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

GB 2536-2025

Replacing GB 2536-2011

**Fluids for electrotechnical applications - Unused mineral
insulating oils for transformers and switchgear
(English Translation)**

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Foreword

This document is in accordance with the provisions of GB/T 1.1-2020 "Guidelines for standardization work Part 1. Structure and drafting rules for standardization documents"

Drafting.

This document replaces GB 2536-2011 "Unused mineral insulating oil for electrical fluid transformers and switches"

Compared with GB 2536-2011, in addition to structural adjustments and editorial changes, the main technical changes are as follows (specific technical indicators are listed in Appendix A

Changes).

- a) The scope of applicability has been changed (see Chapter 1, Chapter 1 of the.2011 edition);
- b) Added the terms and definitions "mineral insulating oil", "passivator", "circulating mineral insulating oil", and changed the terms "antioxidant additive", "non-antioxidant additive", and "mineral insulating oil".
"Oil containing trace amounts of antioxidant additives", "Oil containing trace amounts of antioxidant additives", "Oil containing antioxidant additives", the term "charging tendency" has been deleted (see Chapter 3, Chapter 3 of the.2011 edition);
- c) Added the pour point test method NB/SH/T 0886 (see Table 1, Table 2 and Table 3);
- d) Added kinematic viscosity test method NB/SH/T 0870 (see Table 1, Table 2 and Table 3);
- e) Added the water content test method NB/T 42140 (see Table 1, Table 2 and Table 3);
- f) The footnotes for treated oil in the breakdown voltage item have been changed (see Tables 1, 2 and 3,.2011 edition);
- g) Added "color number", "potential corrosive sulfur", "dibenzyl disulfide (DBDS) content", "metal passivator content", "other additives

"Content" technical requirements (see Table 1, Table 2 and Table 3) and "Gas Production Characteristics" technical requirements (see Table 2);

h) Changed the "interfacial tension" and "total sulfur content (mass fraction)" of transformer oil (special) and "antioxidant content" of trace antioxidant additive oil.

Chemical additive content (mass fraction)" (see Table 1, Table 1 of the.2011 edition);

i) The item "2-furfural content" was changed to "2-furfural and related components content", and the item index and corresponding footnotes were changed (see Table 1,

Tables 2 and 3, Tables 1, 2, and 3 of the.2011 edition);

j) Added footnotes for oxidation stability test time (see Table 1, Table 2 and Table 3);

k) Modified the index of "Condensed Ring Aromatic Hydrocarbons (PCA) Content (Mass Fraction)" (see Table 1, Table 2 and Table 3,.2011 Edition Table 1,

Tables 2 and 3);

l) The factory inspection requirements have been changed (see 6.1.1, 6.1.1 of the.2011 edition);

m) Added normative Appendix E "Test method for gas production characteristics under thermal stress" (see Appendix E).

This document is modified to adopt IEC 60296.2020 "Mineral insulating oils for use in electrical equipment with electrotechnical fluids".

Compared with IEC 60296.2020, this document has many structural adjustments.

See Appendix B.

This document has many technical differences compared to IEC 60296.2020.

A list of these technical differences and their causes is given in Appendix C.

The following editorial changes have been made to this document.

--- The name of the standard was changed to "Unused mineral insulating oil for electrical fluid transformers and switches";

--- Replaced some informative references with Chinese standards;

--- Added informative appendix A, appendix B and appendix C.

1 Scope

This document defines the technical terms for unused mineral insulating oils with or without additives, obtained from refined petroleum fractions.

It specifies the terms and definitions, classification and marking, requirements and test

methods, inspection rules and marking, packaging, transportation and storage.

This document applies to mineral insulating oils used in transformers, switches and similar electrical equipment that require oil as an insulating and heat transfer medium.

Refer to this document for generator oil.

This document is not applicable to circulating mineral insulating oils.

This document does not apply to mineral insulating oils used as impregnating agents in cables or capacitors.

NOTE: Oils that meet the requirements of this document, are of the same category and do not contain any additives (see 3.4) are considered compatible and can be mixed in any proportion.

This does not necessarily apply to oils containing additives. When the user wishes to mix oils containing additives, first test to ensure that the mixture meets the requirements of this document.

Require.

2 Normative references

The contents of the following documents constitute the essential clauses of this document through normative references in this document.

For referenced documents without a date, only the version corresponding to that date applies to this document; for referenced documents without a date, the latest version (including all amendments) applies to

This document.

GB/T 259 Determination of water-soluble acids and bases in petroleum products

GB/T 261 Determination of flash point-Pensky-Martin closed cup method (GB/T 261-2021, ISO 2719:2016, MOD)

GB/T 262 Petroleum products and hydrocarbon solvents Determination of aniline point and mixed aniline point (GB/T 262-2010, ISO 2977-1997, MOD)

GB/T 265 Determination of kinematic viscosity and calculation of dynamic viscosity of petroleum products

GB/T 507 Determination of the breakdown voltage of insulating oils (GB/T 507-2002, eqv/IEC 156:1995)

GB/T 511 Petroleum, petroleum products and additives - Determination of mechanical impurities

GB/T 1884 Laboratory method for determination of density of crude oil and liquid petroleum products (density meter method) (GB/T 1884-2000, eqv

ISO 3675.1998)

GB/T 1885 Petroleum Meters (GB/T 1885-1998, eqv ISO 91-2.1991)

GB/T 3535 Determination of pour point of petroleum products (GB/T 3535-2006, ISO 3016.1994, MOD)

GB/T 4756 Manual Sampling of Petroleum Liquids (GB/T 4756-2015, ISO 3170.2004, MOD)

GB/T 5654 Measurement of relative permittivity, dielectric loss factor and DC resistivity of liquid insulating materials (GB/T 5654-2007, IEC 60247.2004, IDT)

GB/T 6540 Determination of color of petroleum products

GB/T 6541 Petroleum products - Determination of interfacial tension of oil against water (ring method)

END: Draft Version (GB 2536-2025)