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

GB/T 11026.10-2019

**Electrical insulation materials -- Thermal endurance properties -- Part 10:
Accelerated determination of relative thermal endurance using analytical test
methods (RTEA) -- Instructions for calculations based on activation energy**

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- 3.1 Terms and definitions

Foreword

GB/T 11026 "Electrical insulation material heat resistance" is divided into the following parts.

- Part 1. Assessment of aging procedures and test results;
- Part 2. Selection of test criteria;
- Part 3. Procedures for calculating heat-resistant characteristic parameters;
- Part 4. aging oven single chamber oven;
- Part 5. Precision oven with aging oven temperature up to 300 °C;
- Part 6. aging oven multi-room oven;
- Part 7. Determine the relative heat resistance index (RTE) of the insulating material;
- Part 8. Determination of the thermal index (TI and RTE) of insulating materials by fixed time method;
- Part 9. Calculation of heat resistance guidelines using simplified procedures;
- Part 10. Accelerated determination of relative heat tolerance index (RTEA) using analytical test methods.

This part is the 10th part of GB/T 11026.

This part is drafted in accordance with the rules given in GB/T 1.1-2009.

This section uses the redrafting method to modify the use of IEC /T S60216-7-1.2015 "Electrical Insulation Materials Heat Resistance Part 7-1.

The analytical test method is used to accelerate the determination of the relative heat resistance index (RTEA) based on the calculation of activation energy.

The technical differences between this part and IEC /T S60216-7-1.2015 and their reasons

are as follows.

---About the normative reference documents, this part has made technical adjustments to adapt to China's technical documents, adjustments

The situation is reflected in Chapter 2, "Regulatory Citations", and the specific adjustments are as follows.

* Replace IEC 60085 with GB/T 11021 equivalent to the international standard (see 8.3.2);

* Replace IEC 60216-1 with GB/T 11026.1 equivalent to the international standard (see 4.3, Chapter 6);

* Replace IEC 60216-2 with GB/T 11026.2 equivalent to the international standard (see 4.3, Chapter 6, 8.2);

* Replace IEC 60216-5 with GB/T 11026.7 equivalent to the international standard (see 4.3, 8.3);

* Replace IEC 60216-8 with GB/T 11026.9 equivalent to the international standard (see 4.3, 7.5, 8.3.1);

* Replace ISO 11357-6 with GB/T 19466.6 with international standards (see 7.2);

--- Regarding the terminology, the heat-resistant drawing was deleted, as the term is not used in this section;

---About abbreviations, deleted RTE, TI, HIC, because the term has relative heat index (RTE), temperature index (TI), half difference

Definition of (HIC) and abbreviations;

---About the general basis, delete the formula (12), because it is repeated with the formula (7), the subsequent formula (13) ~ formula (32) is adjusted to the formula (12) ~

Formula (31);

--- Due to the editorial error of IEC /T S60216-7-1.2015 original text, and the heat aging life will decrease with the increase of aging temperature, modify

Formula (26).

This standard has made the following editorial changes.

--- Modify the standard name to "Electrical insulation materials heat resistance Part 10.

Accelerate the determination of relative resistance by analytical test methods

Thermal Index (RTEA) is based on the calculation of activation energy.

This part was proposed by China Electrical Equipment Industry Association.

This part is under the jurisdiction of the National Technical Committee for Standardization of

Electrical Insulation Materials and Insulation Systems (SAC/TC301).

This section was drafted. Sichuan Dongcai Technology Group Co., Ltd., Beijing Institute of Electrical and Mechanical Technology, Machinery Industry, Guangdong Power Grid

The Electric Power Research Institute of the limited liability company, the Quality and Technical Supervision Standards and Code Office of Shunde District of Foshan City, and the Suzhou Taihu Electric New Materials Co., Ltd.

Company, Shanghai Cable Research Institute Co., Ltd., Wuxi Jiangnan Cable Co., Ltd., Zhejiang Bofei Electric Co., Ltd., Yantai Minstar

Paper Co., Ltd., Suzhou Electric Apparatus Research Institute Co., Ltd., Suzhou Jufeng Electric Insulation System Co., Ltd., Beijing

Xinfu Runda Insulation Materials Co., Ltd., Harbin Electric Power Equipment Co., Ltd., Dongfang Electric Group Dongfang Motor Co., Ltd.

Guochangjiang Power Group Co., Ltd., Zhejiang Rongtai Technology Enterprise Co., Ltd., State Grid Jiangsu Power Co., Ltd.

1 Scope

This part of GB/T 11026 specifies the evaluation procedure for the heat resistance of electrical insulating materials. The program is based on the heat obtained by the thermal analysis method

Evaluating the relative heat resistance of electrical insulating materials by the activation energy of the degradation reaction and a life point in the heat resistance map obtained by conventional heat aging tests

Index (RTE).

This section only applies to aging reactions in which a specific reaction dominates and is directly related to the endpoint criteria.

2 Normative references

The following documents are indispensable for the application of this document. For dated references, only dated versions apply to this article.

Pieces. For undated references, the latest edition (including all amendments) applies to this document.

GB/T 11021 Electrical insulation heat resistance and indication method (GB/T 11021-2014, IEC 60085.2007, IDT)

GB/T 11026.1 Thermal insulation of electrical insulating materials - Part 1 . Assessment of

aging procedures and test results (GB/T 11026.1-

2016, IEC 60216-1.2013, IDT)

GB/T 11026.2 Thermal insulation of electrical insulating materials - Part 2. Selection of test criteria (GB/T 11026.2-2012,

IEC 60216-2.2005, IDT)

GB/T 11026.7 Thermal insulation of electrical insulating materials - Part 7. Determination of relative heat index (RTE) of insulating materials

(GB/T 11026.7-2014, IEC 60216-5.2008, IDT)

GB/T 11026.9 Thermal insulation of electrical insulating materials - Part 9. Calculation of heat resistance using simplified procedures (GB/T 11026.9-

2016, IEC 60216-8.2013, IDT)

GB/T 19466.6 Plastic Differential Scanning Calorimetry (DSC) Part 6. Oxidation induction time (isothermal OIT) and oxidative induction

Determination of temperature (dynamic OIT) (GB/T 19466.6-2009, ISO 11357-6.2008, MOD)

Thermoplastic analysis of industrial polymers (TG) Part 2. Determination of activation energy [Plastics-Thermogravime-

Try(TG)ofpolymers-Part 2.Determinationofactivationenergy]

ISO 11358-3 Thermoplastic analysis of plastics (TG) Part 3. Ozawa-Friedman reaction kinetics

Determination of activation energy by analytical method

[Plastics-Thermogravimetry(TG)ofpolymers-Part 3.Determinationofthe

activationenergyusingtheOzawa-Friedmanplotandanalysisofthereactionkinetics]

3.1 Terms and definitions

The following terms and definitions apply to this document.