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

GB/T 21218-2023

Replacing GB/T 21218-2007

**Unused silicone insulating liquids for electrotechnical
purposes
(English Translation)**

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Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1: Structure and Drafting Rules of Standardization Documents" Drafting:

This document replaces GB/T 21218-2007 "Unused silicon insulating liquids for electrical use": Compared with GB/T 21218-2007, except in addition to structural adjustments and editorial changes, the main technical changes are as follows:

---Added the tristimulus colorimetric method for measuring color in GB/T 6324.6 (see 8.1:1);

---Added the appearance inspection method in DL/T 429.1 (see 8.1:2);

--- Added provisions for the "density" test regarding the selection of test methods during the arbitration test (see 8.2);

--- Added the NB/SH/T 0870 viscosity test method and the provisions for selecting the test method during the arbitration test (see 8.3 and Table 1);

---Added SH/T 0205 or GB/T 6488 test method for determination of refractive index, deleted ISO 5661 (see 8.6,:2007 version 8:6);

---Added NB/SH/T 0886 automatic tilt method for determining pour point and provisions for selecting test methods during arbitration tests (see 8.7,

Table 1 and Table 2);

---Added test procedures for determining the moisture content of silicon insulating liquids of different viscosities (see 8.8);

---Added performance requirements and test methods for "volatility" (see 8.9 and Table 1);

---Change "neutralization value" to "acid value" and change it to the test method of GB/T 41633.3 (see 8.10, 8:9 of the:2007 version);

--- Added test procedures for measuring the breakdown voltage of silicon insulating liquids of different viscosities (see 8.11);

--- Added test procedure provisions for dielectric loss factor, permittivity and DC resistivity (see 8.12);

---Added minimum performance requirements for "silicon insulating liquids for other electrical equipment" (see 9.3):

This document is modified to adopt IEC 60836:2015 "Specification for unused silicone insulating liquids for electrical use":

Compared with IEC 60836:2015, this document has made the following structural adjustments:

---Added 8:9 "volatility", and the subsequent bar numbers in Chapter 8 have been postponed;

---Added Appendix A (informative):

Compared with IEC 60836:2015, this document has many technical differences: Use a vertical single line in the outer margin of the involved clauses:

(I) is marked: A list of these technical differences and their causes is provided in Appendix A:

The following editorial changes have been made to this document:

---Change the standard name to "Unused silicon insulating liquid for electrical use";

---The expression in the "Scope" chapter has been adjusted to comply with the writing regulations of GB/T 1.1-2020;

---Informative appendix A has been added, listing the technical differences and reasons for adopting international standards:

Please note that some content in this document may be subject to patents: The publisher of this document assumes no responsibility for identifying patents:

1 Scope

This document specifies the properties, general delivery requirements and labelling, storage and maintenance, sampling of unused silicone insulating fluids for use in electrical equipment:

and individual material specifications, describing performance test methods:

This document is applicable to the design and design of unused silicon insulating liquid for transformers, cable accessories, capacitors, electromagnetic appliances and other electrical equipment:

Production and inspection:

NOTE: See IEC 60944 for the care of used silicone insulating liquids used in electrical equipment:

2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text: Among them, the dated quotations for undated referenced documents, only the version corresponding to that date applies to this document; for undated referenced documents, the latest version (including all amendments) applies to this document:

GB/T 261 Determination of flash point Penski-Martin closed cup method (GB/T 261-2021, ISO 2719:2016, MOD) GB/T 507 Determination of breakdown voltage of insulating oil (GB/T 507-2002, eqvIEC 60156:1995) GB/T 1884 Laboratory determination of density of crude oil and liquid petroleum products (densitometer method) (GB/T 1884-2000, eqvISO 3675:1998) GB 2536 Electrical fluids Unused mineral insulating oil for transformers and switches (GB 2536-2011, IEC 60296:

2003,MOD)

GB/T 3143 Liquid chemical product color determination method (Hazen unit---platinum-cobalt color number) GB/T 3535 Determination of pour point of petroleum products (GB/T 3535-2006, ISO 3016:1994, MOD) GB/T 3536 Determination of flash point and fire point of petroleum products Cleveland open cup method (GB/T 3536-2008, ISO 2592:

2000,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 6324.6 Test methods for organic chemical products Part 6: Determination of liquid color Tristimulus value Colorimetric method Tristimulus value Colorimetry GB/T 6488 Determination of refractive index of liquid chemical products GB/T 10065 Method for determination of gas

evolution of insulating liquids under electrical stress and ionization (GB/T 10065-2007, IEC 60628:1985,MOD) GB/T 23770 General method for colorimetric determination of liquid inorganic chemical products (GB/T 23770-2009, ISO 2211:1973, MOD) GB/T 27750 Classification of insulating liquids (GB/T 27750-2011, IEC 61039:2008, IDT) GB/T 30515 Method for determination of kinematic viscosity and calculation method of dynamic viscosity of transparent and opaque liquid petroleum products (GB/T 30515-2014,ISO 3104:1994,MOD) GB/T 41146 Insulating liquid sampling method (GB/T 41146-2021, IEC 60475:2011, IDT) GB/T 41633.3 Determination of acid value of insulating liquids Part 3: Test methods for non-mineral insulating oils (GB/T 41633.3-2022,IEC 62021-3:2014,IDT)