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

SN/T 3812-2014

**Determination of water for petroleum products - Coulometric
Karl Fischer titration method**

石油产品水含量的测定 卡尔费休库仑滴定法

(English Translation)

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Foreword

Accordance with the standards GB/T 1.1-2009 given rules drafted.

This revised standard adopts ISO 12937:2000 "Petroleum products - Determination of water content Karl Fischer coulometric titration method" (in English).

This standard and ISO 12937:2000 as compared to the main technical difference.

--- Chapter 10 Formula comment rho, according to the measurement of the density of the provisions of the temperature by the "15 °C" to "20 °C", this does not modify the Movies Results sound precision;

--- Chapter 2 normative references cited in corresponding national standards or industry standards in China.

Suitable for China's national conditions, in the use of ISO 12937:2000 when you made the following editorial changes.

--- Delete the directory, foreword and test reports;

--- Repeatability and reproducibility statements based on our habits were modified.

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

This standard was drafted. People's Republic of China, Xiamen Entry-Exit Inspection and Quarantine Bureau Technology Center.

1 Scope

This standard specifies the petroleum products in the water content of the direct determination method Karl Fischer coulometric titration.

This standard applies to the direct determination of boiling point lower than 390 °C of petroleum products in water content. Determination of the scope of application of water to

0.003% to 0.100% (mass fraction), but not for residual oil or petroleum products containing ketones.

This standard can be applied to lubricating base oils, but not to establish the appropriate precision.

Chapter 12 gives the precision is based on the dual-chamber (anode and cathode chambers), two-electrode system is derived.

Note 1: The number of substances and agglomerate or more compounds redox reactions interfere with Karl Fischer titration method for the determination of water content. In petroleum products, the most Common interfering substances are mercaptans and sulfides ion, however, when the determination of water content (mass fraction) range at 0.003% to 0.100%, below 0.003% (mass fraction) of sulfur does not produce significant interference. Other common organic sulfur compounds such as sulfide, disulfide and thiophene not Interference.

Note 2: Appendix B describes a method for the direct determination of petroleum products a water content of 0.003% to 0.100% (volume fraction), the volume of such optional direct Determination of the restrictions set forth in Appendix B.

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

GB/T 4756 petroleum liquids hand sampling method (GB/T 4756-1998, ISO 3170. 1988, IDT) GB/T 6682 analytical laboratory use specifications and test methods (GB/T 6682-2008, ISO 3687. 1987, MOD) SN/T 0826 import and export of petroleum and liquid petroleum product sampling (grab sample) SN/T 0975 import and export of petroleum and liquid petroleum products sampling method (Auto Sampling)

3 PRINCIPLE OF THE METHOD

In coulometer Karl Fischer titration cell was charged with an electrolyte containing iodine (Karl Fischer reagent). Weigh a certain amount of sample injection titration the pool, the anode electrolysis iodine for Karl Fischer coulometric response. When all of the water sample is titrated, the excess iodine by the end of electricity Detector monitors that the end of the titration. Based on reaction stoichiometry of 1 mole of iodine reacts with one mole of water, according to Faraday's law You can determine the water content of the sample.

4 Reagents

4.1

zeolite. 4A. 4h activated in an oven at 200 °C ~ 250 °C in immediately after the transfer to clean the dryer to cool sealed bottle or to room temperature.