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

**GB/T 42924.4-2023**

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**Plastics - Smoke generation - Determination of the corrosivity  
of fire effluents - Part 4: Dynamic decomposition method using  
a conical radiant heater**

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### Foreword

This document complies with the provisions of GB/T 1.1-2020 "Standardization Work Guidelines Part 1. Structure and Drafting Rules of Standardization Documents"

Drafting.

This document is Part 4 of GB/T 42924 "Determination of the corrosiveness of combustion streams generated by plastic smoke". GB/T 42924 has been

The following sections were published.

---Part 1. General terms and applications;

---Part 4. Dynamic decomposition method using cone corrosion meter.

This document is equivalent to ISO 11907-4:1998 "Determination of the corrosiveness of combustion streams generated by plastic smoke - Part 4. Using cones

Dynamic decomposition method of corrosion meter".

Please note that some content in this document may be subject to patents. The publisher of this document assumes no responsibility for identifying patents.

### Introduction

Smoke corrosiveness refers to the functional impairment of a material or product due to the corrosive effects of smoke. These corrosive effects are important in assessing fire damage an important factor in the extent and loss.

This document describes a dynamic testing procedure designed solely to measure and characterize the effects of a material (or product or system) on

The heat and flame response characteristics should not be used alone to describe or

evaluate the fire hazard of materials (or products or systems) under actual conditions, or as a

The only source of basis for legal regulations relating to the corrosiveness of combustion streams.

There are high temperatures and combustion products during the test, so there is a risk of burns, igniting clothing or other objects, and inhaling combustion products. in progress

During the test, you need to wear goggles and protective gloves. Do not touch the cone heater and related fixtures without using protective gloves. Use the device

Design a suitable exhaust system to exhaust the combustion products flowing through the exposure chamber, and discharge the collected combustion products into the fume hood at the end of the test. Measurement

Before the test, check whether the exhaust system is working properly and ensure that combustion products are discharged into the building exhaust system with sufficient capacity.

Combustion products collected through the normal exhaust system should have corresponding collection and ventilation measures.

At present, there is no smoke corrosive determination method related to the plastic field in China, so it is necessary to develop a method to provide information for subsequent related research work.

Technical Support. GB/T 42924 aims to provide a method for determining the corrosiveness of plastic combustion streams and is intended to consist of two parts.

---Part 1.General terminology and applications. The purpose is to provide guidance on the applicability of the combustion flow corrosiveness test in GB/T 42924.4

Guidance, introducing other existing test methods and explaining the differences between acidity, corrosivity and toxicity.

---Part 4.Dynamic decomposition method using cone corrosion meter. The purpose is to provide the user with a specific combustion stream corrosivity

Dynamic testing methods.

Determination of the corrosiveness of combustion streams produced by plastic smoke

Part 4.Dynamic decomposition method using a cone corrosion meter

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## 1 Avoid misleading

This document is only used to measure and describe the response characteristics of

materials, products, and systems to heat or flame under controlled laboratory conditions and should not be used alone.

Used exclusively to describe or evaluate the fire hazard of materials, products, and systems under actual conditions, or as a basis for regulations related to the corrosiveness of combustion flows.

the only source of data.

## 2 Avoid test hazards

There are high temperatures and combustion products during the test, so there is a risk of burns, igniting clothing or other objects, and inhaling combustion products. in progress

During testing, goggles and protective gloves should be worn. Cone heaters and associated fixtures should not be touched without using protective gloves.

Use a suitably designed exhaust system to remove combustion products flowing through the exposure chamber. At the end of the test, the collected combustion products are discharged into the collection

In the hood.

Before testing, check whether the exhaust system is working properly and ensure that combustion products are discharged into the building exhaust system with sufficient capacity.

Corresponding collection and ventilation measures should be taken for combustion products that cannot be collected through the normal exhaust system.

## 1 Scope

1.1 This document describes a method for determining the corrosive effects of combustion emissions from plastic materials or products by measuring metal loss in electrodes.

1.2 This document can be used to evaluate materials or products and provide data to assist product design, development and research.

1.3 The corrosion results provided in this document are obtained from plastic materials or products with dimensions not exceeding 100mm x 100mm. The results are consistent with actual results.

The correlation to international fires is unclear.

1.4 This method determines the extent of corrosion by measuring the increase in resistance of a metal circuit. Increased resistance and metal loss due to corrosion further

This results in a reduction in the conductive cross-sectional area.

1.5 This document is suitable for measuring and describing the response of materials and/or products to heat and flame under controlled conditions. It is not suitable for use under actual fire conditions.

Directly describe or evaluate the fire hazard or risk of materials under conditions. As they relate to specific end uses, the results of this trial are available as an element in assessing fire hazard or risk.

## 2 Normative reference documents

The contents of the following documents constitute essential provisions of this document through normative references in the text. Among them, the dated quotations

For undated referenced documents, only the version corresponding to that date applies to this document; for undated referenced documents, the latest version (including all amendments) applies to this document.

GB/T 16172-2007 Test method for heat release rate of building materials (ISO 5660-1.2002, IDT)

GB/T 42924.1-2023 Determination of corrosiveness of combustion streams generated by plastic smoke Part 1.General terms and applications