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INDUSTRY STANDARD OF THE PEOPLE'S REPUBLIC OF CHINA

SN/T 3712-2013

Determination of sulfur in petroleum products. Polarization X-ray fluorescence spectrometry

石油产品硫含量测定 偏振X-射线荧光光谱法

(English Translation)

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Foreword

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

Please note that some of the content of this document may involve patents. Distribution of this document Institutions do not assume the responsibility to identify these patents.

This standard is proposed and managed by the National Certification and Accreditation Administration Committee.

This standard was drafted. People's Republic of China Ningbo Exit Inspection and Quarantine.

1 Scope

This standard specifies the test method for sulfur in petroleum products by polarized energy dispersive X- ray fluorescence spectrometry.

This standard applies to petroleum products. gasoline, diesel, naphtha and the like. Measurement range the sulfur content of 6mg/kg ~ 50mg/kg.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated edition applies to this file. For undated references, the latest edition (including any amendments) applies to this document.

GB/T 4756 sampling petroleum liquids hand GB/T 6683 Petroleum products - Determination of precision data test method SN/T 0975 import and export of petroleum and liquid petroleum products sampling method (Auto Sampling)

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3 Method summary

X- ray beam polarized sample is placed on the line in 2.307keV of Ka X- ray fluorescence radiation measured count rates of sulfur, sulfur-free re-measurement Radiation count rate blank sample X- ray fluorescence spectra of background radiation count rate of light mineral oil or matrix matched with samples, sample minus back King radiation count rate, resulting in net radiation count rate, then obtain the sulfur content from the calibration curve.

Warning. contact with an excess of X-rays harmful to health, the operator shall take appropriate measures to prevent any part of the body to receive a and the secondary or scattered X-ray irradiation, X-ray spectrometer operating although subject to equipment manufacturers and national safety guidelines and ground Party security provisions.

4 Interference

4.1

standard sample and the sample elemental composition of different sulfur content will lead to bias. For example hydrocarbon ratio of sample and standard samples Different will lead to biased results.

4.2

For some special samples, such as E10 ethanol gasoline, M15 and M85 methanol gasoline vehicle methanol gasoline car, the higher oxygen content, of sulfur Ka radiation absorption, the results can be corrected, or diluent matching sample preparation standard samples to establish the curve method.

4.3

differs from the composition of petroleum products as defined in Chapter 9 of the standard sample, usually available with the same or similar petroleum products to go with diluent Prepared standard sample. As the iso-octane and toluene by mixing, so that the resulting material which is similar to gasoline aromatics content. In this category Like substance is formulated gasoline composition standard samples to analyze gasoline samples, the accuracy of the results obtained is higher than the standard sample prepared using white oil.

5.1 Polarization X- ray fluorescence spectrometer

5.1.1

X-ray source. X-ray tube windows using lead or rhodium anode electrode and beryllium window, combined with X-ray polarizing polarizer polarizing Pb or Rh can the La-ray.

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