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Purified terephthalic acid (PTA) for industrial use

工业用精对苯二甲酸(PTA)

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Foreword

This Standard was drafted in accordance with the rules given in GB/T 1.1-2009.

This Standard was put forward by Sinopec Group.

This Standard shall be under the jurisdiction of National Standardization Technical Committee of Chemical (SAC/TC 63).

Drafting organizations of this Standard: Sinopec Yangzi Petrochemical Company Limited, Petrochina Liaoning Petrochemical Company.

Chief drafting staffs of this Standard: Ding Daxi, Dai Yudi, Jia Gui, Li Fengsheng.

Purified terephthalic acid (PTA) for industrial use

Warning: If the appropriate precautions are not followed, the products under this Standard may be dangerous during the process of production, storage, transportation, and use. This Standard does not intend to make recommendations for all safety issues related to this product. It is the user's responsibility to establish appropriate safety and precautionary measures and determine the applicability of relevant regulatory limitations before applying this Standard.

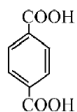
1 Scope

This Standard specifies the technical requirements, test methods, inspection rules, packaging, marking, transportation, storage and safety requirements for purified terephthalic acid (PTA) for industrial use.

This Standard applies to purified terephthalic acid (PTA) for industrial use, which is obtained from petroleum p-xylene through oxidation and refining. This product is mainly used as a raw material for the production of polyester chips, long and short polyester fibers and chemical products.

Molecular formula: $C_8H_6O_4$

Structural formula:



Relative molecular mass: 166.13 (according to the international relative atomic mass in 2011)

2 Normative references

The following referenced documents are indispensable for the application of this document. For dated references, only the edition cited applies to this document. For undated references, the latest edition (including any amendment) applies to this document.

GB/T 3143, Color determination method of liquid chemicals (Hazen unit - Platinum-cobalt scale)

GB/T 3723, Sampling of chemical products for industrial use - Safety in sampling

GB/T 6678, General principles for sampling chemical products

Carry out in accordance with method A, method B or method C in GB/T 30921.2. When determined in accordance with method A, the titanium content shall also be determined in accordance with GB/T 30291.4. Method C in GB/T 30921.2 shall be used as the arbitration method.

4.6 Moisture

Carry out according to the provisions of GB/T 30921.3; use the Karl Fischer volume method as the arbitration method.

4.7 DMF color (5 g/100 mL)

Use dimethylformamide (DMF) that meets the requirements for analytical reagents in GB/T 17521; prepare the test specimen into a 5 g/100 mL dimethylformamide (DMF) solution; filter it; take the filtrate for determination according to the provisions of GB/T 3143.

4.8 b*value

Carry out according to the provisions of GB/T 30921.7.

4.9 Particle size distribution

Carry out according to the provisions of GB/T 30921.6. If reported by volume fraction, carry out according to the laser diffraction method; if reported by mass fraction, carry out according to the air jet sieving method.

5 Inspection rules

5.1 Inspection classification

5.1.1 The product inspection is divided into type inspection and ex-factory inspection.

5.1.2 The type inspection items are all the items specified in Table 1. The type inspection shall be carried out in any of the following cases:

- a) every month during normal production;
- b) when the key production process is updated or the main equipment is changed;
- c) when there are changes – which affect product quality – in main raw materials;
- d) resumed production after suspension;
- e) when the exit-factory inspection result is significantly different from the previous type inspection;

5.1.3 Appearance, 4-carboxybenzaldehyde, p-toluic acid, ignition residue, total heavy metals, iron, moisture, b* value, and particle size distribution in Table 1 of this Standard are the ex-factory inspection items.

5.2 Batching

Uniform products of the same quality are a batch. Batches can be grouped according to production cycle, production shift or product stock bin.

5.3 Sampling

Carry out sampling according to the technical requirements stipulated in GB/T 3723, GB/T 6678 and GB/T 6679. Take 1 kg ~ 2 kg of test specimen from each batch of products for inspection and as reserved samples.

5.4 Determination rules

The product shall be inspected by the quality inspection department in accordance with the methods specified in Chapter 4, and the judgment of the inspection results shall be carried out according to the full numerical comparison method specified in GB/T 8170. The manufacturer shall ensure that the quality of all ex-factory products meets the requirements of this Standard.

5.5 Re-inspection rules

If the inspection results do not meet the requirements of this Standard, double-quantity samples shall be taken for re-inspection according to the provisions of GB/T 6678 and GB/T 6679. If the re-inspection results still do not meet the requirements in this Standard, judge the batch of products to be unqualified.

5.6 Quality certificate

Each batch of ex-factory products shall be accompanied by a quality certificate, which includes: the name of the manufacturer, product name, production date or batch number and the number of this Standard, etc.

6 Marking, packaging, transportation and storage

6.1 Marking

There shall be obvious marking on the outer packaging bag of PTA products, the content of which may include: trademark, manufacturer name, factory address, standard number, product name, production date or batch number, grade and net content.

6.2 Packaging

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