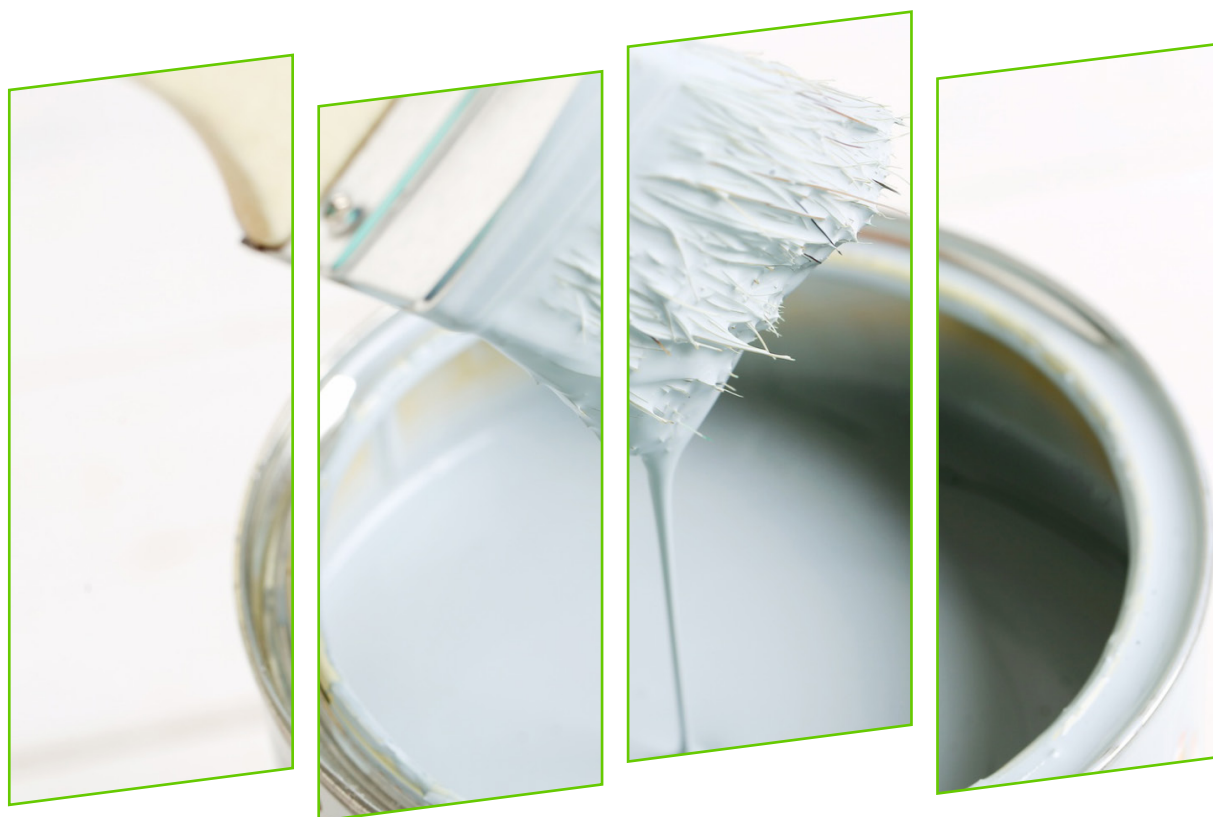




GB/T 23990–2009

Determination of the Contents of Benzene, Toluene, Ethylbenzene and Xylene in Coatings by Gas Chromatography

涂料中苯、甲苯、乙苯和二甲苯含量的测定
气相色谱法

Authorities: AQSIQ, SAC

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Translated by ChemLinked

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GB/T 23990-2009



ICS 87.040

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National Standard of the People's Republic of China

GB/T 23990-2009

**Determination of the contents of benzene, toluene,
ethylbenzene and xylene in coatings by gas
chromatography**

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ChemLinked Team, REACH24H Consulting Group | <http://chemical.chemlinked.com>
14F, #3 Bldg., Haichuang Technology Center, No. 1288 Wenyi West Road, Hangzhou, China. PC: 311121
Tel: +86 571 8700 7591 | Fax: +86 571 8700 7566 | Email: chemical@chemlinked.com

Foreword

This standard was proposed by the China Petroleum and Chemical Industry Association.

This standard is under the jurisdiction of the National Technical Committee on Paint and Pigment of the Standardization Administration of China.

Drafting organizations of this standard: CNOOC Changzhou Paint & Coating Industry Research Institute, and Kunshan Shiming Technology Development Co., Ltd.

Main drafters of this standard: Yu Bin, Zhou Xiangling and Du Changsen.

Determination of the contents of benzene, toluene, ethylbenzene and xylene in coatings by gas chromatography

1 Scope

This standard specifies the determination of the contents of benzene, toluene, ethylbenzene, and xylene in coatings by gas chromatography.

In this standard, Method A applies to the determination of the contents of benzene, toluene, ethylbenzene, and xylene in solvent-based coatings; Method B applies to the determination of the contents of benzene, toluene, ethylbenzene, and xylene in water-based coatings.

2 Normative References

Provisions of the following documents will constitute provisions of this standard through reference in this text. For dated references, all subsequent amendments (excluding the corrigendum) to or revisions do not apply. However, parties to agreements based on this standard are encouraged to investigate the reasonability of applying the latest editions of these documents. For undated references, the latest edition of the document applies.

GB/T 3186 Paints, varnishes and raw materials for paints and varnishes - Sampling (GB/T 3186-2006, ISO 15528: 2000, IDT)

3 Principle

After being diluted, the test sample shall be directly injected into the gas chromatograph, and then the tested compound will be separated by chromatographic separation technology, detected by the hydrogen flame ionization detector, and quantified by the internal standard method.

4 Reagents and Materials

4.1 Carrier gas: nitrogen, purity $\geq 99.995\%$.

4.2 Combustion gas: hydrogen, purity $\geq 99.995\%$.

4.3 Combustion-supporting gas: air.

4.4 Auxiliary gas (septum purge and make-up gas): nitrogen with the same properties as the carrier gas.

4.5 Internal standard substance: a compound that does not exist in the test sample and can be completely separated from other components on the chromatogram. The purity shall be at least 99% (mass fraction) or be known. For example n-heptane and n-pentane for solvent-based coatings; isobutanol for water-based coatings.

4.6 Calibration compounds: benzene, toluene, ethylbenzene, and xylene. The purity shall be at least 99% (mass fraction) or be known.

4.7 Diluting solvent: the organic solvent that is used to dilute the test sample and does not contain any substances that interfere with the test. The purity shall be at least 99% (mass fraction) or be known. For example, ethyl acetate and n-hexane for solvent-based coatings; acetonitrile and tetrahydrofuran for



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