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

GB/T 15022.8-2017

**Resin based reactive compounds used for electrical insulation -
Part 8: Epoxy modified unsaturated polyester vacuum pressure
impregnation (VPI) resin**

电气绝缘用树脂基活性复合物 第8部分：环氧改性不饱和聚酯真空压力浸渍(VPI)
树脂

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Standardization Administration of China**

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Foreword

GB/T 15022 "electrical insulating resin-based active composite" is divided into the following sections.

- Part 1. Definition and general requirements;
 - Part 2. Test methods;
 - Part 3. No filler epoxy resin compound;
 - Part 4. Unsaturated polyester-based impregnating resin;
 - Part 5. Quartz filler epoxy resin composite;
 - Part 6. Nuclear Power Plant 1E level distribution transformer insulation with epoxy resin;
 - Part 7. Epoxy anhydride vacuum pressure impregnation (VPI) resin;
 - Part 8. Epoxy modified unsaturated polyester vacuum pressure impregnation (VPI) resin;
- This section GB/T 15022 Part 8. This section drafted in accordance with GB/T 1.1-2009 given rules. This part is proposed by China Electrical Equipment Industry Association. This part of the National Standardization Technical Committee insulation materials (SAC/TC51) centralized. This section is drafted unit. Taihu Lake Electrical Suzhou New Materials Co., Ltd., Guilin Electric Institute of Science and Technology Co., Ltd., Zhejiang Rong Tyco Technology Co., Ltd., Suzhou Jufeng Electrical Insulation System Co., Ltd. The main drafters of this section. Li Xinzong, Shi Wenlei, Luo Chuan Yong, Cao Wanrong, Xia Yu, Cui Cui. Resins for electrical insulation Part 8. Epoxy - modified unsaturated polyester vacuum pressure Impregnated (VPI) resin

1 Scope

GB/T 15022.8-2017 is the Chinese national standard on resin based reactive compounds used for electrical insulation - part 8: epoxy modified unsaturated polyester vacuum pressure impregnation (vpi) resin, in the field of electrical engineering. The /T suffix marks it as a recommended standard: it is not compulsory by itself, but it becomes binding as soon as a contract, a tender or a customer specification calls it up - which in practice is how most

foreign buyers meet it. It was issued on 29 September 2017 by the General Administration of Quality Supervision, Inspection and Quarantine of the People's Republic of China; Standardization Administration of China, and has been in force since 1 April 2018.

Classification: ICS 29.035.99, CCS K15. This page is published from the official record of the standard held by the Chinese standards administration: the identification, the dates, the classification and the issuing body are taken from there. The clause text, the tables and the numeric limits are in the document itself, which is delivered complete in English translation.

GB/T 15022 provisions of this part of the electrical insulation with epoxy modified unsaturated polyester pressure impregnation (VPI) resin requirements, the test inspection methods, inspection rules and packaging, marking, storage and transportation. This section applies to electrical insulation with epoxy modified unsaturated polyester pressure impregnation (VPI) resin.

Note. Epoxy modified unsaturated polyester vacuum pressure impregnation (VPI) resin is a high purity epoxy modified unsaturated polyester, with a new modified curing agent, accelerator, Active cross-linking agent made of one-component impregnated resin.

2 Normative references

The following documents for the application of this document is essential. For dated references, only the dated version applies to this article Pieces. For undated references, the latest edition (including all amendments) applies to this document. Paints for electrical insulation - Part 2. Test methods Test method for determining the bond strength of impregnating agent to enamelled wire substrate

GB/T 15022.2-2007 Resin-based reactive composites for electrical insulation - Part 2. Test methods Plastics - Liquid resins - Determination of density by the method of pycnometer
GB/T 15223-2008

3 Requirements

This product should meet the requirements of Table 1. Table 1 epoxy-modified unsaturated polyester vacuum pressure impregnation (VPI) resin requirements No. Performance unit requirements 1 appearance - light yellow transparent liquid, no mechanical impurities 2 viscosity [Tu-4 viscometer, $(23 \pm 1) ^\circ\text{C}$] s 30 ~ 60 3 acid value (based on KOH) mg/g ≤ 8 4 density g/cm³ 1.04 ± 0.03 5 thick layer curing ability [$(135 \pm 2) ^\circ\text{C}/2\text{h}$] - not worse than S1, U1, I

6 Curing volatiles $(140 \pm 2) ^\circ\text{C}/2\text{h}$ % ≤ 10 7 gel time [test tube method, $(135 \pm 2) ^\circ\text{C}$] min 5 ~ 20

8 Paint and copper reaction - no patina Power frequency electrical strength $(23 \pm 1) ^\circ\text{C}$ ($23 \pm 1) ^\circ\text{C}$ after immersion 24h $(155 \pm 2) ^\circ\text{C}$ MV/m ≥ 25 ≥ 22 ≥ 18