Designation: ~~D8062 – 21~~ D8062 – 22

Standard Specification for Purified Terephthalic Acid (PTA) with Low *p*-Toluic Acid[1]

This standard is issued under the fixed designation D8062; the number immediately following the designation indicates the year of original adoption or, in the case of revision, the year of last revision. A number in parentheses indicates the year of last reapproval. A superscript epsilon (ε) indicates an editorial change since the last revision or reapproval.

1. ~~Scope~~ Scope*

1.1 This specification covers purified terephthalic acid (PTA) for use in the production of polyesters for superfine denier fiber.

1.2 The following applies to all specified limits in this specification: for purposes of determining conformance with this specification, an observed value or a calculated value shall be rounded off to the nearest unit in the last right-hand digit used in expressing the specification limit, in accordance with the rounding-off method of Practice E29.

1.3 Consult current OSHA regulations, supplier's Safety Data Sheets, and local regulations for all materials used in this specification.

1.4 The values stated in SI units are to be regarded as standard. No other units of measurement are included in this standard.

1.5 *This standard does not purport to address all of the safety concerns, if any, associated with its use. It is the responsibility of the user of this standard to establish appropriate safety, health, and environmental practices and determine the applicability of regulatory limitations prior to use.*

1.6 *This international standard was developed in accordance with internationally recognized principles on standardization established in the Decision on Principles for the Development of International Standards, Guides and Recommendations issued by the World Trade Organization Technical Barriers to Trade (TBT) Committee.*

2. Referenced Documents

2.1 *ASTM Standards:*[2]

D7881 Test Method for Determination of 4-Carboxybenzaldehyde and ***p***-Toluic Acid in Purified Terephthalic Acid by Capillary Electrophoresis with Reverse Voltage Mode

D7882 Test Method for Determination of 4-Carboxybenzaldehyde and ***p***-Toluic Acid in Purified Terephthalic Acid by Capillary Electrophoresis with Normal Voltage Mode

D7883 Test Method for Determination of 4-Carboxybenzaldehyde and ***p***-Toluic Acid in Purified Terephthalic Acid by Weak Anion Exchange High Performance Liquid Chromatography

D7884 Test Method for Determination of 4-Carboxybenzaldehyde and ***p***-Toluic Acid in Purified Terephthalic Acid by Reverse Phase High Performance Liquid Chromatography

D8063 Test Method for Water in Purified Terephthalic Acid (PTA) by Volumetric Karl Fischer Titration

---

[1] This specification is under the jurisdiction of ASTM Committee D16 on Aromatic, Industrial, Specialty and Related Chemicals and is the direct responsibility of Subcommittee D16.02 on Oxygenated Aromatics.

Current edition approved ~~July 1, 2021~~Jan. 1, 2022. Published ~~August 2021~~January 2022. Originally approved in 2019. Last previous edition approved in ~~2019~~2021 as ~~D8062 – 19~~.D8062 – 21. DOI: ~~10.1520/D8062-21.~~10.1520/D8062-22.

[2] For referenced ASTM standards, visit the ASTM website, www.astm.org, or contact ASTM Customer Service at service@astm.org. For *Annual Book of ASTM Standards* volume information, refer to the standard's Document Summary page on the ASTM website.

***A Summary of Changes section appears at the end of this standard**

D8130 Test Method for Determination of Metals in Purified Terephthalic Acid (PTA) by Inductively Coupled Plasma Atomic Emission Spectrometric Method
D8207 Test Method for Determination of Metals in Purified Terephthalic Acid (PAT) by Atomic Absorption (AA) Spectrometry
E29 Practice for Using Significant Digits in Test Data to Determine Conformance with Specifications
E300 Practice for Sampling Industrial Chemicals
2.2 *Other Standards:*
OSHA Regulations, 29 CFR paragraphs 1910.1000 and 1910.1200[3]

3. Terminology

3.1 *Definitions:*

3.1.1 *4-carboxybenzaldehyde, n*—($C_8H_6O_3$) molecular weight, 150.13; white to yellow crystalline solid or powder; melting point, 247 °C; abbreviated as 4-CBA (CAS #619-66-9).

3.1.2 *p-toluic acid, n*—($C_8H_8O_2$) molecular weight, 136.15; white crystalline solid or powder; melting point, 180 °C to 181 °C; abbreviated as *p*-TOL (CAS #99-94-5).

3.1.3 *purified terephthalic acid, n*—($C_8H_6O_4$) molecular weight, 166.13, white crystalline solid or powder; sublimes, 402 °C to 404 °C; abbreviated as PTA (CAS #100-21-0).

3.1.4 ~~*4-carboxybenzaldehyde,*~~ *total heavy metals, n*—~~(C~~refer~~$_8$H$_6$O$_3$) molecular weight, 150.13; white to yellow crystalline solid or powder; melting point, 247 °C; abbreviated as 4-CBA (CAS #619-66-9).~~ to molybdenum, chromium, nickel, cobalt, manganese, titanium, and iron by industry standard.

4. Properties

4.1 PTA shall conform to the following requirements:

Property	Specification	ASTM Test Method[A]
4-CBA, max, mg/kg	25	D7881 or D7882 or D7883 or D7884
p-TOL, max, mg/kg	150	D7881 or D7882 or D7883 or D7884
Iron, max, mg/kg	1	D8130 or D8207
Total heavy metals, max, mg/kg	3	D8130 or D8207
Water, max, mass %	0.2	D8063

[A] If more than one method is listed, the producer and user should agree on the referee method.

[3] Available from U.S. Government Printing Office, Superintendent of Documents, 732 N. Capitol St., NW, Washington, DC 20401-0001, http://www.access.gpo.gov.