SAFETY DATA SHEET

Terephthalic Acid

1. CHEMICAL PRODUCT/COMPANY IDENTIFICATION

1.1 PRODUCT IDENTIFIER

Product Name: Terephthalic Acid

1.1.1 ADDITIONAL IDENTIFICATION

1,4-Benzenedicarboxylic Acid PTA
TPA

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

Identified Uses: A monomer used in the manufacturing of plastics.
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 PHONE NUMBERS

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.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 SUBSTANCES

Material	CAS Number	%
Terephthalic Acid	100-21-0	>99.8
Acetic Acid	64-19-7	0.15

4. FIRST AID MEASURES

4.1 DESCRIPTION OF FIRST AID MEASURES

INHALATION: If large amounts are inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

SKIN CONTACT: Flush skin with water after excessive contact. Wash contaminated clothing before reuse.

EYE CONTACT: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Consult a physician.

INGESTION: If swallowed, immediately give 2 glasses of water and induce vomiting. Never give anything by mouth to an unconscious person. Call a physician.

4.2 MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED
None expected during normal industrial or commercial handling.

4.3 INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED
None expected during normal industrial or commercial handling.

5. FIRE FIGHTING MEASURES

5.1 EXTINGUISHING MEDIA
SUITABLE EXTINGUISHING MEDIA: Water, Water Spray, 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.

Dust forms explosive mixture with air. High-voltage static electricity buildup is possible when significant quantities of dust are present in the air. This can be a potential source of ignition.

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
Review Section 5. FIRE FIGHTING MEASURES and Section 7. PRECAUTIONS FOR SAFE HANDLING before proceeding with clean-up. Use appropriate Personal Protective Equipment during clean-up.

6.2 ENVIRONMENTAL PRECAUTIONS
Not regarded dangerous to the environment.

6.3 METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP
Collect spilled material and transfer it to suitable containers for disposal as reprocessing material or waste. Use caution as spills can be slippery.

Remove source of heat, sparks, flame, impact, friction or electricity. Recover undamaged and minimally contaminated material for reuse and reclamation.

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

- Avoid breathing dust and avoid contact with eyes, skin, or clothing.
- Vapor space above TPA may contain acetic acid in concentrations above its exposure limits.
- Wash thoroughly after handling.
- Keep away from heat, sparks and flames.
- Close container after each use.
- 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.

7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATABILITIES

Do not mix with strong oxidants. Store in a well-ventilated place. Keep container tightly closed.

7.3 SPECIFIC END USE(S)

Polymer manufacturing.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 CONTROL PARAMETERS

EXPOSURE LIMITS:

	Acetic Acid	Terephthalic Acid	Particulates Not Otherwise Regulated (PNOR)
PEL (OSHA):	10 ppm	-	15 mg/m³ Total dust 5 mg/m³ Respirable fraction
TLV (ACGIH):	10 ppm 15 ppm (STEL)	10 mg/m³	-

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

8.2 EXPOSURE CONTROLS

APPROPRIATE ENGINEERING CONTROLS:

- Keep container tightly closed.
- Use sufficient ventilation to keep employee exposure below recommended exposure limits.
- 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).
- 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.

INDIVIDUAL PROTECTION MEASURES, SUCH AS PERSONAL PROTECTIVE EQUIPMENT:

Eye/Face Protection: Wear safety glasses. Wear coverall chemical splash goggles and face shield when the possibility exists for eye or face contact from airborne material.

Respiratory Protection: 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: Wear impervious clothing, such as gloves, apron, boots, or whole bodysuit made from butyl rubber, as appropriate.

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:	White, powder	**Flammability Limits (Upper/Lower):**	No data available
Odor:	Vinegar	**Vapor Pressure:**	<0.01 mm Hg @ 20 °C
Odor Threshold:	No data available	**Vapor Density:**	No data available
pH:	Not Applicable	**Specific Gravity:**	1.51
Melting Point:	>300 °C	**Solubility in Water:**	Negligible
Initial Boiling Point and Boiling Range:	Sublimes above 300 °C	**Partition coefficient (n-octanol/water):**	No data available
Flash Point:	260 °C; Method - OC	**Auto-Ignition Temperature:**	No data available
Evaporation Rate:	No data available	**Decomposition Temperature:**	300 °C
Flammability:	No data available	**Viscosity:**	No data available

9.2 OTHER INFORMATION
There is no relevant information.

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 300 °C. Decomposes with heat.

10.5 INCOMPATIBILE MATERIALS
Incompatible with strong oxidants.

10.6 HAZARDOUS DECOMPOSITION PRODUCTS
Not known.

11. TOXICOLOGICAL INFORMATION

11.1 INFORMATION ON LIKELY ROUTES OF EXPOSURE
Dust may be inhaled, and come in contact with skin and eyes.

11.2 SYMPTOMS RELATED TO PHYSICAL, CHEMICAL AND TOXICOLOGICAL CHARACTERISTICS
- Eye contact may cause slight irritation, with discomfort, tearing, or blurring of vision.
- Inhalation may cause irritation of mucosal surfaces.

11.3 INFORMATION ON TOXICOLOGICAL EFFECTS

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

- High or prolonged oral exposure may result in kidney changes, blood in the urine or bladder stones.
- Based on animal studies, high or prolonged oral exposure may result in kidney changes, blood in the urine or bladder stones.
- The compound is a slight eye irritant, but is neither a skin irritant nor a skin sensitizer in animals.
- Toxic effects described in animals from exposure by ingestion include bladder hemorrhage and stomach ulceration. Toxicity described for repeated doses include bladder calculi (stones), blood in the urine, and decreased weight gain.
- Animal testing indicates that this compound does not have reproductive effects. Limited information from reproduction studies does not indicate that terephthalic acid is a unique hazard to the conceptus.
- Toxicity described in animals administered the compound orally in the diet include bladder stones and alterations of the urinary tract with tumors and squamous cell carcinomas, decreased growth rate and altered relative organ weights.

NUMERICAL MEASURES OF TOXICITY:

- Oral LD_{50}: 18,800 mg/kg in rats
- Terephthalic acid is a carcinogen in rats when administered in large oral doses (>1,000 mg/kg/day). The compound does not produce genetic damage in bacterial cell cultures.

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

12. ECOLOGICAL INFORMATION

12.1 TOXICITY

- Solid with low volatility.
- The substance is essentially insoluble in water. It has low toxicity to aquatic organisms:
  - LC_{50} (rainbow trout) (96 hour) (semi-static) 798-1640 mg/l
  - EC_{50} (Daphnia magna) (48 hour) > 980mg/l

12.2 PERSISTENCE AND DEGRADABILITY

- The substance is substantially biodegradable.
- There is evidence of fast degradability in water.
- Ready biodegradation:> 70%.
- Inherent biodegradation:> 90%.

12.3 BIOACCUMLATIVE POTENTIAL

The substance has low bioaccumulation potential.

12.4 MOBILITY IN SOIL

There is no relevant information.

12.5 RESULTS OF PBT AND VPVB ASSESSMENT

No data available.

12.5 OTHER ADVERSE EFFECTS

There is no relevant information.

13. DISPOSAL CONSIDERATIONS

WASTE TREATMENT METHODS
Bury in a permitted landfill or incinerate under approved controlled conditions. Disposal should be in accordance with local, state or country laws.

14. TRANSPORTATION INFORMATION

SHIPPING INFORMATION

- Not classified for transport in agreement with regulation RID/ADR, IMO/IMDG, ICAO/IATA.
- Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code: not applicable.

15. REGULATORY INFORMATION

SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/LEGISLATION SPECIFIC FOR THE SUBSTANCE OR MIXTURE
No data available.

16. ADDITIONAL INFORMATION

This SDS was prepared in accordance with ABNT 14725. 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. I

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End of Bulletin