

SAFETY DATA SHEET

Laser+[®] (Polyethylene Terephthalate)

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY / UNDERTAKING

1.1 PRODUCT IDENTIFIER

Product Name: Laser+[®] (Polyethylene Terephthalate)

Includes Amorphous and other Resin Products.

1.2 RELEVANT IDENTIFIED USES OF THE SUBSTANCE OR MIXTURE AND USES ADVISED AGAINST

Identified Uses: Polymer for plastics industry.

Uses Advised Against: See attached "Medical Caution Bulletin No. 1", at end of SDS for use restrictions.

1.3 DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

Manufacturer/Supplier:

Alpek Polyester UK Ltd.
Davies Offices
Wilton International Site,
REDCAR, Cleveland
TS19 4XZ, UK

Telephone: +44 1642 451000

E-mail: info.UK@AlpekPolyester.com

Website: www.AlpekPolyester.co.uk

1.4 EMERGENCY TELEPHONE NUMBER

UK National Poisons Emergency:

+44 870 600 6266

London - Emergency 24 Hour Telephone:

+44 (0)20 7188 0100

2. HAZARDS IDENTIFICATION

2.1 CLASSIFICATION OF THE SUBSTANCE OR MIXTURE

CLASSIFICATION ACCORDING TO REGULATION (EC) NO. 1272/2008 (CLP): Non-hazardous.

2.2 LABEL ELEMENTS

None applicable.

2.3 OTHER HAZARDS

- COMBUSTIBLE DUST - WARNING! MAY FORM COMBUSTIBLE DUST CONCENTRATIONS IN AIR.
- CAUTION! MOLTEN MATERIAL WILL PRODUCE THERMAL BURNS. Molten polymer will adhere to skin and can cause severe burns.
- Eye contact with polymer particles may cause mechanical irritation with discomfort, tearing, or blurring of vision.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 SUBSTANCES

Material	CAS Number	%
Polyethylene Terephthalate	24938-04-3 / 25038-59-9	>99
Residual additives, modifiers, colorants/impurities		<1

4. FIRST AID MEASURES

4.1 DESCRIPTION OF FIRST AID MEASURES

INHALATION: No specific intervention is indicated, as the compound is not likely to be hazardous by inhalation. However, if exposed to gases, vapors or fumes from overheating or combustion, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician if necessary.

SKIN CONTACT: The compound is not likely to be hazardous by skin contact, but cleansing the skin after use is advisable. If molten material gets on skin, cool rapidly with cold water. Do not attempt to remove material from skin. Obtain medical treatment for thermal burn.

EYE CONTACT: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If contact with molten material occurs, seek medical attention immediately. If contact with non-molten material occurs, consult physician.

INGESTION: Ingestion is not an expected route of exposure during normal use of the product. If ingested, consult a physician.

4.2 MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

Contact with molten product may cause severe skin and/or eye burns.

4.3 INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED

Contact with molten product. Treat burns as thermal burns. The material will come off as healing occurs; therefore, immediate removal from the skin is not necessary.

5. FIREFIGHTING MEASURES

5.1 EXTINGUISHING MEDIA

SUITABLE EXTINGUISHING MEDIA: Water, Foam, Carbon Dioxide (CO₂), or Dry Chemical.

UNSUITABLE EXTINGUISHING MEDIA: None known.

5.2 SPECIFIC HAZARDS ARISING FROM THE SUBSTANCE OR MIXTURE

HAZARDOUS COMBUSTION PRODUCTS: Carbon dioxide and carbon monoxide.

5.3 ADVICE FOR FIRE-FIGHTERS

SPECIAL FIRE-FIGHTING PROCEDURES: Keep personnel removed and upwind of fire.

SPECIAL PROTECTIVE EQUIPMENT FOR FIRE-FIGHTERS: Wear self-contained breathing apparatus. Wear full protective equipment.

6. ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

The interior of molten masses may remain hot for some time because of the low heat conductivity of the polymer. Use care when handling/disposing of molten masses.

Review Section 5. FIRE FIGHTING MEASURES and Section 7.1 PRECAUTIONS FOR SAFE HANDLING before proceeding with clean-up.

Use appropriate Personal Protective Equipment during clean-up. Thermal protective equipment should be used when handling molten material (See Section 8 for further details).

6.2 ENVIRONMENTAL PRECAUTIONS

Not regarded dangerous to the environment.

6.3 METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP

Sweep up and recover, or mix material with moist absorbent and shovel into suitable chemical waste container.

Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Non-sparking tools should be used.

6.4 REFERENCE TO OTHER SECTIONS

For waste disposal, see Section 13.

7. HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING

- Do not breathe gases, vapors or fumes that may be evolved during processing. Caution and suitable thermal eyes, face, and body personal protective equipment (PPE) must be used if handling hot/molten material. Contact with molten material can cause burns, so unprotected contact with molten material must be avoided.
- Keep spilled pellets swept up from walkways to minimize slipping hazards. Do not walk on spilled pellets.
- Avoid dust generation and prevent dust accumulations to minimize explosion hazard. Physical operations, such as grinding, can create dust and a potential dust explosion hazard. Under these conditions, follow National Fire Protection Association (NFPA) Codes and Standards for handling combustible dusts.
- See Section 8. EXPOSURE CONTROLS/PERSONAL PROTECTION.

7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

Keep container closed. Incompatible or can react with strong oxidizers.

7.3 SPECIFIC END USE(S)

Plastics.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 CONTROL PARAMETERS

EXPOSURE LIMITS:

	Polyethylene Terephthalate	Particles Not Otherwise Specified	Particulates Not Otherwise Regulated (PNOR)
PEL (OSHA):	None Established	-	15 mg/m ³ Total dust 5 mg/m ³ Respirable fraction
TLV (ACGIH):	None Established	3 mg/m ³ Respirable particles 10 mg/m ³ Inhalable particles	-

*All exposure limits presented are 8-hour time weighted average (TWA) limits.

NOTE: During melt phase processing of PET, a small amount of aldehydes are generated. The most well-known is acetaldehyde (CAS 75-07-0), also small amounts of formaldehyde (CAS 50-00-0) are formed. Processors are advised to check exposure to workers and apply current workplace exposure limits to limit exposures to aldehydes. A considered risk assessment will also be necessary when processing molten PET.

8.2 EXPOSURE CONTROLS

APPROPRIATE ENGINEERING CONTROLS:

- Use local ventilation to control gases, vapors and fumes from hot processing.
- Use static controls. Static charges can build up and ignite dust or solvent laden atmospheres. Design precautions into processes that can create dust, such as pneumatic conveying systems, grinding and other physical operations. There is the potential for a dust explosion hazard.
- Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment).

INDIVIDUAL PROTECTION MEASURES, SUCH AS PERSONAL PROTECTIVE EQUIPMENT:

Eye/Face Protection: Wear coverall chemical splash goggles when the possibility exists for eye or face contact from airborne material. Wear a face shield when working with molten material.

Respiratory Protection: Respirators are not needed for normal use. Where airborne concentrations are expected to exceed exposure limits, a NIOSH approved respirator should be selected based on the form and concentration of the contaminant in air and in accordance with the OSHA Respiratory Protection Standard (29 CFR 1910.134).

Protective Clothing: If there is potential for contact with hot/molten material, wear heat-resistant impervious clothing and footwear. Special protective clothing is not needed for normal use. Gloves are recommended as good industrial practice.

Recommended Decontamination Facilities: Eyewash station, washing facilities.

8.3 ENVIRONMENTAL EXPOSURE CONTROLS

No data available.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Solid, clear to grayish white polymer	Flammability Limits (Upper/Lower):	No data available
Size:	~3–4 mm pellet	Density:	~1.4 g/cm ³
Odor:	Odorless	Vapor Pressure:	Not Applicable
Odor Threshold:	No data available	Vapor Density:	Not Applicable
pH:	Not Applicable	Specific Gravity:	>1
Melting Point:	220 – 250 °C	Solubility in Water:	Insoluble
Initial Boiling Point and Boiling Range:	No data available	Partition coefficient (n-octanol/water):	No data available
Flash Point:	Not applicable, combustible solid	Auto-Ignition Temperature:	No data available
Evaporation Rate:	No data available	Decomposition Temperature:	330 °C
Flammability:	No data available	Viscosity:	No data available

9.2 OTHER INFORMATION

No additional information relevant to safe use of this material.

10. STABILITY AND REACTIVITY

10.1 REACTIVITY

None known.

10.2 CHEMICAL STABILITY

Stable at normal conditions. Polymerization will not occur.

10.3 POSSIBILITY OF HAZARDOUS REACTIONS

None known.

10.4 CONDITIONS TO AVOID

Temperatures above 330 °C. Long resident times

10.5 INCOMPATIBLE MATERIALS

Incompatible or can react with strong oxidizers.

10.6 HAZARDOUS DECOMPOSITION PRODUCTS

Thermal decomposition products caused by overheating polymer can include carbon monoxide, carbon dioxide, acetaldehyde and ethylene. Decomposition products (gases, vapors and/or fumes) may cause skin, eye or respiratory tract irritation, and other adverse health effects.

11. TOXICOLOGICAL INFORMATION

INFORMATION ON LIKELY ROUTES OF EXPOSURE:

Polymer dust may be inhaled, and come in contact with skin and eyes. Thermal decomposition products may be inhaled.

SYMPTOMS RELATED TO PHYSICAL, CHEMICAL AND TOXICOLOGICAL CHARACTERISTICS:

- Skin contact with molten material will produce thermal burns.
- Eye contact with polymer dust may cause mechanical irritation with discomfort, tearing, or blurring of vision. Polyethylene terephthalate is a mild eye irritant.
- Eye contact with molten material will produce thermal burns.
- Decomposition products (gases, vapors and/or fumes) may cause skin, eye or respiratory tract irritation, and other adverse health effects.

11.1 INFORMATION ON TOXICOLOGICAL EFFECTS

ACUTE, DELAYED, AND CHRONIC EFFECTS FROM SHORT AND LONG-TERM EXPOSURE:

Polyethylene terephthalate animal testing indicates:

- No carcinogenic, mutagenic, developmental or reproductive effects.
- No adverse effects from short exposures by inhalation and ingestion.

Polyethylene terephthalate patch tests with humans resulted in no skin irritation or sensitization.

NUMERICAL MEASURES OF TOXICITY:

Polyethylene Terephthalate: Oral Approximate Lethal Dose (ALD): >10,000 mg/kg in rats

CARCINOGENICITY:

None of the components present in this material at concentrations equal to or greater than 0.1% are listed by NTP, IARC, OSHA or ACGIH as a carcinogen.

12. ECOLOGICAL INFORMATION

12.1 TOXICITY

No toxicity data is available. The product is insoluble in water.

12.2 PERSISTENCE AND DEGRADABILITY

PET is not categorized as persistent.

12.3 BIOACCUMULATIVE POTENTIAL

PET is not categorized as bioaccumulative.

12.4 MOBILITY IN SOIL

No data available.

12.5 RESULTS OF PBT AND VPVB ASSESSMENT

PET is not categorized as toxic (PBT). PET is not very persistent or very bioaccumulative (vPvB), as defined in REACH (Annex XIII) and is not included in the candidate list of substances of very high concern (SVHC).

12.6 OTHER ADVERSE EFFECTS

No data available.

13. DISPOSAL CONSIDERATIONS

13.1 WASTE TREATMENT METHODS

Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations.

- Waste codes/waste designations according to LoW: proposed waste codes: 12 01 05

14. TRANSPORTATION INFORMATION

SHIPPING INFORMATION:

Transport regulations do not apply. The product is not covered by international regulations on the transport of dangerous goods.

- UN number: Not hazardous for transport
- UN Proper Shipping Name: Not hazardous for transport
- Transport Hazard Class: Not hazardous according the transport rules IMO, ADR/RID, ICAO
- Packaging group: Not hazardous according the transport rules IMO, ADR/RID, ICAO
- Environmental hazards: Not hazardous according the transport rules IMO, ADR/RID, ICAO
- Special precautions for user: Always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.
- Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not classified as dangerous

15. REGULATORY INFORMATION

15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/LEGISLATION SPECIFIC FOR THE SUBSTANCE OR MIXTURE

PET products are classified as nonhazardous under EU regulations (CLP, REACH). Polyethylene terephthalate (PET) is a polymer and is exempted from Registration according to the Article 2 (9) of Regulation (EC) No 1907/2006 REACH.

EC No.: N/A

REACH registration No.: N/A

15.2 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/LEGISLATION SPECIFIC FOR THE SUBSTANCE OR MIXTURE

No Chemical Safety Assessment has been carried out for this product by the supplier as this product is not classified as hazardous according with (EC) 1907/2006.

16. OTHER INFORMATION

The data in this Safety Data Sheet relates only to the specific material designated herein and does not relate to use in combination with any other material or in any process.

Laser+[®] is a registered trademark of Alpek Polyester USA, LLC.

SDS Revision Date: September 1, 2023

End of SDS

MEDICAL CAUTION BULLETIN NO. I

DO NOT USE MATERIALS PRODUCED BY ALPEK POLYESTER BUSINESSES IN MEDICAL APPLICATIONS INVOLVING PERMANENT, BRIEF, OR TEMPORARY IMPLANTATION IN THE HUMAN BODY OR PERMANENT CONTACT WITH INTERNAL BODY FLUIDS OR TISSUES, UNLESS THE MATERIAL HAS BEEN PROVIDED DIRECTLY FROM AN ALPEK POLYESTER BUSINESS UNDER A CONTRACT WHICH EXPRESSLY ACKNOWLEDGES THE CONTEMPLATED USE.

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ALL IMPLANTABLE MEDICAL DEVICES CARRY A RISK OF FAILURE AND ADVERSE CONSEQUENCES.

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Do not use a trademark or licensed trademark from Alpek Polyester or any of its businesses as the descriptive name of an implantable medical device (e.g. do not call it the "Delcron®" prosthesis, or do not call it a "Laser+® device").

End of Bulletin