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**Refrigerating systems and heat  
pumps — Safety and environmental  
requirements —**

**Part 4:  
Operation, maintenance, repair and  
recovery**

*Systèmes frigorifiques et pompes à chaleur — Exigences de sécurité et  
d'environnement —*

*Partie 4: Fonctionnement, maintenance, réparation et récupération*



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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.

International Standards are drafted in accordance with the rules given in the ISO/IEC Directives, Part 2.

The main task of technical committees is to prepare International Standards. Draft International Standards adopted by the technical committees are circulated to the member bodies for voting. Publication as an International Standard requires approval by at least 75 % of the member bodies casting a vote.

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.

ISO 5149-4 was prepared by Technical Committee ISO/TC 86, *Refrigeration and air-conditioning*, Subcommittee SC 1, *Safety and environmental requirements for refrigerating systems*.

This first edition of ISO 5149-4, together with ISO 5149-1, ISO 5149-2 and ISO 5149-3, cancels and replaces ISO 5149:1993, which has been technically revised.

ISO 5149 consists of the following parts, under the general title *Refrigerating systems and heat pumps — Safety and environmental requirements*:

*Part 1: Definitions, classification and selection criteria*

*Part 2: Design, construction, testing, marking and documentation*

*Part 3: Installation site*

*Part 4: Operation, maintenance, repair and recovery*

# Refrigerating systems and heat pumps — Safety and environmental requirements —

## Part 4:

## Operation, maintenance, repair and recovery

### 1 Scope

This part of ISO 5149 specifies requirements for safety and environmental aspects in relation to operation, maintenance and repair of refrigerating systems and the recovery, reuse and disposal of all types of refrigerant, refrigerant oil, heat transfer fluid, refrigerating system and part thereof.

These requirements are intended to minimize risks of injury to persons and damage to property and the environment resulting from improper handling of the refrigerants or from contaminants leading to system breakdown and resultant emission of the refrigerant.

[Subclauses 4.1.1, 4.1.2, 4.3, 5.1.1 to 5.1.4, 5.2, 5.3.1, 5.3.3 and 6.6](#) of this part of ISO 5149 are not applicable to unitary systems having a power cord, being factory sealed, and in conformance with IEC 60335 series.

### 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 5149-1:2014, *Refrigerating systems and heat pumps — Safety and environmental requirements — Part 1: Definitions, classification and selection criteria*

ISO 5149-2:2014, *Refrigerating systems and heat pumps — Safety and environmental requirements — Part 2: Design, construction, testing, marking and documentation*

ISO 11650, *Performance of refrigerant recovery and/or recycling equipment*

IEC 60335-2-104, *Household and similar electrical appliances — Safety — Part 2-104: Particular requirements for appliances to recover and/or recycle refrigerant from air conditioning and refrigeration equipment*

### 3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 5149-1 apply.

### 4 General requirements

#### 4.1 Operation instructions

**4.1.1** Care shall be taken to ensure that the personnel charged with the operation, supervision and maintenance of the refrigerating system are adequately instructed and competent with respect to their tasks. The installer of the refrigerating system shall draw attention to the necessity for adequate instruction of operating and supervising personnel. Typical in-service inspection requirements are shown in [Annex D](#).