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

SN/T 2382-2009

**Determination of water in liquid petroleum gas. Karl fischer
method**

液化石油气中微量水分的测定 卡尔.费休法

(English Translation)

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Foreword

This revised standard adopts ISO 10101-3:1993 "Natural gas - Determination of water content Karl Fischer method - Part 3. Coulomb Law" (In English).

This standard is based on ISO 10101-3:1993 redrafted. For ease of comparison, listed in Appendix A of this standard and reg number ISO 10101-3:1993 reg control list numbered.

This standard and ISO 10101-3:1993 The main differences are as follows.

--- Scope Determination of natural gas by the determination of water content of liquefied petroleum gas to trace water;

--- Chapter 2, according to GB/T 1.1-2000 "Standardization Guide Part 1. Standard structure and write rules" requirement Normative references to the corresponding part of the quoted standards to national standards and industry standards our country;

--- Increase the Chapter 4, "reaction and interference";

--- Taking into account the differences between LPG and natural gas, according to the results of inter-laboratory collaborative trials provisions of this standard precision.

Appendix A of this standard is an informative annex.

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

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

1 Scope

This standard specifies the Karl Fischer method (coulometry) standard method of liquefied petroleum gas in the direct determination of trace water.

This standard applies to liquefied petroleum gas moisture content in the range of 5mg/m³ ~ 5000mg/m³ measured.

This standard reference conditions metered volume of 273.15K (0 °C), 101.325kPa (1atm).

This standard does not apply to the determination of hydrogen sulfide and mercaptans content greater than 20% of the water content in the water used for liquefied natural gas.

2 Normative references

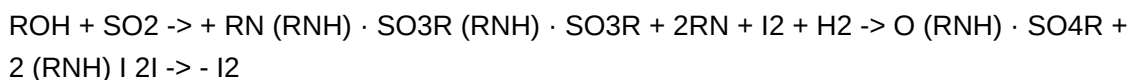
The following documents contain provisions which, through reference in this standard and become the standard terms. For dated references, subsequent Amendments (not including errata content) or revisions do not apply to this standard, however, encourage the parties to the agreement are based on research Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB/T 6379.2 measurement methods and results of Accuracy (trueness and precision) - Part 2. Determine the standard measurement method to repeat of the basic methods of reproduction SH/T 0233 LPG sampling method 10101-1 ISO .1993 Natural gas - Determination of water content Karl Fischer method - Part 1. Guidelines BS2000-272:2000 Test methods for oil and petroleum products, liquefied petroleum gas (LPG) mercaptan sulfur and hydrogen sulfide content Potentiometric titration Principle 3 Liquefied petroleum gas is introduced into a volume of Karl Fischer titration cell, moisture from the gas are absorbed Karl Fischer reagent. with water Required for the reaction of elemental iodine, iodide ions by anodic oxidation, the amount of electricity consumed and the amount of water to produce elemental iodine and reacted with it is proportional.

4 Reaction and interference

4.1

according to ISO 10101-1:1993 Karl Fischer reaction and the electrode reaction is as follows.



NOTE: ROH typically methanol, can also be used ethanol, isopropanol, 2-methoxyethanol (ethylene glycol monomethyl ether) Alternatively, the RN typically pyridine, any other Alternative suitable basic nitrogen-containing compound.

Hydrogen sulfide and mercaptans contained 4.2 LPG will also react with the Karl Fischer reagent occurs, causing deviation of results. When liquefied when the concentration of the gas containing hydrogen sulfide and mercaptans in less than 20% water content, 9.2 can be corrected.

LPG concentrations of hydrogen sulfide and mercaptans by BS2000-272:2000 were measured.

5 Reagents and materials

Unless otherwise indicated in the analysis using only recognized as analytical grade reagents and distilled or deionized water or equivalent purity.