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

GB/T 9816.1-2023

Thermal-links - Part 1: Requirements and application guide

热熔断体 第1部分：要求和应用导则

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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 Part 1 of GB/T 9816 "Thermal Links": GB/T 9816 has issued the following parts:

--- Part 1: Requirements and application guidelines;

--- Part 2: Special requirements for organic temperature-sensitive thermal fuses;

--- Part 3: Special requirements for fusible metal temperature-sensitive thermal-links: This document replaces GB/T 9816:1-2013 "Thermal links Part 1: Requirements and application guidelines", and GB/T 9816:1-2013 In comparison, except for structural adjustments and editorial changes, the main technical changes are as follows:

- a) The expression about Appendix H has been added in the scope (see Chapter 1);
- b) Changed the definition of "holding temperature" (see 3:3, 3:3 of the:2013 edition);
- c) Added the requirements for thermal link packaging components (see 4:4);
- d) Change the number of samples required for the type test, change the test sequence and sample groups in Table 1, and divide the suspension section; Added the applicability description of each appendix (see Chapter 5, Chapter 5 of the:2013 edition);
- e) Added the terms of electrical conditions (see 6:1);

- f) The requirements for the tracking resistance index of materials have been changed (see 6:3, 6:3 of the:2013 edition);
- g) Added the position of the metal screen in the document, and some special thermal fuse installation application instructions (see Chapter 8);
- h) Changed the chapter title to "Structure Requirements" (see Chapter 9, Chapter 9 of the:2013 edition), and changed the structure of Chapters 9 and 10 and the sequence of test items (see Chapter 9 and Chapter 10, Chapter 9 and Chapter 10 of the:2013 edition);
- i) Added requirements for contacts used in current paths (see 9:3);
- j) Increased accessible mounting brackets or metal parts (see 9:4);

1 Scope

GB/T 9816.1-2023 is Part 1 of the Chinese series on thermal links, and sets the requirements and application guidance. A thermal link is the small one-shot fuse buried in a hairdryer, a coffee machine, a transformer winding or a battery pack, whose only job is to open the circuit for ever when the temperature reaches a set point. It is the last line of defence when the thermostat has stuck, so it must not operate early over years of normal cycling and must not fail to operate late. The standard sets the general requirements, the general test conditions, the categories, the marking, the documentation, the constructional and electrical requirements, the temperature test, the corrosion resistance and the manufacturer's verification procedure, with normative annexes giving the application guidelines, the thermal ageing test and the seal ageing test, and an informative annex on the extended holding temperature. It took effect on 1 June 2024.

This document specifies the classification, structural requirements, electrical requirements, temperature test, and technical requirements for rust prevention of thermal links: This document applies to electrical appliances, electronic equipment and similar components installed in general indoor environments to prevent them from malfunctioning In case of overheating of the thermal link:

Note 1: The equipment is not necessarily designed to generate heat:

Note 2: The effectiveness of over-temperature protection is related to the installation position and installation method of the thermal fuse and the magnitude of the current it carries: This document may also be used in non-indoor conditions if the climatic and other conditions in which the thermal-link is located are similar to those specified in this document: The thermal link used under the condition: This document also applies to thermal-links of simple shape (such as fusible links or fuses), as long as the molten material discharged during operation does not affect affect the safe use of equipment, especially for hand-held or portable devices, regardless of their location, will not affect their safe use: Appendix H of this document applies to thermal-link bodies that have been

approved by this document, but are encapsulated in a metal or non-metal shell and equipped with Thermal link package assembly with terminals/leads: This document applies to thermal links with a rated voltage not exceeding 690V AC and DC and a rated current not exceeding 63A: The purpose of this document is to:

a) Formulate requirements for thermal links;

b) define the method of testing;

c) Provide useful information for the application of thermal links in equipment: This document does not apply to:

---Thermal links used in extreme conditions such as corrosive or explosive atmospheres;

--- Thermal fuses on AC circuits with frequencies below 45Hz or above 62Hz:

2 Normative references

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

GB/T 4207 Method for determination of tracking resistance index and relative tracking index of solid insulating materials (GB/T 4207-2022, IEC 60112:2020, IDT)

GB/T 5169:12-2013 Fire hazard tests for electrical and electronic products - Part 12: Basic test methods for glow wire/hot wire materials Glow-wire flammability index (GWFI) test method for materials (

IEC 60695-2-12:2010, IDT)

GB/T 5169:13-2013 Fire hazard tests for electrical and electronic products - Part 13: Basic test methods for glow wire/hot wire materials Glow-wire ignition temperature (GWIT) test method for materials (

IEC 60695-2-13:2010, IDT)

GB/T 5169:16-2017 Fire Hazard Tests for Electrical and Electronic Products Part 16: Test Flame 50W Horizontal and Vertical Fire Flame test method (

IEC 60695-11-10:2013, IDT)

GB/T 5169:21-2017 Fire Hazard Tests for Electrical and Electronic Products Part 21: Abnormal Hot Ball Pressure Test Method (

IEC 60695-10-2:2014, IDT)