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Gaseous fire-extinguishing systems — Physical properties and system design —

Part 15: IG-541 extinguishant

Systèmes d'extinction d'incendie utilisant des agents gazeux — Propriétés physiques et conception des systèmes —

Partie 15: Agent extincteur IG-541

Reference number
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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).

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For an explanation on the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the WTO principles in the Technical Barriers to Trade (TBT), see the following URL: Foreword — Supplementary information.

The committee responsible for this document is ISO/TC 21, *Equipment for fire protection and fire fighting*, Subcommittee SC 8, *Gaseous media firefighting systems using gas*.

This third edition cancels and replaces the second edition (ISO 14520-15:2005), which has been technically revised.

ISO 14520 consists of the following parts, under the general title *Gaseous fire-extinguishing systems — Physical properties and system design*:

— *Part 1: General requirements*

— *Part 2: CF_3I extinguishant*

— *Part 5: FK-5-1-12 extinguishant*

— *Part 6: HCFC Blend A extinguishant*

— *Part 8: HFC 125 extinguishant*

— *Part 9: HFC 227ea extinguishant*

— *Part 10: HFC 23 extinguishant*

— *Part 11: HFC 236fa extinguishant*

— *Part 12: IG-01 extinguishant*

— *Part 13: IG-100 extinguishant*

— *Part 14: IG-55 extinguishant*

— *Part 15: IG-541 extinguishant*

Parts 3, 4, and 7, which dealt with FC-2-1-8, FC-3-1-10, and HCFC 124 extinguishants, respectively, have been withdrawn, as these types are no longer manufactured.

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Gaseous fire-extinguishing systems — Physical properties and system design —

Part 15: IG-541 extinguishant

1 Scope

This part of ISO 14520 contains specific requirements for gaseous fire-extinguishing systems, with respect to the IG-541 extinguishant. It includes details of physical properties, specification, usage, and safety aspects.

This part of ISO 14520 covers systems operating at nominal pressures of 150 bar, 200 bar, and 300 bar at 15 °C. This does not preclude the use of other systems, although design data for other pressures are not available at this time.

2 Normative reference

The following documents, in whole or in part, are normatively referenced in this document and are indispensable for its application. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 14520-1:2006, *Gaseous fire-extinguishing systems — Physical properties and system design — Part 1: General requirements*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 14520-1 apply.

4 Characteristics and uses

4.1 General

IG-541 is a colourless, odourless, electrically non-conductive gas with a density approximately the same as that of air.

It is an inert gas mixture consisting nominally of 52 % nitrogen, 40 % argon, and 8 % carbon dioxide. The mixture specification for IG-541 (based on 8 % carbon dioxide with tolerance of ± 5 %) is as follows:

a) carbon dioxide percentage range 7,6 % to 8,4 %;

b) argon percentage range 37,2 % to 42,8 %;

c) nitrogen percentage range 48,8 % to 55,2 %.

Individual container or batch analysis is based on carbon dioxide measurement only.

Extinguishant IG-541 shall comply with the specification shown in Table 1.

The physical properties are shown in Table 2.

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