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CCS E 38



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

GB/T 7602-1987

Replacing GB/T 7602-1987

**Determination of T501 oxidation inhibitor content in transformer
oil or turbine oil -- Part 1: spectrophotometric method**
(English Translation)

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Foreword

GB/T 7602 "transformer oil, turbine oil T501 antioxidant content determination" is divided into three parts.

Part 1. spectrophotometry;

Part 2. liquid chromatography;

Part 3. infrared spectroscopy.

This section GB/T 7602 Part 1.

This reference to the relevant part of the contents of IEC 60666.

This Part replaces GB/T 7602-1987 "Run in turbine oil, transformer oil T501 antioxidant assay method (a spectrophotometer Law degree). " this part of GB/T 7602-1987 compared to the main technical content amended as follows.

--- In operation decolorizing sample processing, extends the range of options decolorization adsorbent;

--- Given during the preparation of base oil, oil T501 examine whether clean off basis;

--- Provisions of the oil sample according to the method GB/T 7597 provisions acquisition;

--- Retains the measurement principle and procedure of the original method;

--- When measuring the absorbance, it provides pure water as reference.

This section is proposed and managed by the China Electricity Council.

This section is drafted. Xi'an Thermal Power Research Institute Co., Ltd., China Southern Power Grid, Guangzhou Power Supply Bureau.

1 Scope

This section provides transformer oil, turbine oil added T501 (2,6- tert-butyl-p-cresol) antioxidant content spectrophotometer test methods.

This section applies to transformer oil, turbine oil T501 measured antioxidant content.

Determination of other oil T501 antioxidant content also can refer to this section.

2 Normative references

The following documents contain provisions which, through GB/T reference in this 7602 constitute provisions of this part. For dated reference documents Member, all subsequent amendments (not including errata content) or revisions do not apply to this section, however, encouraged to reach under this section Parties to research agreement to use the latest versions of these documents. For undated reference documents, the latest versions apply to this section.

GB/T 7597 Power oil (transformer oil, turbine oil) sampling method

3 Method Summary

The method is based on petroleum, ethanol as a solvent, phosphomolybdic acid as chromogenic agent, molybdenum blue complex according T501 antioxidant and phosphorus molybdic Was in absorbance at 700nm spectrophotometer, the absorbance values using the relationship with the T501 proportional to the amount determined transformer oil, turbine the oil T501 anti-oxidant content. The minimum detectable amount of 0.05%.

4 Equipment

4.1

Spectrophotometer. 700nm wavelength range including a wavelength spectrophotometer, wavelength accuracy of $\pm 3\text{nm}$.

4.2

Analytical balance. accuracy 0.0001g.

4.3

Pipette. 2mL, 10mL.

4.4

Erlenmeyer flask. 150mL.

4.5

funnel. 125mL, 200mL.

4.6

volumetric flask. 100mL.

4.7

cylinder. 10mL, 50mL.

4.8

Beaker. 50mL.

4.9

Acid burette. 50mL.

4.10

water bath. temperature above 90 °C.

4.11

blender.

5 Reagents and materials

5.1

ethanol. AR.

5.2

Potassium hydroxide. AR, dubbed 0.1mol/L of absolute ethanol.

5.3

phosphomolybdic acid. AR, dubbed a 5% ethanol solution, filtered in a brown bottle, into the dark place.