
**Safety data sheet for chemical
products — Content and order
of sections**

*Fiches de données de sécurité pour les produits chimiques — Contenu
et plan type*

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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 11014 was prepared by Technical Committee ISO/TC 47, *Chemistry*.

This first edition of ISO 11014 cancels and replaces the first edition of ISO 11014-1:1994, which has been technically revised to align it with GHS:2007 [2].

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Introduction

The safety data sheet (SDS) for chemical products gives information on the safety, health and environmental protection aspects of these substances or mixtures. The SDS supplies, for these aspects, basic knowledge of the chemical products, and recommendations on protective measures and emergency actions. In some countries, this sheet is called a material safety data sheet (MSDS). Throughout this International Standard, the term SDS is used.

The SDS is a means of transferring essential hazard information (including information on transport, handling, storage and emergency actions) from the supplier of a chemical product to the recipient of the chemical product. It may also be used to transfer this information to institutions, services and other bodies that play a role in dealing with the chemical product.

The objective of this International Standard is to create consistency in providing information on safety, health and environmental matters for chemical products. In order to establish uniformity, certain requirements have been laid down as to how information on the chemical product shall be given (for instance the wording, numbering and sequence of the headings).

This International Standard provides flexibility to accommodate different text-processing/transmission systems.

The predecessor to this International Standard, ISO 11014-1:1994, has been applied worldwide since its publication.

In 1992, the UN Conference on the Environment and Development (UNCED) adopted Agenda 21, in which UNCED recommended a globally harmonized system of classification and labelling of chemicals (GHS [2]) including safety data sheets as one of the six areas for action identified in Chapter 19 on environmentally sound management of toxic chemicals. It includes guidance on the preparation of safety data sheets.

Some of the regional and national standards on SDS have been revised to be in line with the GHS.

The systematic review of ISO 11014-1:1994, conducted in 2006, resulted in the committee decision to revise. Accordingly, this International Standard has been developed by aligning the predecessor text with the GHS as regards hazard communication.

ISO 11014-2 was never published. Hence this International Standard is designated as the first edition of ISO 11014.

It does not necessarily reflect or represent the different international, regional, national or local regulatory requirements that may be specific for certain regions/countries/states. It is therefore recommended that reviews outlining the different international, regional, national or local regulatory requirements relevant to SDSs be made available to those who prepare SDSs.

The provision of this knowledge to SDS authors is intended to promote the establishment and acceptance of a unique SDS per chemical product in different regions/countries/states, enabling fully consistent information to be provided.

The obligations of the recipient of an SDS are beyond the scope of this International Standard. Some of them are included, however, to clearly differentiate between the obligations of the SDS and those of the recipient of the SDS.

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Safety data sheet for chemical products — Content and order of sections

1 Scope

This International Standard defines sections, content, and general format of the safety data sheet (SDS) for chemical products.

This International Standard does not define a fixed format, nor does it include a blank SDS.

2 Normative reference

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 1000, *SI units and recommendations for the use of their multiples and of certain other units*

ISO 80000-9, *Quantities and units — Part 9: Physical chemistry and molecular physics*

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3 Terms and definitions

For the purposes of this International Standard, the following terms and definitions apply.

3.1

chemical product

substance or mixture

3.2

exposure control

full range of precautionary measures to protect a user of a **chemical product** (3.1)

3.3

GHS classification

classification of substances and mixtures by the harmonized criteria in the *Globally harmonized system of classification and labelling of chemicals*^[2] according to their physical, health and environmental hazards

3.4

harm

physical injury or damage to health of people, or damage to property or the environment

[ISO/IEC Guide 51:1999^[1], definition 3.3]

3.5

hazard

potential source of **harm** (3.4)

[ISO/IEC Guide 51:1999^[1], definition 3.5]

**3.6
hazard statement**

statement assigned to a hazard class and category that describes the nature of the **hazard** (3.5) of a hazardous product, including, where appropriate, the degree of hazard

[GHS:2007 ^[2], 1.2].

**3.7
intended use**

use of a **chemical product** (3.1), process or service in accordance with information provided by a **supplier** (3.18)

NOTE Adapted from ISO/IEC Guide 51:1999 ^[1], 3.13.

**3.8
label element**

one type of information that has been harmonized for use in a label

EXAMPLES Pictogram, signal word.

NOTE Adapted from GHS:2007 ^[2], 1.2.

**3.9
mixture**

mixture or solution composed of two or more substances in which they do not react

[GHS:2007 ^[2], 1.2].

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**3.10
pictogram**

graphical composition that may include a **symbol** (3.19) plus other graphic elements, such as a border, background pattern or colour, that is intended to convey specific information

[GHS:2007 ^[2], 1.2].

**3.11
precautionary statement**

phrase (and/or pictogram) that describes recommended measures that should be taken to minimize or prevent adverse effects resulting from exposure to a hazardous **chemical product** (3.1), or improper storage or handling of a hazardous **chemical product** (3.1)

NOTE Adapted from GHS:2007 ^[2], 1.2.

**3.12
reasonably foreseeable misuse**

use of a **chemical product** (3.1), process or service in a way not intended by a **supplier** (3.18) but which may result from readily predictable human behaviour

NOTE Adapted from ISO/IEC Guide 51:1999 ^[1], 3.14.

**3.13
recipient**

party receiving a **chemical product** (3.1) for industrial or professional use, such as storage, handling, processing or packaging, from a **supplier** (3.18)

**3.14
risk**

combination of the probability of occurrence of **harm** (3.4) and the severity of that **harm** (3.4)

[ISO/IEC Guide 51:1999^[1], definition 3.2]

3.15**safety**

freedom from unacceptable **risk** (3.14)

[ISO/IEC Guide 51:1999 ^[1], definition 3.1]

3.16**signal word**

word used to indicate the relative level of severity of **hazard** (3.5) and alert the reader to a potential hazard on the label

EXAMPLES In the GHS, “danger” and “warning” are used as signal words.

NOTE Adapted from GHS:2007 ^[2], 1.2.

3.17**substance**

chemical elements and their compounds in the natural state or obtained by any production process, including any additive necessary to preserve the stability of the product and any impurities deriving from the process used, but excluding any solvent which may be separated without affecting the stability of the substance or changing its composition

[GHS:2007 ^[2], 1.2].

3.18**supplier**

party responsible for making a **chemical product** (3.1) available to a **recipient** (3.13)

3.19**symbol**

graphical element intended to succinctly convey information

[GHS:2007 ^[2], 1.2].

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4 General

An SDS applies to a chemical product as a whole.

Information contained in an SDS is non-confidential information on composition and ingredients may be given in a different way, provided Clause A.4 is observed.

Any supplier should provide a complete SDS to the recipient and shall report relevant information on safety, health and environment. The supplier shall keep the SDSs up to date and provide the recipient with the latest edition.

The recipient of an SDS is responsible for: acting in accordance with a risk assessment in regard of the conditions of chemical product use; taking necessary precautionary measures in a given work situation; and keeping users informed appropriately about hazards relevant to their individual workplace. When formulating specific instructions for the workplace, the recipient should consider the general recommendations of relevant SDSs.

Since an SDS is merely chemical product related, it cannot take into account all the possible situations which may arise at any given workplace. Therefore an SDS only constitutes a part of the information necessary to establish a safety programme.

Comprehensive information about a substance or mixture should be provided by an SDS for use in workplace chemical control regulatory frameworks.

When a chemical product is a mixture, it is not necessary to produce individual SDSs corresponding to each relevant ingredient. Instead, a single SDS for a mixture may be produced and provided. Where information on each ingredient constituting the chemical product is useful, it should be provided.

5 Contents and general layout of an SDS

An SDS shall provide the following 16 document headings and relevant information about a chemical product. Text of the headings, numbering and sequence shall not be altered.

- 1) Chemical product and company identification
- 2) Hazards identification
- 3) Composition/information on ingredients
- 4) First-aid measures
- 5) Fire-fighting measures
- 6) Accidental release measures
- 7) Handling and storage
- 8) Exposure controls and personal protection
- 9) Physical and chemical properties
- 10) Stability and reactivity
- 11) Toxicological information
- 12) Ecological information
- 13) Disposal considerations
- 14) Transport information
- 15) Regulatory information
- 16) Other information

A specific serial number combined with SDS validity area identification should be entered for easier identification by an author.

Under each of the 16 document headings, relevant information shall be stated. If this information is not available, then the reason for non-availability shall be stated. With the exception of heading 16, "Other information", blanks shall not be left. In an SDS, the source of information need not necessarily be provided. Nonetheless, the source should preferably be provided to increase confidence in the information.

The 16 sections corresponding to the 16 document headings shall be completed in accordance with Annex A.

These 16 sections may be subdivided by means of subheadings. However, the subheadings shall not be numbered.

The 16 sections shall be separated clearly. The headings and subheadings shall be presented in a conspicuous way.

When subheadings or items are given, they shall be given in the sequence specified in Annex A.

Every page of an SDS shall include the name of the chemical product as used on the label, and shall be dated and numbered. The date indicated shall be the latest revision date. The page numbering system should include the total number of pages or should indicate the last page as such.

The name of the chemical product shall be the systematic chemical name or the trivial, common or generic chemical name as used on the label. If the systematic chemical name is long, it may be abbreviated, with an explanation of the abbreviation used being entered under section 1 or section 3.

Where a specific serial number and revision date (version number) are written on the first page of an SDS, only the serial number and page may be entered on every page.

The original preparation date as well as the date of any revision should be entered on the first page of an SDS.

Texts in an SDS should be written in a clear and concise manner. Commonly used phrases are recommended. An SDS should be in a language acceptable to the recipient.

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