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

GB/T 7534-2004

**Volatile organic liquids for industrial use -- Determination of
boiling range
(English Translation)**

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Foreword

This Standard uses ISO 4626.1980 Volatile organic liquids - Determination of boiling range of organic solvents used as raw materials (EN) after modification.

This Standard was redrafted in accordance with ISO 4626.1980. The contrast table for section numbers of this Standard and ISO 4626.1980 is listed in Annex A.

Taking China's national situation into consideration, this Standard has made some modifications when using ISO 4626.1980. The relevant technical differences have been compiled into the text, and have been identified by vertical single lines in the margins of the terms to which they relate. The list of the technical differences between this Standard and ISO 4626.1980 and corresponding reasons have been given in Annex B for reference.

This Standard replaces GB/T 7534-1987 Volatile organic liquids for industrial use - Determination of boiling range.

Compared with GB/T 7534-1987, the major changes in this Standard are as follows.

- MODIFY the boiling range applicable to this Standard from (50 ~ 200) °C to (30 ~ 300) °C (SEE Paragraph 1 of 1987 edition and Chapter 1 of this edition);
- ADD 200mL distillation flask (SEE Article 3.1 of 1987 edition and Article

5.1 of this edition);

- ADJUST the dimensions of the thermometer (SEE Article 3.2 of 1987 edition and Article 5.2 of this edition);
- ADD the distillation apparatus diagram for the electric heater in use (SEE Figure 3);
- ADD the safety and precautionary measures, factors causing superheating and operating precautions (SEE Chapters 6 and 9);
- ADJUST the requirements for the temperature of cooling water (SEE Chapter 4 of 1987 edition and Article 7.4 of this edition);
- ADD the requirements for the temperature of test pieces (SEE Article 7.4);
- MODIFY the total recovery volume from not less than 98mL to not less than 97% (volume fraction) for non-viscous liquid and not less than 95% (volume fraction) for viscous liquid (SEE Chapter 5 of 1987 edition and Article 8.6 of this edition);
- ADD the compound category to the table for the corrected values of the boiling points with pressure (SEE Annex C);
- The precision of method is given (SEE Article 10.4).

The Annexes A, B and C in this Standard are informative annexes.

This Standard was proposed by China Petroleum and Chemical Industry Association (changed to "China Petroleum and Chemical Industry Federation" on May 10, 2010).

This Standard shall be under the jurisdiction of the Subcommittee of Organic

Chemical Industry of the National Technical Committee for Standardization of Chemistry (CSBTS/TC 63/SC 2).

Drafting organization of this Standard. SINOPEC Beijing Research Institute of Chemical Industry.

Main drafters of this Standard. Guo Yanling and Dong Wei.

This Standard was first released in March 1987.

Volatile organic liquids for industrial use -

Determination of boiling range

Warning - This Standard does not address all safety issues related to the use of this Standard. It is the user's responsibility to take appropriate safety and health measures and to ensure compliance with the relevant national regulations. The description of relevant safety and precautionary measures is provided in Chapter 6.

1 Scope

This Standard specifies the method for determining the boiling range of the volatile organic liquids.

This Standard is applicable to the organic liquids that boil between 30°C and 300°C at normal pressure, and that are chemically stable during the distillation (such as hydrocarbons, esters, alcohols, ketones, ethers and similar organic compounds).

2 Normative references

The provisions in the following documents become the provisions of this Standard through reference in this Standard. For dated references, the subsequent amendments (excluding corrections) or revisions do not apply to this Standard. However, parties who reach an agreement based on this Standard are encouraged to study if the latest editions of these documents are applicable. For undated references, the latest editions apply to this Standard.

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

sampling (GB/T 3723-1999, idt ISO 3165.1976)

3 Terms and definitions

The following terms and definitions are applicable to this Standard.

3.1 Initial boiling point

It refers to the temperature observed (corrected if necessary) at the moment when the first drop of condensate falls from the tip of the condenser tube during a distillation carried out under standardized conditions.

3.2 Dry point

It refers to the temperature observed (corrected if necessary) at the moment of vaporization of the last drop of liquid at the bottom of the distillation flask during a distillation carried out under standardized conditions, disregarding any liquid on the side of the distillation flask and on the thermometer.

3.3 Boiling range

It refers to the temperature interval between the initial boiling point and the dry point.

3.4 End point, final boiling point

It refers to the maximum temperature observed (corrected if necessary) during the final phase of a distillation carried out under standardized conditions.

4 Method summary

DISTILL 100mL of test piece under prescribed conditions. Systematically OBSERVE the thermometer readings and volumes of condensate. READ the initial boiling point and the dry point from the thermometer. OBTAIN the boiling range of the test piece being tested by the calculation of the observed data. CORRECT the results to standardized conditions.