



SIS - Standardiseringskommissionen i Sverige

Handläggande organ

**SMS, SVERIGES MEKANSTANDARDISERING**

## SVENSK STANDARD SS-EN 27 201-2

Festställt

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### **Brand och räddning — Släckmedel — Halogenkolväten — Del 2: Säkerhetsföreskrifter om hantering och överflyttning av halon 1211 och 1301 (ISO 7201-2:1991)**

Den europeiska standarden EN 27 201-2:1994 gäller som svensk standard. EN 27 201-1:1994 ikraftsätter ISO 7201-2:1991. Detta dokument innehåller den officiella engelska versionen av EN 27 201-2:1994.

Motsvarigheten och aktualiteten i svensk standard till de publikationer som omnämns i denna standard framgår av "Katalog över svensk standard", som årligen ges ut av SIS. I katalogen redovisas internationella och europeiska standarder som fastställts som svenska standarder och övriga gällande svenska standarder.

### **Fire protection — Fire extinguishing media — Halogenated hydrocarbons — Part 2: Code of practice for safe handling and transfer procedures (ISO 7201-2:1991)**

The European Standard EN 27 201-2:1994 has the status of a Swedish Standard. EN 27 201-1:1994 endorses ISO 7201-2:1991. This document contains the official English version of EN 27 201-2:1994.

Swedish Standards corresponding to documents referred to in this Standard are listed in "Catalogue of Swedish Standards", annually issued by SIS. The Catalogue lists, with reference number and year of Swedish approval, International and European Standards approved as Swedish Standards as well as other Swedish Standards.



EUROPEAN STANDARD  
NORME EUROPÉENNE  
EUROPÄISCHE NORM

EN 27201-2

May 1994

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UDC 614.842.612 : 661.723

Descriptors: Fire protection, fire extinguishing installation, dangerous materials, hydrocarbons, halohydrocarbons, materials handling, specifications, safety requirements

English version

Fire protection — Fire extinguishing media —  
Halogenated hydrocarbons  
Part 2: Code of practice for safe handling and transfer  
procedures  
(ISO 7201-2 : 1991)

Protection contre l'incendie — Agents  
extincteurs — Hydrocarbures halogènes  
Partie 2: Specifications pour manipulation  
sure et transvasement  
(ISO 7201-2 : 1991)

Brandbekämpfung — Loschmittel —  
Halogenierte Kohlenwasserstoffe  
Teil 2: Festlegungen für sichere Handhabung  
und Umfüllen  
(ISO 7201-2 : 1991)

This European Standard was approved by CEN on 1994-05-16. CEN members are bound to comply with the CEN/CENELEC Internal Regulations which stipulate the conditions for giving this European Standard the status of a national standard without any alteration.

Up-to-date lists and bibliographical references concerning such national standards may be obtained on application to the Central Secretariat or to any CEN member.

This European Standard exists in three official versions (English, French, German). A version in any other language made by translation under the responsibility of a CEN member into its own language and notified to the Central Secretariat has the same status as the official versions.

CEN members are the national standards bodies of Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and United Kingdom.

**CEN**

European Committee for Standardization  
Comité Européen de Normalisation  
Europäisches Komitee für Normung

Central Secretariat: rue de Stassart 36, B-1050 Brussels

## Foreword

The endorsement of the International Standard ISO 7201-2 : 1991 as a European Standard was recommended by the Technical Committee CEN/TC 191, the secretariat of which is held by BSI, on 1992-10-20.

The text of the International Standard ISO 7201-2 : 1991 was approved by CEN as a European Standard without any modification.

This European Standard is only available in the English and French versions.

In accordance with CEN Regulations the foreword to the ISO standard is not included in this European Standard. The following warning which does not appear in the foreword to the ISO standard, is included here with the agreement of CEN/TC 191.

**Warning.** Halon 1211 and halon 1301 are listed in the Montreal Protocol on Substances that Deplete the Ozone Layer. There are agreements which limit their use. Users of this European Standard are advised to consult the relevant authorities on these matters when supplying or handling halon 1211 or halon 1301.

**Compliance with this European Standard does not in itself confer immunity from legal obligations.**

This European Standard shall be given the status of a national standard, either by publication of an identical text or by endorsement, at the latest by November 1994, and conflicting national standards shall be withdrawn at the latest by November 1994.

In accordance with the CEN/CENELEC Internal Regulations, the following countries are bound to implement this European Standard: Austria, Belgium, Denmark, Finland, France, Germany, Greece, Iceland, Ireland, Italy, Luxembourg, Netherlands, Norway, Portugal, Spain, Sweden, Switzerland and the United Kingdom.

# Fire extinguishing media — Halogenated hydrocarbons —

## Part 2:

### Code of practice for safe handling and transfer procedures of halon 1211 and halon 1301

#### 1 Scope

This part of ISO 7201 recommends procedures to be used in the transfer of halon 1211 and halon 1301 from one container to another to reduce unnecessary emission of these halons to the atmosphere. It also provides recommendations and information relevant to the health and safety of persons engaged in such procedures.

#### 2 Normative reference

The following standard contains provisions which, through reference in this text, constitute provisions of this part of ISO 7201. At the time of publication, the edition indicated was valid. All standards are subject to revision, and parties to agreements based on this part of ISO 7201 are encouraged to investigate the possibility of applying the most recent edition of the standard indicated below. Members of IEC and ISO maintain registers of currently valid International Standards.

ISO 7201-1:1989, *Fire protection — Fire extinguishing media — Halogenated hydrocarbons — Part 1: Specifications for halon 1211 and halon 1301*.

#### 3 Definition

For the purposes of this part of ISO 7201, the following definition applies.

**3.1 halon:** Halogenated hydrocarbon used as a fire extinguishing medium.

The term "halon(s)" is used in this part of ISO 7201 to mean halon 1211 and halon 1301.

#### NOTES

1 The following numbering system is used to identify individual halons. The word "halon" is followed by a number, usually comprising four digits, which represents, in the order given, the number of carbon, fluorine, chlorine and bromine atoms. Where this number would terminate with one (or more) zero(s), such zeros are omitted. Thus halon 1211 is bromochlorodifluoromethane (CF<sub>2</sub>ClBr) and halon 1301 is bromotrifluoromethane (CF<sub>3</sub>Br).

2 Halon 1211 is a colourless, faintly sweet-smelling gas. Halon 1301 is a colourless, odourless gas.

#### 4 Materials for use in contact with halon 1211 and halon 1301

Halon 1211 and halon 1301 are stable and inert to most common construction materials.

Manufacturers' test data should be consulted when selecting materials suitable for use in contact with halons.

## 5 Avoidance of mixing and/or contamination

### 5.1 Avoidance of mixing

Halon 1211 and halon 1301 are miscible in all proportions. Halons should not be mixed because this will unnecessarily complicate their subsequent recovery and reprocessing.

### 5.2 Avoidance of contamination

Precautions should be taken to prevent the entry of oil, water and/or other foreign matter into halon containers.

**NOTE 3** Excessive moisture in containers may lead to corrosion, either directly, or indirectly by causing hydrolysis of the halon.

## 6 Pressure hazard

### 6.1 General

Halons are shipped, stored and used in fire extinguishing equipment as liquefied gases under pressure. Appropriate precautions should be observed when filling and handling containers.

### 6.2 Pressure control in transfer procedures

It is essential that nitrogen cylinders are fitted with a pressure-reducing valve to control the nitrogen pressure to not more than the working pressure of the halon containers in use at any particular time. The pressure-reducing valve should be fitted with a pressure gauge on the outlet side, and with a pressure-relief valve in the line to vent excess pressure if the pressure-reducing valve fails.

**WARNING** — Bursting discs are not suitable pressure-relief devices for this application because their operation will vent the total contents of the halon container.

## 7 Toxicity hazard

### 7.1 Skin contact hazard

Direct contact with liquid halons can degrease the skin and cause a strong chilling effect. Gloves and eye protection should be worn during transfer procedures.

## 7.2 Inhalation hazard

### 7.2.1 Natural (undecomposed) halons

#### 7.2.1.1 Effects of exposure

Tests on human volunteer subjects have shown that the maximum safe exposures are 7 % (V/V) to 10 % (V/V) of halon 1301 for 1 min and 4 % (V/V) to 5 % (V/V) of halon 1211 for 1 min.

After exposure for 1 min at these concentrations, the volunteers experienced symptoms of dizziness and slight tingling of the fingers and toes. Exposures to concentrations less than these for several minutes would be unlikely to produce any significant effect, but prolonged exposure to concentrations greater than these is hazardous and should be avoided.

#### 7.2.1.2 Precautions

Attention should be paid to checking for and sealing any leaks in the equipment. All transfer procedures should be carried out in well-ventilated areas. It is good practice to avoid all unnecessary exposure to halons and an occupational exposure limit of 1000 ppm (8 h time-weighted average) should be applied.

#### 7.2.1.3 Treatment of affected persons

Persons suffering from overexposure to halon vapour should immediately move, or be moved, to an area containing fresh air. In treating persons suffering from the effects of overexposure to halons, the use of epinephrine (adrenaline) and similar drugs should be avoided because they may produce cardiac arrhythmias, including ventricular fibrillation.

### 7.2.2 Decomposition products

#### 7.2.2.1 Formation of decomposition products

On exposure to a flame or hot surface, halons pyrolyse into decomposition products usually identified as halogen acids (i.e. HF, HCl and HBr) and free halogens (e.g. Cl<sub>2</sub> and Br<sub>2</sub>). Halon decomposition products have a characteristic, sharp, acrid odour even in minute concentrations that are far below the concentrations considered to be immediately dangerous. The irritation produced by these products provides a built-in warning system and thus encourages people to evacuate the area.