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INDUSTRY STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

SN/T 3599-2013

Determination of organic oxygenate compounds and benzene content in gasoline. Two-dimensional gas chromatography using a heart-cutting system

汽油中有机含氧化合物和苯含量的测定 二维中心切割气相色谱法

(English Translation)

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Foreword

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

The reference to the standard EN13132:2000 "Liquid petroleum products measured unleaded gasoline unleaded organic compounds and total organic compounds Fixed column switching gas chromatography "and EN12177:2000" Liquid petroleum products unleaded gasoline benzene content by gas chromatography. " this standard is proposed and managed by the National Certification and Accreditation Administration Committee.

This standard was drafted. People's Republic of China Shanghai Entry-Exit Inspection and Quarantine Bureau, People's Republic of China Liaoning Entry-Exit Inspection and Quarantine Bureau.

1 Scope

This standard specifies the unleaded gasoline oxygenates, total organically bound oxygen content and benzene content of the two-dimensional gas chromatography center cut test methods.

This standard applies to not more than 220 °C unleaded gasoline oxygenates final boiling point, with a total organically bound oxygen content and benzene content Measurement, single measurement range of organic-containing oxide 0.17% to 15% (by mass), the maximum measuring range of the total organically bound oxygen content 3.7% (mass fraction), the measurement range of the benzene content of 0.05% to 6% (volume fraction).

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version suitable for use herein Member. For undated references,

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the latest edition (including any amendments) applies to this document.

GB/T 1884 crude oil and liquid petroleum products - Laboratory determination of density (density meter method) SH/T 0604 crude oil and petroleum products densitometry (U-shaped vibrating tube method) SN/T 2383 liquid chemicals - Determination of density and relative density digital density meter method

3 Method summary

Benzene in gasoline and oxygenate first first capillary column separation, and then one by one through the center of the cutting system is switched to a second root color the column further separated into the components after the separation of the flame ionization detector for detection.

NOTE: Two-dimensional gas chromatography center cutting guide in Appendix A.

4 Reagents

4.1
gases. hydrogen, helium or nitrogen content of greater than 99.999%, free of hydrocarbons.

4.2
oxygenated organic compounds include. methanol, ethanol, n-propanol, isopropanol, n-butanol, sec-butanol, tert-butanol, isobutanol, amyl alcohol, methyl Tert-butyl ether, methyl tert-amyl ether, ethyl t-amyl ether, acetone, methyl ethyl ketone, ethyl tertiary butyl ether, etc., all of the organic-containing sample used for the preparation of calibration Purity oxygen compound of not less than 99.0% (mass fraction).

4.3
Benzene. not less than 99.0% purity (mass fraction).

4.4
solvent. n-heptane recommended gasoline or benzene and an organic oxygen-containing compound, a solvent component to be tested or may not contain an internal standard.

4.5
internal standard. an internal standard is recommended to use methyl isobutyl ketone. When the sample itself contains methyl isobutyl ketone, it can be used similar to other volatile and a content of not less than 99.0% (by mass) of the organic oxygen-containing compound (e.g. 1,2-dimethoxyethane) as the internal standard.

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5.1 GC

5.1.1

Gas chromatography. with a column switching valve (center cutting system that Deansswitching system), flame ionization detector (FID), Cheng

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