PD ISO/TR 23107:2021



BSI Standards Publication

# Criteria for assessment of new extinguishants for inclusion in the ISO 14520 series

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# National foreword

This Published Document is the UK implementation of ISO/TR 23107:2021. It supersedes PD ISO/TR 23107:2019, which is withdrawn.

The UK participation in its preparation was entrusted to Technical Committee FSH/18/6, Gaseous Extinguishing Media and Systems.

A list of organizations represented on this committee can be obtained on request to its committee manager.

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TECHNICAL REPORT

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# Criteria for assessment of new extinguishants for inclusion in the ISO 14520 series

*Critères pour l'évaluation de nouveaux agents extincteurs destinés à être inclus dans la série ISO 14520*



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# Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. ISO shall not be held responsible for identifying any or all such patent rights. Details of any patent rights identified during the development of the document will be in the Introduction and/or on the ISO list of patent declarations received (see www.iso.org/patents).

Any trade name used in this document is information given for the convenience of users and does not constitute an endorsement.

For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT), see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 21, *Equipment for fire protection and fire fighting*, Sub-committee SC 8, *Gaseous media and firefighting systems using gas*.

This second edition cancels and replaces the first edition (ISO/TR 23107:2019), which has been technically revised.

The main changes compared to the previous edition are as follows:

— the title has been modified;

— additional information has been added to the Introduction;

— the Scope has been reworded;

— checklist items 7.5, 7.5.1 and 7.5.2 have been renumbered 8, 8.1 and 8.2 respectively.

Any feedback or questions on this document should be directed to the user’s national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.


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# Introduction

The ISO 14520 series sets forth important information necessary for introducing total flooding fire extinguishing agents into the marketplace. Important information includes that related to physical, thermodynamic and chemical properties, safe exposure criteria, performance criteria such as minimum extinguishing and design concentrations, and environment characteristics.

This document includes technical information related to the design and use of total flooding fire extinguishing systems using liquefied or non-liquefied gaseous fire extinguishing agents. Suggested minimum extinguishant information includes:

— identification;

— specifications;

— physical properties;

— minimum extinguishing concentrations and minimum design concentrations;

— use parameters;

— toxicity;

— environmental properties;

— system design.

If the extinguishant manufacturer so wishes, the required information can be supplemented with additional information that can prove useful in matters related to the manufacturer, storage, use and handling of extinguishant containers.

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# Criteria for assessment of new extinguishants for inclusion in the ISO 14520 series

## 1 Scope

This document suggests specific types of information that can be useful for assessing safe and effective gaseous extinguishing media for inclusion in the ISO 14520 series.

## 2 Normative references

There are no normative references in this document.

## 3 Terms and definitions

No terms and definitions are listed in this document.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

## 4 Checklist

The following checklist provides examples of information used for the review of new gaseous extinguishing media in the ISO 14520 series.

| | | | |
|---|---|---|---|
| 1 | Extinguishant identification | | |
| | 1.1 | Extinguishant designation [American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) designation, or equivalent] | |
| | 1.2 | Chemical name (each component if a mixture) | |
| | 1.3 | Chemical formula | |
| | 1.4 | Chemical Abstracts Service (CAS) number (each component if a mixture) | |
| | | | |
| 2 | Extinguishant specifications, including (as applicable) | | |
| | 2.1 | Purity | |
| | 2.2 | Acidity (halocarbons) | |
| | 2.3 | Moisture content | |
| | 2.4 | Non-volatile residue | |
| | 2.5 | Suspended matter | |
| | 2.6 | Oxygen content (inert gases) | |
| | | | |
| 3 | Physical properties | | |

NOTE The unit of pressure, "bar", is in bar-gauge unless otherwise noted. For example, container pressures, such as fill pressure and super pressure, are in bar gauge. Atmospheric pressure, critical pressure, vapour pressure are in bar absolute.

[a] The Extinguishing Concentrations can be supported by full test reports. Tests can be conducted and reported in accordance with the current protocol in ISO 14520-1 and witnessed by an independent internationally recognized laboratory.

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