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Flame retardant chemical - Tetrabromophthalate diol

阻燃化学品 四溴苯酞二醇

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Table of Contents

Foreword	3
1 Scope.....	4
2 Normative references	4
3 Terms and definitions	5
4 Classification.....	5
5 Technical requirements	5
6 Test methods	5
7 Inspection rules	8
8 Marking.....	9
9 Packaging, shipping and storage.....	10

Flame retardant chemical - Tetrabromophthalate diol

1 Scope

This document specifies the classification, technical requirements, test methods, inspection rules, marking, packaging, transportation and storage of tetrabromophthalate diol for flame retardant.

This document applies to tetrabromophthalate diol used as flame retardants.

2 Normative references

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

GB/T 191, *Packaging and storage marks*

GB/T 601, *Chemical reagent - Preparations of standard volumetric solutions*

GB/T 603, *Chemical reagent - Preparations of reagent solutions for use in test methods*

GB/T 611, *Chemical reagent - General method for the determination of density*

GB/T 6678, *General principles for sampling chemical products*

GB/T 6680, *General rules for sampling liquid chemical products*

GB/T 6682, *Water for analytical laboratory use - Specification and test methods*

GB/T 8170, *Rules of rounding off for numerical values and expression and judgement of limiting values*

GB/T 12008.3-2009, *Plastics - Polyether polyols - Part 3: Determination of hydroxyl number*

GB/T 12008.5, *Plastics - Polyether polyols - Part 5: Determination of acidity as acid number*

GB/T 12008.7-2010, *Plastics - Polyether polyols - Part 7: Determination of viscosity*

GB/T 22313-2008, *Plastics - Polyols for use in the production of polyurethane - Determination of water content*

refer to the analytically pure reagents and the grade three water specified in GB/T 6682. The standard titration solutions, preparations and products used in the test shall be prepared in accordance with the provisions of GB/T 601 and GB/T 603 unless other requirements are specified.

6.2 Appearance

Load 50mL of specimen into a 50mL colorimetric tube. Visually inspect from the side under transmitted light conditions.

6.3 Hydroxyl value

Determine according to method A specified in GB/T 12008.3-2009.

The absolute deviation of the two parallel determination results is not more than 1.0mg/g. Take the arithmetic mean of two parallel determinations as the determination result.

6.4 Acid value

Determine according to the test method of GB/T 12008.5.

Take the arithmetic mean of two parallel determinations as the determination result. The absolute deviation of the two parallel determination results is not more than 0.1mg/g.

6.5 Bromine content

6.5.1 Method summary

Use potentiometric titration after alkali fusion to determine the bromine content in tetrabromophthalate diol. Under slightly acidic conditions, use silver nitrate standard titration solution to titrate the content of bromide ions. The titration end point is determined by the sudden jump point of electrode potential.

6.5.2 Reagents and solutions

6.5.2.1 Sodium hydroxide.

6.5.2.2 Potassium hydroxide.

6.5.2.3 Calcium carbonate.

6.5.2.4 Ethanol.

6.5.2.5 Silver nitrate standard titration solution (0.1mol/L).

6.5.2.6 Sodium hydroxide standard titration solution (1mol/L).

6.5.2.7 Bromothymol blue indicator solution (1g/L).

Where,

c - The exact value of the concentration of the silver nitrate standard titration solution, in moles per liter (mol/L);

V_1 - The value of the volume of the silver nitrate standard titration solution consumed by the titration test solution, in milliliters (mL);

V_0 - The value of the volume of the silver nitrate standard titration solution consumed by the titration blank solution, in milliliters (mL);

M - The value of the molar mass of bromine, in grams per mole (g/mol) ($M = 79.9$);

m - The exact value of the sample mass, in grams (g).

The absolute deviation of the two parallel determination results is not more than 0.2%. Take the arithmetic mean of two parallel determinations. Round it to one decimal place as the determination result.

6.6 Moisture

Determine according to method A (manual titration) specified in GB/T 22313-2008.

The absolute deviation of the two parallel determination results is not more than 0.03%. The arithmetic mean of two parallel determinations was taken as the determination result.

6.7 Viscosity

Determine according to the test method of GB/T 12008.7-2010.

The absolute deviation of the two parallel determination results is not more than 0.500Pa·s. Take the arithmetic mean of two parallel determinations as the determination result.

6.8 Density determination

Determine by the Webster balance method specified in GB/T 611.

The absolute deviation of the two parallel determination results is not more than 0.03g/mL. Take the arithmetic mean of two parallel determinations as the determination result.

7 Inspection rules

7.1 Inspection items

All items specified in Chapter 5 are exit-factory inspection items. They shall be

inspected in batches.

7.2 Batching rules

Tetrabromophthalate diol is taken as a batch of products from each production kettle or the same storage tank that is evenly mixed. Each batch of products does not exceed 50t.

7.3 Sampling rules

The number of sampling units is in accordance with the provisions of GB/T 6678. The sampling method is carried out according to the provisions of GB/T 6680. The sampling container is dry and clean. The total sampling volume shall not be less than 250mL. Samples shall be divided into two clean, dry containers. Seal. Put on adhesive labels, indicating manufacturer's name, product name, classification, batch number or production date, sampling date and sampler's name. One is for inspection and the other for future reference. The storage time is determined by the manufacturer as needed.

7.4 Rules for determination and reinspection

7.4.1 Rules for determination

Tetrabromophthalate diol shall be inspected by the quality inspection department in accordance with the test methods specified in this document. Use the round-off value comparison method specified in GB/T 8170 to judge whether the inspection result conforms to this document. According to the inspection results and the requirements in this document, determine the quality of the product.

7.4.2 Rules for reinspection

If the inspection result does not meet the requirements of this document, the item shall be reinspected by double sampling. The reinspection results are used as the basis for the quality determination of this batch of products. Even if only one of the indicators in the reinspection result does not meet the requirements of this document, the whole batch of products is considered rejected.

8 Marking

Each batch of tetrabromophthalate diol shall be accompanied by a quality certificate. The certification shall indicate manufacturer's name, factory address, product name, trademark, type, net content, batch number or date of production, product quality certification that conforms to this document, and the document number and the signs of "Afraid of the sun" and "Afraid of rain" stipulated in GB/T 191.

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