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 this document.

1.3 DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

Manufacturer/Supplier:

Alpek Polyester Pernambuco S.A.
Rodovia PE 60, KM 10
Zona Industrial 3B
Suape, CEP 55590-000
Ipojuca, Pernambuco – Brazil

Telephone: +55 (19) 3343 5225
E-mail: compet@alpekpolyester.com
Website: www.AlpekPolyester.com

1.4 EMERGENCY TELEPHONE NUMBER

Transport Emergency: CHEMTREC Brazil (Rio De Janeiro) +55 (21) 39581449

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 (CO_2), 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/m³ Total dust 5 mg/m³ Respirable fraction
TLV (ACGIH):	None Established	3 mg/m³ Respirable particles 10 mg/m³ Inhalable particles	-

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

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
Odor:	Odorless	**Vapor Pressure:**	Not Applicable
Odor Threshold:	No data available	**Vapor Density:**	Not Applicable
pH:	Not Applicable	**Specific Gravity:**	>1
Melting Point:	220 – 260 °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.

10.5 INCOMPATIBILE 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

11.1 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.

11.2 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.

11.3 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

No data available.

12.3 BIOACCUMLATIVE POTENTIAL

No data available.

12.4 MOBILITY IN SOIL

No data available.

12.5 RESULTS OF PBT AND VPVB ASSESSMENT

No data available.

12.6 OTHER ADVERSE EFFECTS

No data available.

13. DISPOSAL CONSIDERATIONS

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

14. TRANSPORTATION INFORMATION

SHIPPING INFORMATION
- Not classified for transport in accordance to the Regulation RID/ADR, IMO/IMDG, ICAO/IATA.
- Transport in great quantities according to Annex II from MARPOL 73/78 and IBC Code: Not Applicable.

15. REGULATORY INFORMATION

SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/LEGISLATION SPECIFIC FOR THE SUBSTANCE OR MIXTURE
- European Label Declaration: Handle in accordance to the good practices for industrial health and hygiene.
- European Inventory for Chemical Substances Available in the Market (EINECS): This product is not currently listed.

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.

SDS Revision Date: June 24, 2025

End of SDS

MEDICAL CAUTION BULLETIN NO.1

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.

ALPEK POLYESTER MAKES NO REPRESENTATION, PROMISE, EXPRESS WARRANTY OR IMPLIED WARRANTY CONCERNING THE SUITABILITY OF THESE MATERIALS FOR USE IN THE HUMAN BODY OR IN CONTACT WITH INTERNAL BODY FLUIDS OR TISSUES.

THE CONTENT OF ALPEK POLYESTER MATERIAL IS NOT CERTIFIED FOR IMPLANTS.
Alpek Polyester materials are not designed or manufactured for use in implantation in the human body or in contact with internal body fluids or tissues. Alpek Polyester has not performed clinical testing of these materials for implantation. Alpek Polyester will not provide to customers making implantable devices any notice concerning its materials, as specified under 21 CFR section 820.50, or any other information necessary for medical device use of the materials under any other statue or FDA regulation. Alpek Polyester has neither sought, nor received, approval from the FDA for the use of these materials in implantation in the human body or in contact with internal body fluids or tissues.

ALL IMPLANTABLE MEDICAL DEVICES CARRY A RISK OF FAILURE AND ADVERSE CONSEQUENCES.
The medical judgment of a physician, a medical device seller and the FDA should be relied upon for identification of both harmful consequences and life-saving benefits from an implantation device comprised of specific materials. These benefits and risks can be found in published medical cases performing clinical medical studies of an implantable medical device. Alpek Polyester does not support the use of its products in these applications and cannot weigh the benefits against the risk defined in these articles. Alpek Polyester cannot offer a medical judgment on the safety or efficacy of the use of its materials in such devices.

DO NOT MAKE REFERENCE TO THE ALPEK POLYESTER NAME OR ANY ALPEK POLYESTER BUSINESS TRADEMARK IN ASSOCIATION WITH AN IMPLANTABLE MEDICAL DEVICE.
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