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**NATIONAL STANDARD OF THE
PEOPLE'S REPUBLIC OF CHINA**

GB/T 12009.5-2016

Replacing GB/T 12009.5-1992

**[Including 2019XG1] Plastics -- Aromatic isocyanates for use in
the production of polyurethane -- Part 5: Determination of
acidity**

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Foreword

The GB/T 12009 series of standards is divided into five parts.

---GB/T 12009.1 Determination of total chlorine content in isocyanates;

--- GB/T 12009.2 Aromatic isocyanates for the production of plastic polyurethane - Part 2. Determination of hydrolyzed chlorine;

--- GB/T 12009.3 Plastic polymethylene polyphenyl isocyanate - Part 3. Determination of viscosity;

Polycarbonate - Part 4. Determination of isocyanate content;

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This part is the fifth part of GB/T 12009.

This part is drafted in accordance with the rules given in GB/T 1.1-2009.

This part replaces GB/T 12009.5-1992 "Determination of acidity in isocyanate", compared with GB/T 12009.5-1992, the main difference

Don't do the following.

--- Change the standard name to "Aromatic isocyanate for plastic polyurethane production - Part 5. Determination of acidity";

--- Expanded the scope of application (see Chapter 1);

--- Added normative references (see Chapter 2);

--- Increased interference (see Chapter 3);

--- Increased sampling and test conditions (see Chapter 4);

--- Increased the type of solvent (see 5.2.4, 5.2.6, 6.2.3, 6.2.5);

---The test procedure is classified according to the product category of the original standard, and is classified according to the acidity of the product, and is divided into method A.

(acidity > 100 µg/g) and method B (acidity < 100 µg/g) two (see Chapters 5 and 6, Chapter 1989, Chapter 6 and

Chapter 7);

--- Added Appendix A (informative appendix).

This section uses the redrafting method to refer to ISO 14898.1999 "Measurement of acidity of aromatic isocyanate for plastic polyurethane production.

And the ISO 14898.1999/Amd.1.2011 amendments, with ISO 14898.1999 and ISO 14898.1999/Amd.1.2011

The degree of consistency is non-equivalent.

This part was proposed by the China Petroleum and Chemical Industry Federation.

This part is under the jurisdiction of the National Plastics Standardization Technical Committee Polyurethane Plastic Subcommittee (SAC/TC15/SC8).

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1 Scope

This part of GB/T 12009 specifies the method for determining the acidity of aromatic isocyanates for polyurethane production by potentiometric titration.

This section applies to the determination of the acidity of aromatic isocyanates and their prepolymers in polyurethane raw materials. Method A applies to medium/high acidity values (>100 µg/g) of crude or modified diphenylmethane diisocyanate, polymethylene polyphenyl isocyanate and toluene diisocyanate products.

Method B is suitable for low acidity (< 100 µg/g) refined, crude or modified diphenylmethane diisocyanate, polymethylene polyphenyl isocyanate

Ester and toluene diisocyanate. These methods are also applicable to toluene diisocyanate, diphenylmethane diisocyanate and polymethylene polyphenyl

Mixtures of isocyanate isomers, other isocyanates may be used if proven to be suitable.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article.

Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 6682 Analytical laboratory water specifications and test methods (GB/T 6682-2008, ISO 3696:1987, MOD)

3 interference

These test methods are used to determine those acidic materials that react with alcohol under relatively mild reaction conditions to rapidly release acid. This one

Acidity is produced by hydrogen chloride. Excessive reaction time and heating cause other chlorine-containing compounds to react and release hydrogen chloride.

high. Although less likely to be present in isocyanates, alkaline materials can interfere with titration. Acid or alkali introduced in the reagent or instrument

Sexual substances can interfere with the titration process.

4.1 Sampling

Isocyanate reacts with moisture in the air, so care should be taken when sampling. Common sampling method (eg from an open container)

Sampling), even if the operation is rapid, the sample may be contaminated by insoluble urea. Therefore, it is recommended to use a dry inert gas throughout the sampling process.

The sample is protected (such as nitrogen, argon, and dry air).

Note. Isocyanate is harmful to the skin through its absorption or inhalation of its vapor. Keep ventilation and wear protective gloves and glasses when handling.

4.2 Test conditions

The laboratory relative humidity should be (50 +/- 10)%.