SAFETY DATA SHEET

Terephthalic Acid (All Grades)

Revision Date: November 15, 2023 / Revision 11

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

1.1 PRODUCT IDENTIFIER

Product Name: Terephthalic Acid (All Grades)
EC/List Number: 202-830-0
Additional Identification: 1,4-Benzenedicarboxylic Acid, PTA, TPA

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

Identified Uses: Monomer used in the manufacturing of plastics.
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:
Tereftalatos Mexicanos S.A. de C.V / AKRA POLYESTER S.A de C.V
Avenida Ricardo Margain 444
Valle del Campestre
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Only Representative in Europe:
DAK Americas Exterior, S.L.U.
Calle Calendula 95, Edificio M, Oficina 5
Alcobendas, Madrid, Spain
VAT ID ESB85468601

Telephone: +34916506528 (Francisco Vanty Treviño G.)
E-Mail: ftrevino@alfa.com.mx
Reference #: Akra Poliester 01-2119485970-27-0012;
Tereftalatos Mexicanos 01-2119485970-27-0011

1.4 EMERGENCY TELEPHONE NUMBER

For emergency transportation information, call SETIQ (ANIQ) at 01-800-00214-00.

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	%
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. FIREFIGHTING 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.

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. 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.

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 as dangerous to the environment. Review Section 12, ECOLOGICAL INFORMATION for additional details.

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

- 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. Follow National Fire Protection Association (NFPA) Codes and Standards for handling combustible dusts.
- See Section 8 for Personal Protective Equipment.

7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

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

7.3 SPECIFIC END USE(S)

Monomer used in the manufacturing of plastics.

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: Respirators are not needed for normal use. If engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (in countries where exposure limits have not been established), an approved respirator must be worn. In the United States of America, if respirators are used, a program should be instituted to assure compliance 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:**	Not Applicable
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
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 300 °C. Decomposes with heat.

10.5 INCOMPATIBILE MATERIALS
Incompatible with strong oxidants.

10.6 HAZARDOUS DECOMPOSITION PRODUCTS
Not known.

11. TOXICOLOGICAL INFORMATION

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

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.

11.1 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 NTP, IARC, 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.

12.6 OTHER ADVERSE EFFECTS

There is no relevant information.

13. DISPOSAL CONSIDERATIONS

13.1 WASTE TREATMENT METHODS

Treatment, storage, transportation and disposal must be in accordance with applicable Federal, State, and local regulations. Recover non-usable free liquid and dispose of in an approved and permitted incinerator. Recover contaminated liquid and dispose of in an approved and permitted biological treatment system. Remove non-usable solid material and/or contaminated soil, for disposal in an approved and permitted landfill.

14. TRANSPORTATION INFORMATION

SHIPPING INFORMATION:

Shipping Containers

Tank Cars: 190,000 lbs. net

Tank Trucks: 50,000 lbs. net

Terephthalic acid is not regulated as a hazardous material by DOT, IMO or IATA.

15. REGULATORY INFORMATION

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

U.S. FEDERAL REGULATIONS:

- TSCA Inventory Status: Reported/Included.
- Title III Hazard Classification Sections 311, 312
  - Acute: Yes
  - Chronic: Yes
  - Fire: No
  - Reactivity: No
  - Pressure: No
- Lists
  - SARA Extremely Hazardous Substance: No
  - CERCLA Hazardous Material: No
  - SARA Toxic Chemical: No

INTERNATIONAL REGULATIONS:

Handle in accordance with applicable Federal, State and local regulations.

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.

Abbreviations:

ACGIH – American Conference of Governmental Industrial Hygienists
ANIQ – MX National Association of Chemical Industries
CERLA – U.S. Comprehensive Environmental Response and Liabilities Act
EC_{50} – Median Effective Concentration
IARC – International Agency on Research of Cancer
LC_{50} – Median Lethal Concentration
LD_{50} – Median Lethal Dose
NTP – U.S. National Toxicological Program
OSHA – U.S. Occupational Safety and Health Act
PTA – Purified Terephthalic Acid
SARA – U.S. Superfund Amendments and Reauthorization Act
SETIQ – MX Emergency Transportation System for the Chemical Industry
TPA – Terephthalic Acid
TSCA – U.S. Toxic Substance Control Act

SDS Revision Number: 11.

SDS Revision Summary: SDS layout updated entirely. Content throughout updated. Recommend reviewing SDS in its entirety.

SDS Revision Date: November 15, 2023

End of SDS

MEDICAL CAUTION BULLETIN NO.1

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End of Bulletin