221°C
DENSITY:	>1.0 G/CM ³
DECOMPOSITION TEMP:	>300°C
FALSHPOINT	>345°C
AUTO INNITION TEMP:	>345°C
WATER SOLUBILITY:	Insoluble
DUST EXPLOSIVE PROPERTIES:	
Lower Explosion Limit (LEL):	<10 g/m ³
Minimum Ignition Temp.:	>350°C
Dust Explosion Class (st)	1

10. STABILITY AND REACTIVITY

STABILITY: Stable under recommended conditions of storage and handling
REACTIVITY: Not reactive under recommended conditions of handling, storage, processing and use.
CONDITIONS TO AVOID: Temperatures > 300°C: and/or long residence times should be avoided since thermal degradation occurs. Avoid strong agents.
HAZARDOUS DECOMPOSITION: Processing fumes evolved at recommended processing conditions may include trace levels of a variety of toxic and/or irritating gases may be evolved.

11. TOXICOLOGICAL INFORMATION

ACUTE TOXICITY: None (LD₅₀ oral rat > 5000 mg/kg)
LOCAL EFFECTS: At processing temperatures some degree of thermal degradation will occur. Although highly dependent on temperature and environmental conditions, traces of a variety of toxic and/or irritating gases may be evolved.

12. ECOLOGICAL INFORMATION

GENERAL: Not expected to present any significant ecological problems.

13. DISPOSAL INFORMATION

RCRA HAZARDOUS WASTE: Product is not a RCRA hazardous waste.
WASTE DISPOSAL: Recycling is encouraged. Landfill or incinerate in accordance with federal, state and local requirements. Collected processing fume condensates and incinerator ash should be tested to determine waste classification.

14. TRANSPORTATION INFORMATION

General precautions: Keep dry during transport
Specific precautions: No special precautions have to be met

15. REGULATORY INFORMATION

TSCA STATUS: This product complies with the Chemical Substance Inventory requirements of the US EPA Toxic Substance Control Act (TSCA)
WHMIS CLASSIFICATION: Not a controlled product

16. OTHER

PREPARED BY: Product Compliance

The above information and recommendations are believed accurate and reliable. Because it is not possible to anticipate all conditions of use additional safety precautions may be required. Rauh Polymers, Inc. makes no warranty, either expresses or implied, including merchantability and fitness.

USER RESPONSIBILITY: Each user should read and understand this information and incorporate it into individual site safety programs in accordance with applicable hazard communication standards and regulations.