

Australian Standard[®]

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

**Part 15: IG-541 extinguishant
(ISO 14520-15:2005, MOD)**

STANDARDS
Australia



This Australian Standard® was prepared by Committee FP-011, Special Hazard Fire Protection Systems. It was approved on behalf of the Council of Standards Australia on 9 September 2009.

This Standard was published on 21 October 2009.

The following are represented on Committee FP-011:

- Australian Industry Group
 - Australian Museum
 - Commerce Queensland
 - CSIRO Manufacturing and Materials Technology
 - Department of Defence (Australia)
 - Engineers Australia
 - Fire Protection Association Australia
 - Institute of Security Executives
 - National Fire Industry Association
 - Society of Fire Protection Engineers Australasian Chapter
-

This Standard was issued in draft form for comment as DR 07390.

Standards Australia wishes to acknowledge the participation of the expert individuals that contributed to the development of this Standard through their representation on the Committee and through the public comment period.

Keeping Standards up-to-date

Australian Standards® are living documents that reflect progress in science, technology and systems. To maintain their currency, all Standards are periodically reviewed, and new editions are published. Between editions, amendments may be issued.

Standards may also be withdrawn. It is important that readers assure themselves they are using a current Standard, which should include any amendments that may have been published since the Standard was published.

Detailed information about Australian Standards, drafts, amendments and new projects can be found by visiting www.standards.org.au

Standards Australia welcomes suggestions for improvements, and encourages readers to notify us immediately of any apparent inaccuracies or ambiguities. Contact us via email at mail@standards.org.au, or write to Standards Australia, GPO Box 476, Sydney, NSW 2001.

Australian Standard[®]

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

**Part 15: IG-541 extinguishant
(ISO 14520-15:2005, MOD)**

First published as AS 4214.1—1995, AS 4214.2—1995, AS 4214.3—1995,
AS 4214.4—1995, AS 4214.5—1995, AS 4214.6—1995 and AS 4214.7—1995.
Revised, amalgamated and designated as AS 4214—2002.
AS 4214—2002 revised and designated, in part, as AS ISO 14520.15—2009.

COPYRIGHT

© Standards Australia

All rights are reserved. No part of this work may be reproduced or copied in any form or by any means, electronic or mechanical, including photocopying, without the written permission of the publisher.

Published by Standards Australia GPO Box 476, Sydney, NSW 2001, Australia

ISBN 0 7337 9280 4

PREFACE

This Standard was prepared by the Standards Australia Committee FP-011, Special Hazard Fire Protection Systems, to supersede Appendix E of AS 4214—2002, *Gaseous fire extinguishing systems*.

This Standard is an adoption with Australian modifications and has been reproduced from ISO 14520-15:2005, *Gaseous media fire-extinguishing systems—Physical properties and system design, Part 15: IG-541 extinguishant*, and has been varied, as indicated, to take account of Australian conditions. The modification is specified in Appendix ZZ.

The objective of this Standard is to provide the necessary technical data and requirements for IG-541 extinguishant to be used successfully and safely in a fire extinguishing system complying with AS ISO 14520.1.

As this Standard is reproduced from an International Standard, the following applies:

- (a) Its number appears on the cover and title page while the international standard number appears only on the cover.
- (b) In the source text ‘this International Standard’ should read ‘this Australian Standard’.
- (c) A full point substitutes for a comma when referring to a decimal marker.

The full suite of AS ISO 14520 Standards consists of the following:

AS

14520	Gaseous fire extinguishing systems—Physical properties
14520.1	Part 1: General requirements
14520.2	Part 2: CF ₃ I extinguishant
14520.5	Part 5: FK-5-1-12 extinguishant
14520.6	Part 6: HCFC Blend A extinguishant
14520.8	Part 8: HFC 125 extinguishant
14520.9	Part 9: HFC 227ea extinguishant
14520.10	Part 10: HFC 23 extinguishant
14520.11	Part 11: HFC 236fa extinguishant
14520.12	Part 12: IG-01 extinguishant
14520.13	Part 13: IG-100 extinguishant
14520.14	Part 14: IG-55 extinguishant
14520.15	Part 15: IG-541 extinguishant

Reference to the International Standard should be replaced by reference to the equivalent Australian Standard, as follows:

<i>Reference to International Standard</i>		<i>Australian Standard</i>	
ISO		AS ISO	
14520	Gaseous fire-extinguishing systems— Physical properties and system design	14520	Gaseous fire-extinguishing systems— Physical properties and system design
14520-1	Part 1: General requirements	14520.1	Part 1: General requirements

The term ‘normative’ has been used in this Standard to define the application of the appendix to which it applies. A ‘normative’ appendix is an integral part of a Standard.

AUSTRALIAN STANDARD

Gaseous fire-extinguishing systems—Physical properties and system design

Part 15:

IG-541 extinguishant (ISO 14520-15:2005, MOD)**1 Scope**

This part of ISO 14520 gives 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 and is applicable to 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; however, design data for other pressures were not available at time of publication.

2 Normative references

The following referenced documents are indispensable for the application of this document. 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:—¹⁾, *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**

Extinguishant IG-541 shall comply with the specification according to Table 1.

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, with the following mixture specification (based on 8 % carbon dioxide with tolerance of ± 5 %).

- a) Carbon dioxide: range of 7,6 % to 8,4 %.
- b) Argon: range of 37,2 % to 42,8 %.
- c) Nitrogen: range of 48,8 % to 55,2 %.

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

1) To be published. (Revision of ISO 14520-1:2000)