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

SN/T 2270-2009

**Determination of calcium, lead, sodium, vanadium in gas
turbine fuels. Atomic absorption spectrometry**

气轮机燃料中钙、铅、钠、钒的测定 原子吸收光谱法

(English Translation)

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Foreword

This revised standard adopts the American Society for Testing and Materials ASTM D3605-00 (2005) test "gas turbine fuel Trace Metals Given atomic absorption and flame emission spectrometry. " this standard ASTMD3605-00 (2005) "gas turbine fuel in trace metals by atomic absorption and flame emission spectrometry" the following modifications.

- The standard according to Chinese customs for formatting has been modified;
- This standard ASTM standard formulation to apply our standard formulation;
- This standard will change the title to "gas turbine fuel, calcium, lead, sodium, vanadium by atomic absorption spectrometry";
- This standard is the standard reference GB/T 4756 instead of ASTMD4057 standards;
- The standard deleted in ASTMD3605-00 (2005) atomic emission spectrometry content;
- The standard delete ASTMD3605-00 (2005) are aimed at explaining all security matters;
- The standard delete ASTMD3605-00 (2005) description of the method of meaning and purpose;
- This standard reagent grade ASTMD3605-00 (2005) tetralin modified to suit the level of reagent Standard chemically pure grade reagents. But still need to annotate method checks;
- The standard delete the contents of the ASTMD3605-00 (2005) quality control and inspection;
- The standard delete ASTMD3605-00 the (2005) Keywords;
- This standard ASTMD3605-00 content (2005) and working conditions in the instrument to move the new Appendix A.

Appendix A of this standard is an informative annex.

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

1 Scope

This standard specifies the method of gas turbine fuels calcium, lead, vanadium and sodium measured by atomic absorption spectrometry.

This standard applies to gas turbine fuel calcium, lead, sodium and vanadium by atomic absorption spectrometry. Determination of the range of 0.1mg/L ~ 2.0mg/L.

This standard applies to oil-soluble metals and oil-water mixture spectrometry Central African waterborne contaminants in calcium, lead, sodium and vanadium by atomic absorption.

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 reach an agreement on this standard is Whether the latest versions of these documents. For undated reference documents, the latest versions apply to this standard.

GB/T 4756 Petroleum and Petroleum Products manual sampling method (GB/T 4756-1998eqv ISO 3170. 1988 Petroleum liquids-Manualsamplings)

3 Method summary

3.1

Sample preparation according to claim spiked law, options exist to avoid the direct analysis of the physical properties of significant differences in the samples. Analysis of sample and two respectively different spiked samples by flame atomic absorption spectrophotometry absorbed by the sample spiked above is not calculated Analysis of spiked metal content in the sample.

3.2

Determination of lead mixed air - acetylene flame atomic absorption spectrophotometry, sodium may be mixed air - acetylene flame atomic absorption Spectroscopy, determination of calcium and vanadium mixed nitrous oxide (N₂O) - acetylene flame atomic absorption spectrometry.

Note 1: Some users may need to detect turbine fuel in addition to the present process comprises a metal, but also contains potassium. Determination of potassium can be used potassium hollow cathode lamp, and using a similar detection method for detecting sodium (unless using flame emission method), wavelength 776.4nm, and with a suitable organic potassium standard.

But it failed to provide precision data.

4 Reagents and materials

4.1

Test should be used in reagent grade chemical reagents. Unless otherwise specified, all reagents shall conform to the national standard specifications related to reagents begging. If you use other levels of reagents, reagent purity must be confirmed does not affect the accuracy of the test.

4.2

tetralin, chemically pure, does not contain the analyte.

Note 2: tetrahydronaphthalene Inspection method. take a certain amount of tetralin to the vicinity of a glass bottle cap, and extracted with the same amount of hydrochloric acid. Was heated on a steam bath 1h, shaking 1h. If after extraction of tetrahydronaphthalene hydrochloride tetralin and without extraction, under optimal experimental conditions, the two detection signals no significant difference, then the tetralin not available for extraction in this experiment.

4.3

organometallic standards, known concentration of oil-soluble salts (including calcium, lead, sodium and vanadium).

Mixing 4.4 standard, an appropriate amount of the organometallic tetralin using standard volume, so that the concentration of sodium, lead, cadmium and vanadium were 250mg/L.

5 Apparatus

5.1

Atomic absorption spectrometer, instrument conditions, see Appendix A.

5.2

flask, 25mL.

5.3

bottles, 40mL, swing type, polyethylene caps.

5.4

sampler, 100μL.