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**NATIONAL STANDARD OF THE
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**Technical determination methods for electrical fire evidence -
Part 8: Method of thermal analysis**

电气火灾痕迹物证技术鉴定方法 第8部分: 热分析法

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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 of Standardization Documents" Drafting. This document is the 8th part of GB/T 16840 "Technical Appraisal Method for Electrical Fire Trace Material

Evidence". GB/T 16840 has been released The following parts.

2.Remanence detection method;

3.Auger analysis method;

4.Metallographic Analysis;

5.Identification and extraction methods of electrical fire material evidence;

---Part 6: SEM microscopic morphology analysis method;

---Part 7: EDS component analysis method;

8.Thermal analysis method. Please note that some of the contents of this document may involve patents. The issuing agency of this document is not responsible for identifying patents. This document was proposed by the Ministry of Emergency Management of the People's Republic of China. This document is under the jurisdiction of the National Fire Standardization Technical Committee (SAC/TC113). This document was drafted by: Shenyang Fire Research Institute of the Ministry of Emergency Management, Shanghai Fire Research Institute of the Ministry of Emergency Management, and Tianjin Fire Protection of the Ministry of Emergency Management Research Institute, Sichuan Fire Research Institute of Emergency Management Department. The main drafters of this document. Liu Shujun, Wang Bai, Yu Lili, Gao Wei, Zhao Changzheng, Di Man, Bao Renlie, Deng Zhenyu, Zhang Yi.

The identification of electrical fire evidence is an important part of the investigation of the cause of fire by emergency rescue and firefighting agencies, especially when it is accompanied by national The improvement of the legal system of the family, the enhancement of citizens' awareness of the legal system, the identification of physical evidence has been used as strong evidence for the identification of the cause of the fire, and it is a fire rescue agency. The determination of the cause of the fire provides scientific, fast and accurate technical support. In this regard, my country has established a technology for evidence of electrical fire traces. National standard system for identification methods. In this standard system, GB/T 16840 "Technical Appraisal Method for Electrical Fire Trace Material Evidence" is a guide for me The method and basis for the relevant agencies of the country to engage in the identification of electrical fire evidence is planned to consist of eight parts, and the purpose is to establish Trace physical evidence for macro analysis, remanence analysis, Auger analysis, metallographic analysis, physical evidence identification and extraction, SEM microscopic morphology analysis, and component analysis And the method and basis for thermal analysis.

2.Remanence detection method;

3.Auger analysis method;

4.Metallographic Analysis;

5. Identification and extraction methods of electrical fire material evidence;

1 Scope

GB/T 16840.8-2021 is the Chinese national standard on technical determination methods for electrical fire evidence - part 8: method of thermal analysis, in the field of environment and health protection, safety. 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 20 August 2021 by the State Administration for Market Regulation; Standardization Administration of China, and has been in force since 20 August 2021. Classification: ICS 13.220.20, CCS C80/89. 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.

This document specifies the principle of thermal analysis method, equipment, sample extraction, sample preparation, Sample filling, test method, judgment basis and judgment result. This document is applicable to the appraisal of the severity of burnt damage to the inner and outer layers of the insulation layer residues on the fire site.

2 Normative references

The contents of the following documents constitute the indispensable clauses of this document through normative references in the text. Among them, dated quotations Only the version corresponding to that date is applicable to this document; for undated reference documents, the latest version (including all amendments) is applicable to This document.

GB/T 1844.1 Plastic symbols and abbreviations Part

3 Terms and definitions

GB/T 13464, GB/T 13966, GB/T 1844.1, GB/T 19267.12 and the following terms and definitions apply to this document.

3.1 Method of thermal analysis A method of measuring the relationship between the physical properties of a substance and the temperature under program temperature control.

3.2 Thermogravimetry; TG A method of measuring the relationship between the quality of a sample and the temperature or time under program temperature control and a certain atmosphere.

3.3 Microcalorimetry microscale combustion calorimeter; MCC A method to measure the complete oxidation and combustion performance of the gaseous decomposition products of a sample under a programmed temperature and a certain atmosphere.

3.4 Innersideofinsulationlayer The surface layer where the wire insulation layer is in contact with the metal conductor.

3.5 Outersideofinsulationlayer The surface layer of the wire insulation layer directly exposed to the air.

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