

**PRODUCT:** **PTA – PURIFIED TEREPHTHALIC ACID**  
 In accordance with Regulations (CE) 1907/2006, (CE) 1272/2008 and (EU) 453/2010 (Annex I)

**DATA:** Dec/2022      **SDS N°:** DC-COR-SGI-9-011      **VERSION:** 001

## SECTION I – SUBSTANCE AND COMPANY IDENTIFICATION

**SUBSTANCE IDENTIFICATION:** PURIFIED TEREPHTHALIC ACID – PTA

**PRODUCT IDENTIFICATION (CHEMICAL NAME):** 1-4 benzene dicarboxylic acid

**CAS #:** 100-21-0

**REACH #:** 2119485970-27-0058

**PRODUCT'S MAIN APPLICATIONS:** Main raw material for the manufacturing of PET polymer (poly ethylene terephthalate).

**MANUFACTURER / SUPPLIER:** **ALPEK POLYESTER PERNAMBUCO S.A.**  
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## SECTION II - IDENTIFICATION OF RISKS

**SUBSTANCE CLASSIFICATION IN ACCORDANCE WITH REGULATION (CE) No. 1272/2008:**

RISK CLASS	CLASS CODE AND RISK CATEGORY	RISK STATEMENT	RISK WARNING
Not Classified	Not Classified	Not Classified	Not Classified

**CLASSIFICATION IN ACCORDANCE WITH THE DIRECTIVE 67/548/CEE:**

CLASSIFICATION	CLASSIFICATION	CLASSIFICATION
Not Classified	Not Classified	Not Classified

**MAIN ADVERSE EFFECTS:**

**PHYSICAL-CHEMICAL EFFECTS:** No adverse physical-chemical effects are expected under normal conditions of use.

**INGESTION WITH HEALTH EFFECTS:** Unknown.

**INHALATION EXPOSURE:** Slight irritant.

**SKIN CONTACT:** May cause irritation to skin.

**EYE CONTACT:** May cause irritation to eyes.

**SENSITIZATION:** The substance might cause allergic skin reactions.

**ENVIRONMENTAL EFFECTS:** No adverse environmental effects are expected under normal

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condition of use.

**LABELLING IN ACCORDANCE WITH REGULATION No. 1272/2008/CE:**

**PICTOGRAM(S):**



**WARNING:** Not provided.

**RISK STATEMENTS:** Not provided.

**OTHER RISKS (WHICH DO NOT RESULT IN CLASSIFICATION):**

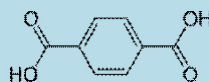
**CHEMICAL-PHYSICAL RISKS:** The substance is organic, it may form explosive mixtures with air under certain conditions (e.g., temperature, pressure, particle size of dusts, humidity, concentration of combusive agents).

## SECTION III - COMPOSITION/INGREDIENTS INFORMATION

**COMPONENT NAME:** PURIFIED TEREPHTHALIC ACID – PTA

**CONCENTRATION:** 99,9 %

**STRUCTURAL FORMULA:**



**CHEMICAL FORMULA:** C8H6O4

**MOLECULAR WEIGHT:** 166.1308 [g/mol]

**SUBSTANCE WITH COMMUNITY OEL:** NO

**CAS NAME:** Terephthalic acid

**CAS NUMBER:** 25038-59-9

**IUPAC NAME:** Terephthalic acid

**CE NUMBER:** 202-830-0

**IMPURITY/IMPURITIES (IF CLASSIFIED):** There are no impurities.

**ADDITIVES/ADDITIVES (IF CLASSIFIED):** There are no additives.

## SECTION IV - FIRST AID MEASURES

**DESCRIPTION OF FIRST AID MEASURES:**

**EYE CONTACT** Wash immediately with large amounts of water or normal saline. Get medical advice immediately.

**SKIN CONTACT** Remove contaminated clothes and shoes immediately. Wash affected area with large amount

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<b>INGESTION</b>	of water until no evidence of substance remains. Get medical advice immediately.
<b>INHALATION</b>	If the substance is ingested, do not induce vomiting. Get medical advice immediately.
<b>MOST IMPORTANT SYMPTOMS AND EFFECTS (ACUTE AND LATE):</b>	
<b>ACUTE AND LATE EFFECTS</b>	Ingestion: not known. Inhalation exposure: slight irritant. Contact with skin: redness. Contact with eyes: burning sensation, redness of conjunctivae. Sensitization: the substance may cause allergic skin reactions.
<b>INDICATION OF ANY IMMEDIATE MEDICAL CARE AND SPECIAL TREATMENT REQUIRED:</b>	
<b>MEDICAL MONITORING</b>	Not provided.
<b>ANTIDOTES, IF SUCH ARE KNOWN</b>	Unknown
<b>CONTRAINDICATIONS</b>	Unknown
<b>IMMEDIATE TREATMENT IN THE WORK SITE</b>	Not provided.

## SECTION V - FIRE-FIGHTING MEASURES

<b>APPROPRIATE FIRE EXTINGUISHING METHODS:</b>	The material can form flammable dust clouds in the air. Combustion will produce toxic and irritant vapors. Use dry chemical powder, carbon dioxide, foam or water in mist form. Cool or remove containers exposed. to fire.
<b>NON-APPROPRIATE FIRE EXTINGUISHING METHODS:</b>	Do not use water jet.
<b>COMBUSTION SUBSTANCES:</b>	Toxic and irritating vapors.
<b>SPECIAL PROCEDURES:</b>	There is no relevant information
<b>FIREMAN PROTECTION:</b>	Autonomous breathing equipment and appropriated protective clothes should be used when extinguishing fire.

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## SECTION VI - MEASURES FOR ACCIDENTAL SPILL

<b>PERSONAL PRECAUTIONS:</b>	Avoid contact with clothing and skin (Wear waterproof boots, nitrile rubber gloves, wide vision glasses (TYVEK coveralls and respiratory protection).
<b>ENVIRONMENTAL PRECAUTIONS:</b>	Do not throw water. Collect spillage, transfer to a suitable container and remove the contaminated soil to another container independent. The final disposal of this product should be monitored as well, following the law.
<b>CLEANING METHODS:</b>	Collect the spilled material and transfer it into suitable containers for disposal as waste or reprocessing material.  Caution, because spills may be slippery.

## SECTION VII - HANDLING AND CONSERVATION

<b>PRECAUTIONS FOR SAFE HANDLING:</b>	
<b>RECOMMENDATIONS FOR HANDLING</b>	<p>Handle away from sparkles and flames – sources of ignition</p> <p>Handle in a well ventilated place</p> <p>Avoid contact with incompatible materials</p> <p>Wear suitable Personal Protection Equipment (see section 8)</p> <p>Keep the substance away from drains, surface or ground waters</p>
<b>RECOMMENDATIONS FOR PERSONAL HYGIENE</b>	<p>Do not eat, drink and smoke in the working areas</p> <p>Wash hands after handling the substance</p> <p>Remove contaminated clothing and protective equipment before entering eating areas.</p>
<b>CONDITION FOR THE SAFE CONSERVATION INCLUDING ANY INCOMPABILITIES:</b>	
The substance is organic, it may form explosive mixtures with air under certain conditions.	
<b>RISK MANAGEMENT MEASURES RELATED TO:</b>	
<b>POTENTIAL SOURCES OF IGNITION</b>	As with all dry powders it is advisable to ground mechanical equipment in contact with dry material to dissipate the potential build up of static electricity.
<b>ENVIRONMENTAL CONDITIONS</b>	Do not expose to high temperatures and heat sources.
<b>ENVIRONMENTAL PRESSURE</b>	It is not expected any procedure of restriction.
<b>TEMPERATURE</b>	Store in original container tightly closed in a cool (15 - 25°C), dry place
<b>SUNLIGHT</b>	Do not expose to the direct light of the sun.

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<b>HUMIDITY</b>	Do not store in a damp place.
<b>VIBRATION</b>	It is not expected any procedure of restriction.
The adoption of the Risk Management procedure related to the physical and chemical properties is also based on the local Risk Assessment done by the employer in its workplace conditions (use of the substance), particularly when a standardized exposure scenario is not available.	
<b>MATERIAL TO MAINTAIN THE INTEGRITY OF THE SUBSTANCE:</b>	
<b>STABILIZERS</b>	Use of stabilizers is not expected.
<b>ANTIOXIDANTS</b>	Use of antioxidants is not expected.
<b>OTHER RECOMMENDATIONS:</b>	
<b>REQUIREMENTS REGARDING VENTILATION</b>	Requested on the base of the storage of the Substance.
<b>WAREHOUSE SPECIFIC PROJECT</b>	Not requested on the based of the classification.
<b>PACKAGING COMPATIBILITY</b>	See also section X.
<b>SPECIFIC FINAL USE(S):</b>	There is no specific recommendations.

## SECTION VIII - EXPOSURE CONTROLS/PERSONAL PROTECTION

<b>CONTROL PARAMETERS:</b>	
<b>EUROPEAN / NATIONAL WORK EXPOSURE LIMITS</b>	Not established
<b>OTHER EUROPEAN / NATIONAL WORK EXPOSURE LIMITS</b>	Not established
<b>EUROPEAN (BEI) / NATIONAL BIOLOGICAL LIMITS</b>	Not established
<b>OTHER EUROPEAN (BEI) / NATIONAL BIOLOGICAL LIMITS</b>	Not established
<b>RECOMMENDED MONITORING PROCEDURES</b>	The measurements of the substance/s in the workplace be carried out in accordance with standardized method described by EN guidance.
<b>DNEL VALUES (acronym in English, level derived from exposure without effects)</b>	<p><b>DNELs for workers</b></p> <ul style="list-style-type: none"> <li>– Dermal: 67 mg/kg bw/d. (Exposure pattern: longterm, sy effects);</li> <li>– Inhalation: 23 mg/m<sup>3</sup> (Exposure pattern: long-term, sy effects).</li> </ul> <p><b>DNELs for general population</b></p> <ul style="list-style-type: none"> <li>– Dermal: 33 mg/kg bw/d. (Exposure pattern: longterm, effects.</li> <li>– Inhalation: 5.8 mg/m<sup>3</sup> (Exposure pattern: long-term, sy effects).</li> </ul>

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**PNEC VALUES (acronym in English, probable concentration without effects)**

– Oral: 3.3 mg/kg bw/d (Exposure pattern: long-term, sy effects).

**PNEC water**

- PNEC fresh water (mg/l): 0.38 mg/L.
- PNEC marine water (mg/l): 0.038 mg/L.
- PNEC aqua, intermittent releases (mg/l): 1.9 mg/L.

**EXPOSURE CONTROLS:**

**PNEC sediment**

- PNEC fresh water: 0.52 mg/kg sediment dw.
- PNEC marine water: 0.052 mg/kg sediment dw.

**PNEC soil**

- PNEC: 0.71 mg/kg soil dw.

**PNEC for sewage treatment plant**

- PNEC STP: 50 mg/L.

**PROPER ENGINEERING CONTROLS:**

The adoption of the most appropriate engineering controls is also based on the local Risk Assessment done by the employer in its workplace conditions (use of the substance), particularly when a standardized exposure scenario is not available.

**Personal protective measures, for examples. Personal Protective Equipment (PPE):**

If the results of the risk evaluation done in accordance with Directive 98/24/EEC showed that the collective and general risk management measures are not sufficient to reduce the risks and, if the exposure to the substance cannot be reduce by other containment means, appropriate PPE must be adopted in compliance with technical EN guidance indication.

**FACE AND EYE PROTECTION**

Safety goggles as for EN 166; facial shield

**SKIN PROTECTION / HAND PROTECTION**

Gloves resistant to chemical agents as for the EN 374, parts 1, 2 e 3 and the European Directive 89/89/CEE.

The gloves material must be waterproof and stable against the substance content.

Select the glove material on the basis of the type of the material, typical or minimal breakdown times, permeability ranges, and thickness.

Material: nitrile (nitrilic rubber), ipoallergenic

Thickness: not inferior to 0.12 mm

**OTHERS - BODY PROTECTION**

Select the suitable protective equipment based on the activity of use and possible exposure. Wear gauntlets, boots, bodysuit and other devices in accordance with EN 14605 in case of sketches or EN 13982 in case of powders.

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## BREATHING PROTECTION

When the risk evaluation foresees the need to use respirator devices with assisted ventilation, use a powder filter like P1, P2 and P3. Use only devices approved by the Competent Authorities such as NIOSH (USA) and CEN (EU).

For your information powders are divide in three categories:

- 2a (inert powder with TLV= 10 mg/m3),
- 2b (hazards powders with TLV = 0,1-10 mg/m3 (excluding asbestos),
- 2c (toxic powders with TLV < 0,1 mg/m3 (asbestos, carcinogens, bacteria, viruses, enzymes, spores, etc).

Cat. 2a: P1 filter, Cat. 2b: P2 filter, Cat.2c: P3 filter.

## THERMAL RISKS

Not foreseen in the standard use.

Assess possible Personal Protection Equipment on the basis of specific uses of the substance.

## ENVIRONMENTAL EXPOSURE CONTROLS:

Environmental controls are not needed.

## SECTION IX - PHYSICAL AND CHEMICAL PROPERTIES

<b>PHYSICAL CONDITION:</b>	Free flowing powder.
<b>COLOUR:</b>	White
<b>ODOR:</b>	Inodorous
<b>pH:</b>	There is no relevant information.
<b>BOILING POINT:</b>	There is no relevant information.
<b>FUSION POINT:</b>	425°C in sealed tube.
<b>IGNITION POINT:</b>	There is no relevant information.
<b>AUTO-IGNITION TEMPERATURE:</b>	There is no relevant information.
<b>EXPLOSIVE PROPERTIES:</b>	<ul style="list-style-type: none"> <li>– Lower flammable limit: 40% v/v</li> <li>– Maximum pressure increase rate: 45500kPa/s.</li> <li>– Explosion maximum pressure: 790kPa.</li> </ul>
<b>STEAM PRESSURE:</b>	0.00000003 Pa at 10°C.
<b>DENSITY:</b>	1,5 g/ml
<b>SOLUBILITY IN WATER:</b>	Insoluble (15 mg/l at 10 °C)
<b>VOLATILE MATERIAL (%):</b>	There is no relevant information.
<b>VOLATILE ORGANIC COMPOUNDS:</b>	There is no relevant information.

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**OTHER INFORMATION:**

- Distribution coefficient: log P n-octane/water: 1.2 -2
- Powder flammable class: A
- Minimum ignition temperature (°C): 500
- Minimum ignition energy (mJ): 50
- Maximum density (g/ml): 1.12
- Temperature of Sublimation: > 300 °C

## SECTION X - STABILITY AND REACTIVITY

**CHEMICAL STABILITY:** Stable product.

**POLYMERIZATION RISKS:** There is no relevant information.

**CONDITIONS TO AVOID:** Keep away from strong oxidant agentes.

**INCOMPATIBLE MATERIALS OR SUBSTANCES:** There is no relevant information.

**HARMFUL DECOMPOSITION PRODUCTS:** The incomplete combustion may produce carbon monoxide and other harmful products.

## SECTION XI - TOXICOLOGICAL INFORMATION

**EYE CONTACT:** Low irritation to rabbit eyes. It may cause physical abrasion in contact with eyes. Permanent damage is unlikely.

**SKIN CONTACT:** Skin contact: non-irritating after repeated application on rat's skin. It is unlikely to cause irritation to human skin. It may cause physical abrasion in contact with the skin. It is unlikely to be hazardous by skin absorption.

**INHALATION:** High dust concentrations may be irritating to the Upper respiratory tract.

**INGESTION:** Low oral toxicity.

**CHRONIC EFFECTS ON HUMANS:** Inhalation studies in animals have shown that repeated exposures produce no significant effects. Terephthalic acid when administrated in high levels to rats has been associated to bladder tumors. No effect was observed below a level of 1% in the diet. Additional research demonstrated that the tumors are directly related to bladder stone formation, once it is caused by urine super saturation in rats fed with high doses of terephthalic acid. This effect is unlikely to happen in humans because of the access and levels used are inadequate for the foreseeable use conditions. There is no mutagenic evidence or clastogenic potential.



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## SECTION XII - ECOLOGICAL INFORMATION

### ECOTOXICIDADE

Terephthalic acid is relatively non-toxic to aquatic organisms. The results of the acute toxicity tests for terephthalic acid and its sodium salt for various freshwater species are shown below:

Water Flea (daphnia magna)	48h	EC50	982 mg/l
Golden Fish orfe (leuciscus idus melanotus)	96h	LC50	922 mg/l
Green Seaweed (scenedesmus subspicatus)	96h	No Effect	402 mg/l
Microbes (activated slime)	3h	EC50	1390 mg/l

The tests above were conducted in accordance with relevant OECD protocols and in accordance with good laboratory practice (LPG). Terephthalic acid has been shown to biodegrade in water under various test methods and in the soil suspension inoculum, according to published reports. In a modified test (OECD guideline 301b), more than 60% of the theoretical CO<sub>2</sub> was generated in 5 days, and more than 80% of theoretical CO<sub>2</sub> was generated in 14 days, in two concentrations of terephthalic acid, meeting the criteria of "readily biodegradable".

### BIOACCUMULATION:

The substance has low potential for bioaccumulation.

### OTHER HARMFUL EFFECTS:

There is no relevant information.

## SECTION XIII – FINAL DISPOSAL INFORMATION

### TREATMENT METHODS AND PRODUCT FINAL DISPOSITION, RESIDUE AND USED PACKAGING

Terephthalic acid and packaging are not considered solid urban or hazardous waste, therefore, considered special waste, handling and disposal must comply with the provisions of the competent authorities. Terephthalic acid can be recycled if it is not contaminated.

## SECTION XIV - TRANSPORT INFORMATION

Product classified as not dangerous for the environment.

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

## SECTION XV - REGULATORY INFORMATION

All other information about the regulation are recorded if not presented in other sections/subsection of the Safety Data Sheet.

### SPECIFIC SAFETY, HEALTH, AND ENVIRONMENTAL REGULATIONS/LEGISLATION FOR THE SUBSTANCE

Council Directive 89/391/EEC of 12 June 1989 on the introduction of measures to encourage improvements in the safety and health of workers at work (Official Journal L 183, 29/06/1989 P. 0001

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0008) and following amendment and National reinforcements.

Council Directive 89/686/EEC of 21 December 1989 on the approximation of the laws of the Member States relating to the personal protective equipment.

Council Directive 98/24/EC of 7 April 1998 on the protection of the health and safety of workers from the risks related to chemical agents at work (fourteenth individual Directive within the meaning of Article 16(1) of Directive 89/391/EEC) Official Journal L 131, 05/05/1998 P. 0011 0023

## SECTION XVI - OTHER INFORMATION

**BIBLIOGRAPHIC SOURCES:** Terephtalic acid Chemical Safety Report ChemIdplus Lite stneasy.fiz-karlsruhe.de pubchem.ncbi.nlm.

### ABBREVIATIONS:

- ACGIH: American Conference of Governmental Industrial Hygienists
- ADR: Agreement concerning the carriage of dangerous goods by Road
- BCF: Bioaccumulative factor
- BEI: Biological Exposure Indices (Indici di esposizione biologica)
- CAS: Chemical Abstract Service (division of the American Chemical Society)
- CLP: Classification, Labelling and Packaging
- CMR: Carcinogens, Mutagens, Toxic for reproduction substances
- EINECS: European Inventory of existing Commercial Substances
- EPA: US Environmental Protection Agency
- GHS: Globally Harmonised System
- IARC: International Agency for Research on Cancer
- IATA: International Air Transport Association Code
- IMDG: International Maritime Dangerous Goods Code
- IUPAC: International Union of Pure and Applied Chemistry
- LOEL: Lowest Observed Effect Level
- N.A.: Not Applicable
- N.A.: Not Available
- NOAEL: No Observed Adverse Effect Level)
- NTP: National Toxicology Program
- OEL: Occupational Exposure Limit
- OSHA: Occupational Safety and Health Administration
- PPE: Personal protective Equipment
- PBT: Persistent, Bioaccumulative and Toxic substances

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- RID: Regulation concerning the International carriage of Dangerous goods by rail
- TLV/TWA: Threshold Limit Value/Threshold Weighted Average
- vPvB: very Persistent, very Bioaccumulative

*ALL INFORMATION CONTAINED HEREIN ATTEMPT TO DESCRIBE THE PRODUCT FROM THE SAFETY REQUIREMENTS POINT OF VIEW ACCORDING TO MSDS (ACRONYM IN ENGLISH FOR MATERIAL SAFETY DATA SHEETS) FROM THE MANUFACTURER.*