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

**GB/T 46134-2025**

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**Natural esters - Guidelines for maintenance and use in  
electrical equipment  
(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 is modified to adopt IEC 62975:2021 "Guidelines for the maintenance and use of natural esters in electrical equipment".

This document has the following structural adjustments compared to IEC 62975:2021.

--- Terms 3.1 to 3.3 correspond to terms 3.2 to 3.4 of IEC 62975:2021;

--- Added Chapter 11 "Storage and Transportation of Natural Esters".

The technical differences between this document and IEC 62975:2021 and their reasons are as follows.

--- Changed the scope (see Chapter 1) to meet the needs of technical content;

--- Changed some terms and their definitions (see 3.2 and 3.3), added the term "natural ester insulating oil" and its definition (see 3.4), deleted the term "3.1 Local regulations" and its definition of IEC 62975:2021 are modified to adapt to my country's technical conditions and improve operability.

Sexuality;

--- The normative reference GB/T 6540 replaces ASTM D1500 (see Table 2, 9.2) to adapt to

my country's technical conditions, and adds operability;

--- The normative reference GB/T 507 replaces IEC 60156 (see Table 2, 9.3) to adapt to my country's technical conditions and increase operability.

Sexuality;

--- IEC 60814 (see Table 2) has been replaced by the normative reference NB/T 42140 to adapt to my country's technical conditions and increase operability.

Sexuality;

--- The normative reference GB/T 30515 replaces ISO 3104 (see Table 2, 9.4) to adapt to my country's technical conditions and increase the operability;

--- The normative reference GB/T 41633.3 replaces IEC 62021-3 (see Table 2, 9.5) to adapt to my country's technical conditions, and adds Increase operability;

--- The normative reference GB/T 5654 replaces IEC 60247 (see Table 2, 9.6) to adapt to my country's technical conditions and increase the operability;

--- The normative reference GB/T 17623 replaces IEC 60567 (see Table 2, 9.7) to adapt to my country's technical conditions and increase the operability;

--- ISO 2592 (see Table 2, 9.8) has been replaced with the normative reference GB/T 3536 to adapt to my country's technical conditions and increase operability.

Sexuality;

--- The normative reference GB/T 6541 replaces IEC 62961 (see Table 2, 9.9) to adapt to my country's technical conditions and increase the operability;

--- Replaced ISO 12185 with the normative reference SH/T 0604, and replaced ISO 3675 with the normative reference GB/T 1884 (See Table 2, 9.10) to adapt to my country's technical conditions and increase operability;

--- The normative reference GB/T 3535 replaces ISO 3016 (see Table 2, 9.11) to adapt to my country's technical conditions and increase the operability;

--- IEC 60666 (see Table 2, 9.12) was replaced with the normative reference NB/SH/T 0802 to adapt to my country's technical conditions, and Increase operability;

--- Replaced IEC 60970 (see Table 2, 9.13) with the normative reference GB/T 44378 to adapt to my country's technical conditions, and added operability;

--- The normative reference GB/T 14542 replaces ASTM D7752 (see Table 2) to adapt to my country's technical conditions and increase operability;

--- ASTM D3455 (see Table 2) has been replaced by the normative reference IEC 63177 to adapt to my country's technical conditions and increase operability.

Sexuality;

- Changed the contents of "Recommended Measures", "Remarks" and footnote b in Table 5 (see Table 5) to adapt to my country's technical conditions and add operable Sexuality;
- Replaced IEC 62770 with the normative reference NB/T 10199, replaced IEC 62770 with the normative reference NB/SH/T 0811 IEC 61125 (see 9.15) to adapt to my country's technical conditions and increase operability;
- Deleted the normative references to IEC 60422:2013, ISO 2049, ISO 21018-3, ASTM D92, ASTM D6922, ASTMD7042, ASTMD7155, and ASTMD7647 to adapt to my country's technical conditions and increase operability;
- Changed the content of "Sampling of natural esters in equipment" and replaced IEC 60475 with the normative reference GB/T 41146 (see Section 10 Chapter), in order to adapt to my country's technical conditions and increase operability;
- Added storage and transportation requirements for natural esters and added normative references to DL/T 1811 (see Chapter 11) to adapt to my country's Technical conditions, increase operability.

The following editorial changes have been made to this document.

- Change the chapter title to "Classification of inspection items for natural esters in transformers (reactors)" (see Chapter 5);
- Change the chapter title to "Inspection of natural esters before commissioning of new equipment" and replace IEC with the informative reference DL/T 1811 62770 (see Chapter 6);
- IEC 61619 is replaced by the informative reference SH/T 0803 (see footnote d in Table 3);
- Change the chapter title to "Testing of natural esters in operation" (see Chapter 7);
- Change the title of Table 4 to "Recommended inspection cycle of natural ester for transformers (reactors) in operation" (see Table 4);
- Change the title of the article to "Explanation of the Situation" (see 9.1);
- Change the title of the article to "Kinematic viscosity" (see 9.4);
- IEC 60567 is replaced by DL/T 2217, and IEC 60599 is replaced by DL/T 722.  
(see 9.7);
- Replace ISO 4406 with the informative reference GB/T 14039 (see 9.13);
- Replaced ASTM D 3455 with the informative reference DL/T 1836 (see 9.14).