

# **UN/GHS-SC/4/INF.14/Add.1**

**Sub-Committee of Experts  
on the Globally Harmonized System of Classification  
and Labelling of Chemicals  
(Fourth session, 9-11 December 2002)  
Agenda item 2**

---

**Revision of ISO 11014 Safety Data Sheet**

**Comparison among Draft of Revision, GHS-SDS and ISO11014-1:1994**  
ISO/TC 47  
Secretariat: JISC/JCIA

**Warning**

This document is not an ISO International Standard. It is distributed for review and comment. It is also being available as a part of the wider ISO consultative procedure relating to the envisaged revision. It is subject to change without notice and may not be referred to as an International Standard.

Recipients of this document are invited to submit, with their comments, notification of any relevant patent rights of which they are aware and to provide supporting documentation.

**Copyright notice**

This ISO document is a working draft or committee draft and is copyright-protected by ISO. While the reproduction of working drafts or committee drafts in any form for use by participants in the ISO standards development process is permitted without prior permission from ISO, neither this document nor any extract from it may be reproduced, stored or transmitted in any form for any other purpose without prior written permission from ISO.



ISO 11014-1:1994	GHS	Draft of revised ISO 11014-1
<p><b>Introduction</b></p> <p>The safety data sheet for chemical products, SDS, gives information on various aspects of these chemical products (substances or mixtures) concerning safety, health and environmental protection. The SDS supplies for these aspects, basic knowledge of the chemical products and given recommendations on protective measures and emergency actions. In some countries, this sheet is called a material safety data sheet, MSDS. Throughout this part of ISO 11014, the term SDS will be used.</p> <p>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 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.</p> <p>The objective of this part of ISO 11014 is to create consistency in providing information on safety, health and environmental matters for chemical products.</p> <p>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)</p> <p>This part of ISO 11014 provides flexibility to accommodate different text- processing/transmission systems</p> <p>This part of ISO 11014 has been developed for worldwide application and follows the SDS model as</p>	<ul style="list-style-type: none"> <li>• The role of the SDS in the harmonized system</li> <li>• When the SDS is required?</li> <li>• SDS format</li> <li>• SDS content</li> <li>• Example of a GHS SDS</li> </ul> <p><u>The role of the SDS in the Harmonised System</u></p> <p>2. The SDS should provide comprehensive information about a chemical substance or mixture for use in workplace chemical control regulatory frameworks. Both employers and workers use it as a source of information about hazards, including environmental hazards, and to obtain advice on safety precautions. The information acts as a reference source for the management of hazardous chemicals in the workplace. The SDS is product related and, usually, is not able to provide specific information that is relevant for any given workplace where the product may finally be used, although where products have specialised end uses the SDS information may be more workplace-specific. The information therefore enables the employer to develop an active programme of worker protection measures, including training, which is specific to the individual workplace and to consider any measures which may be necessary to protect the environment.</p> <p>3. In addition, the SDS provides an important source of information for other target audiences in the GHS. So certain elements of information may be used by those involved with the transport of dangerous goods, emergency responders (including poison centres), those involved in the professional use of pesticides and consumers. However, these audiences</p>	<p>gives information on various aspects of these chemical products (substances or mixtures) concerning safety, health and environmental protection. The SDS supplies for these aspects, basic knowledge of the chemical products and given recommendations on protective measures and emergency actions. In some countries, this sheet is called a material safety data sheet, MSDS. Throughout ISO this International Standard, the term SDS will be used.</p> <p>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 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.</p> <p>The objective of <b>this International Standard</b> is to create consistency in providing information on safety, health and environmental matters for chemical products.</p> <p>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)</p> <p><b>This International Standard</b> provides flexibility to accommodate different text- processing/transmission systems</p> <p><b>The first edition (ISO 11014-1:1994) had been developed for worldwide application and followed a SDS model as outlined in e.g. EC Commission Directive 91/155/EEC defining and laying down the</b></p>

ISO 11014-1:1994	GHS	Draft of revised ISO 11014-1
<p>outlined in e.g. EC Commission Directive 91/155/EEC defining and laying down the detailed arrangements for the system of specific information relating to dangerous preparations and the Chemical Manufacturing Association (CMA) Interim guideline for the preparation of material safety data sheets, with only minor deviations in the text of the section headings. It does not necessarily reflect or represent the different national or local regulatory requirements that may be specific for certain countries/states. It is therefore recommended that reviews outlining the different national or local regulatory requirement relevant to SDSs are made available to those who prepare SDSs. The provision of this knowledge to SDS authors will enhance the establishment and acceptance of only one SDS per chemical product in different countries/states, enabling fully consistent information to be provided.</p> <p>The obligations of the recipient of an SDS are beyond the scope of this part of ISO 11014. Some of them are included, however, to clearly differentiate between the obligations of the SDS and those of the recipient of the SDS.</p>	<p>receive additional information from a variety of other sources such as the UN RTDG document and package inserts for consumers and will continue to do so. The introduction of a harmonised labelling system therefore, is not intended to affect the primary use of the SDS which is for workplace users.</p> <p><b><u>When is a SDS required?</u></b></p> <p>4. When considering the obligation to compile and submit a SDS, the supplier of employer should consider two questions:</p> <p>(a) Is a SDS required?; and (b) What information is needed for the SDS?</p> <p>5. An SDS should be produced for all substances and mixtures which meet the harmonised criteria for physical, health or environmental hazards under the GHS and for all mixtures which contain substances that meet the criteria for carcinogenic, toxic to reproduction or target organ systemic toxicity in concentrations exceeding the cut-off limits for SDS specified by the criteria for mixtures (see paragraph 6).The competent authority may choose also to require SDSs for mixtures not meeting the criteria for classification as hazardous but which contain hazardous substances in certain concentrations (see paragraph 6).</p> <p><b>General guidance for compiling a Safety Data Sheet<sup>1</sup></b></p> <p>6. An SDS should be provided based on the following generic cut-off</p>	<p>detailed arrangements for the system of specific information relating to dangerous preparations and Chemical Manufacturing Association (CMA), present American Chemistry Council (ACC), Interim guideline for the preparation of material safety data sheets, with only minor deviations in the text of the section headings.</p> <p>1992 UN Conference on the Environment and Development (UNCED) adopted Agenda 21 in which UNCED recommended that a globally harmonized hazard classification and compatible labelling system of chemicals (GHS) including safety data sheet and easily understandable symbols should be available, as one of the six areas for action identified in Chapter 19 on environmentally sound management of toxic chemicals.</p> <p>Upon this recommendation, the technical work of harmonization was carried out through three focal points, namely OECD for health and environmental hazard classification criteria, the UN committee of experts on transport of dangerous goods (UN CETDG) for physical classification criteria, and International Labour Office (ILO) for hazard communication. ILO working group comprised of experts from member countries, employers, workers, and observers from inter-governmental and non-governmental-organisations finalized the integrated GHS document. The final GHS document which includes the classification criteria, labeling elements, decision logic for classification and selection of labeling elements, as well as a guidance on safety</p>

ISO 11014-1:1994	GHS	Draft of revised ISO 11014-1										
	<p>/concentration limits:</p> <p>Hazard Class Cut-off/ Concentration Limit</p> <p>Acute Toxicity 1.0%</p> <p>Skin Corrosion / Irritation 1.0%</p> <p>Serious damage to eyes/eye irritation 1.0%</p> <p>Respiratory/ Skin Sensitization<sup>2</sup> 1.0%</p> <p>Mutagenicity: Category 1 0.1%</p> <p>Mutagenicity: Category 2 1.0%</p> <p>Carcinogenicity 0.1%</p> <p>Reproductive Toxicity 0.1%</p> <p>Target Organ Systemic toxicity (Single Exposure) 1.0%</p> <p>Target Organ Systemic Toxicity (Repeat Exposure) 1.0%</p> <p>Hazardous to the Aquatic Environment 1.0%</p> <table border="1" data-bbox="810 1070 1196 1262"> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> <tr><td></td><td></td></tr> </table>											<p>data sheet and various aspects of the system as it applies to transport, work place or consumers was transmitted to the UN sub-committee of experts on GHS within the UN Committee of experts for the transport of dangerous goods and globally harmonized system of classification and labelling of chemicals, established by the UN Economic and Social Council.</p> <p>This International Standard has been developed by revising the first edition to introduce the requirements laid down in the GHS document on hazard communication: Safety Data Sheets. It does not necessarily reflect or represent the different national or local regulatory requirements that may be specific for certain countries/states. It is therefore recommended that reviews outlining the different national or local regulatory requirement relevant to SDSs are made available to those who prepare SDSs. The provision of this knowledge to SDS authors will enhance the establishment and acceptance of only one SDS per chemical product in different countries/states, enabling fully consistent information to be provided.</p> <p>The obligations of the recipient of an SDS are beyond the scope of <b>this International Standard</b>. Some of them are included, however, to clearly differentiate between the obligations of the SDS and those of the recipient of the SDS.</p>

ISO 11014-1:1994	GHS	Draft of revised ISO 11014-1																				
	<table border="1" data-bbox="810 244 1196 555"> <tr><td></td><td></td></tr> </table> <p data-bbox="810 560 1429 847">7. As noted in the <i>Classification of Hazardous Substances and Mixtures</i> (Chapter 1.2, paragraphs 28-31), there may be some cases when the available hazard data may justify classification on the basis of other cut-off-limits than the generic ones specified in the health and environment hazard class chapters (Chapters 3.2 to 3.10). When such specific cut-offs are used for classification, they should also apply to the obligation to compile an SDS.</p> <p data-bbox="810 884 1429 983"><sup>1</sup> Paragraphs 6-9 are not part of the agreed text on hazard communication including SDSs developed by the ILO Working Group on Hazard Communication, but have been provided here as additional guidance on the compiling of an SDS.</p> <p data-bbox="810 983 1429 1206"><sup>2</sup> There has been considerable discussion about what to convey about sensitisation effects to those exposed, and at what point it should be conveyed. While the current cut-off for mixtures is 1%, it appears that the major systems all believe information should be conveyed below that level. This may be appropriate both to warn those already sensitised, as well as to warn those who may become sensitised. This issue was not clear during the initial deliberations on the criteria for mixtures containing sensitisers, and thus has not been adequately discussed nor options explored.</p> <p data-bbox="810 1222 1429 1415">Before the system becomes implemented, this issue should be revisited by the ECOSOC Subcommittee on the GHS as one of its first priorities. It should be noted that the sensitisation criteria for substances will also have to be re-opened to consider this issue and the inclusion of new information and evolving testing approaches that addresses the question of strong sensitisers versus those that are weaker. Appropriate hazard communication should be considered along with the discussions on the criteria</p>																					

ISO 11014-1:1994	GHS	Draft of revised ISO 11014-1
<p><u>Safety data sheet for chemical products –</u></p> <p>Part 1: Content and order of sections</p>	<p><i>and the availability of an appropriate test method.</i></p> <p>8. Some competent authorities (CA) may require SDSs to be compiled for mixtures which are not classified for acute toxicity or aquatic toxicity as a result of application of the additivity formula, but which contain acutely toxic substances or substances toxic to the aquatic environment in concentrations equal to or greater than 1 %.<sup>3</sup></p> <p>9. In accordance with the building block principle, some competent authorities may choose not to regulate certain categories within a hazard class. In such situations, there would be no obligation to compile a SDS.</p> <p>10. Once it is clear that a SDS is required for a substance or a mixture then the information required to be included in the SDS should in all cases be provided in accordance with GHS requirements.</p> <p><sup>3</sup> <i>The cut-offs for classification of mixtures are normally specified by concentrations expressed as % of the component substance. In some cases, for example acute toxicity (human health), the cut-offs are expressed as acute toxicity values (ATE). The classification of a mixture is determined by additivity calculation based on acute toxicity values (see chapter 3.1) and concentrations of component substances. Similarly acute aquatic toxicity classification may be calculated on the basis of acute aquatic toxicity values (See chapter 3.10) and where appropriate, corrosion/irritation by adding up concentrations of individual substances (See Chapters 3.2 and 3.3). Component substances are taken into consideration for application of the formulae when the concentration is equal to or greater than 1 %. Some competent authorities (CA) may use this cut-off as a basis of obligation to compile a SDS</i></p> <p><u>SDS format</u></p>	<p><u>Safety data sheet for chemical products –Content and order of sections</u></p>

ISO 11014-1:1994	GHS	Draft of revised ISO 11014-1
<p><b>1 Scope</b></p> <p>This part of ISO 11014 presents information for the compilation and completion of an SDS.</p> <p>It defines specifically:</p> <ul style="list-style-type: none"> <li>- the general layout of the SDS:</li> <li>- the 16 standard headings:</li> <li>- the numbering and the sequence of these 16 standard headings:</li> <li>- the items necessary to fill in an SDS and the conditions of their applicability or utilization.</li> </ul> <p>This part of ISO 11014 does not define a fixed format, nor does it include an actual SDS to be filled in.</p> <p><b>2 Normative reference</b></p> <p>The following standard contains provisions which, through reference in this text, constitute provisions of this part of ISO 11014. 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 11014 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.</p> <p>ISO 31-8:1992, Quantities and units - Part 8: Physical</p>	<p>11. The information in the SDS should be presented using the following 16 headings in the order given below.</p> <ol style="list-style-type: none"> <li>1. Identification</li> <li>2. Hazard(s) identification</li> <li>3. Composition/information on ingredients</li> <li>4. First-aid measures</li> <li>5. Fire-fighting measures.</li> <li>6. Accidental release measures</li> <li>7. Handling and storage</li> <li>8. Exposure controls/personal protection</li> <li>9. Physical and chemical properties</li> <li>10. Stability and reactivity</li> <li>11. Toxicological information</li> <li>12. Ecological information</li> <li>13. Disposal considerations</li> <li>14. Transport information</li> <li>15. Regulatory information</li> <li>16. Other information.</li> </ol>	<p><b>1 Scope</b></p> <p><b>This International Standard presents</b> information for the compilation and completion of an SDS.</p> <p>It defines specifically:</p> <ul style="list-style-type: none"> <li>- the general layout of the SDS:</li> <li>- the 16 standard headings:</li> <li>- the numbering and the sequence of these 16 standard headings:</li> <li>- the items necessary to fill in an SDS and the conditions of their applicability or utilization.</li> </ul> <p><b>This International Standard</b> does not define a fixed format, nor does it include an actual SDS to be filled in.</p> <p><b>2 Normative reference</b></p> <p><b>The following referenced document is 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.</b></p> <p>ISO 31-8:1992, <i>Quantities and units — Part 8: Physical chemistry and molecular physics.</i></p>

ISO 11014-1:1994	GHS	Draft of revised ISO 11014-1
<p>chemistry and molecular physics.</p> <p><b>3 Definitions</b></p> <p>For the purposes of this part of ISO 1 1014, the following definitions apply.</p> <p><b>3.1 safety:</b> Freedom from unacceptable risk of harm.<sup>1)</sup></p> <p><b>3.2 risk:</b> The probable rate of occurrence of a hazard causing harm, and the degree of severity of the harm.<sup>1)</sup></p> <p><b>3.3 hazard:</b> A potential source of harm.<sup>1)</sup></p> <p><b>3.4 harm:</b> Physical injury and/or damage to health or property.<sup>1)</sup></p> <p><b>3.5 intended use:</b> The use of a product or process under conditions or for purposes in accordance with specifications and instructions provided by the supplier including information for publicity purposes.<sup>1)</sup></p> <p><b>3.6 reasonably foreseeable misuse:</b> The use of a product or process under conditions or for purposes not intended by the supplier, but which may happen, induced by the design of the product, in combination with, or as a result of, common human behavior.<sup>1)</sup></p> <p><b>3.7 supplier:</b> Party responsible for making a chemical product available to a recipient.</p> <p><b>3.8 recipient:</b> Party receiving a chemical product for industrial or professional use, such as storage, handling, processing or packaging, from a supplier.</p> <p><b>3.9 substance; chemical:</b> Chemical element and its</p>	<p><b><u>SDS content</u></b></p> <p>12. The SDS should provide a clear description of the data used to identify the hazards. The following minimum information should be included, where applicable and available, on the SDS under the relevant headings<sup>4</sup>. If specific information is not applicable or not available under a particular subheading, the SDS should clearly state this. Additional information may be required by competent authorities.</p> <p>13. Some subheadings relate to information that is national or regional in nature, for example “EC number” and “occupational exposure limits”. Suppliers or employers should include information under such SDS subheadings that is appropriate and relevant to the countries or regions for which the SDS is intended and into which the product is being supplied<sup>5</sup></p> <p>14. There are a number of internationally-recognised standards that provide guidance in the preparation of a SDS, including the ILO Standard under the Recommendation 177 on Safety in the Use of Chemicals at Work, the International Standard 11014 of the International Standard Organization (ISO), the European Union Safety Data Sheet Directive EEC/91/155 and the American National Standard Institute (ANSI) standard Z 400.1. Further guidance on preparation of a SDS may be developed by the GHS Subcommittee, based on the work of these organizations.</p> <p><sup>4</sup> Where “applicable” means where the information is applicable to the specific product covered by the SDS. Where “available” means where the information is available to the supplier or other entity that is preparing the SDS</p>	<p><b>3 Terms and definitions</b></p> <p>For the purposes of <b>this International Standard</b>, the following <b>terms and definitions</b> apply.</p> <p><b>3.1 safety:</b> Freedom from unacceptable risk of harm<sup>1)</sup></p> <p><b>3.2 risk:</b> Combination of the probability of occurrence of harm and the severity of that harm<sup>1)</sup></p> <p><b>3.3 hazard:</b> A potential source of harm<sup>1)</sup></p> <p><b>3.4 harm:</b> Physical injury and/or damage to health or property<sup>1)</sup></p> <p><b>3.5 supplier:</b> Party responsible for making a chemical product available to a recipient</p> <p><b>3.6 recipient:</b> Party receiving a chemical product for industrial or professional use, such as storage, handling, processing or packaging, from a supplier</p> <p><b>3.7 substance:</b> Chemical element and its compounds</p>

ISO 11014-1:1994	GHS	Draft of revised ISO 11014-1
<p>compounds in the natural state or obtained by any production process, including any additive necessary to preserve the stability of the product and any impurity deriving from the process used, but excluding any solvent which may be separated without affecting the stability of the substance or changing its composition.</p> <p>NOTE 1 The word “chemicals” is used in the USA and Canada.</p> <p><b>3.10 preparation; mixture:</b> Mixture or solution composed of two or more substances.</p> <hr/> <p>1) ISO/IEC Guide 51 :1990. Guidelines for the inclusion of safety aspects in standards.</p> <p>NOTE 2 The word “mixture” is used in the USA and Canada.</p> <p><b>3.11 chemical product:</b> Substance or preparation.</p> <p><b>3.12 ingredient:</b> Constituent of a chemical product.</p> <p><b>3.13 exposure control:</b> The full range of precautionary measures to protect the user of the chemical product.</p> <p><b>3.14 item:</b> Any textual information corresponding to a subheading in an SDS.</p>	<p><sup>5</sup> <i>Paragraphs 13-14 are not part of the agreed text on hazard communication including SDSs developed by the ILO Working Group on Hazard Communication, but have been provided here as additional guidance on the compiling of an SDS.</i></p>	<p>in the natural state or obtained by any production process, including any additive necessary to preserve the stability of the product and any impurity deriving from the process used, but excluding any solvent which may be separated without affecting the stability of the substance or changing its composition</p> <p><b>3.8 mixture:</b> Mixture or solution composed of two or more substances</p> <p><b>3.9 chemical product:</b> Substance or mixture</p> <p><b>3.10 ingredient:</b> Constituent of a chemical product</p> <p><b>3.11 exposure control:</b> The full range of precautionary measures to protect the user of the chemical product</p> <p><b>3.12 item:</b> Any textual information corresponding to a subheading in an SDS</p> <p><b>3.13 GHS:</b> Globally Harmonized System for the Classification and Labelling of Chemicals<sup>2)</sup></p> <hr/>

ISO 11014-1:1994	GHS	Draft of revised ISO 11014-1
<p><b>4 General aspects</b> An SDS applies to a chemical product as a whole.</p> <p>Information contained in an SDS is non-confidential. Confidential information on ingredients may be given in a different way, provided section 2 of annex A is observed.</p> <p>Any supplier should provide a complete SDS to the recipient and shall report relevant information on safety, health and environment. The supplier has the obligation to keep the SDSs up to date and to provide the recipient with the latest edition.</p> <p>The recipient of an SDS is responsible for acting in accordance with a risk assessment in regard of the conditions of product use and for taking necessary precautionary measures in a given work situation, and has the responsibility to keep the users informed about the hazards relevant to their individual workplace.</p> <p>The recipient of an SDS is responsible for choosing the appropriate way of informing the users. When formulating the specific instructions for the workplace, the recipient should consider the general recommendations of relevant SDSs.</p> <p>Since an SDS is merely product-related, it cannot take into account all the possible situations which may arise at any given workplace. Therefore an SDS only constitutes part of the information necessary to establish a safety programme.</p>		<p>1) ISO/IEC Guide 51:1999. Guidelines for the inclusion of safety aspects in standards. 2) The document is to be published by UN</p> <p><b>4 General aspects</b> An SDS applies to a chemical product as a whole.</p> <p>Information contained in an SDS is non-confidential. Confidential information on ingredients may be given in a different way, provided section 3 of annex A is observed.</p> <p>Any supplier should provide a complete SDS to the recipient and shall report relevant information on safety, health and environment. The supplier has the obligation to keep the SDSs up to date and to provide the recipient with the latest edition.</p> <p>The recipient of an SDS is responsible for acting in accordance with a risk assessment in regard of the conditions of product use and for taking necessary precautionary measures in a given work situation, and has the responsibility to keep the users informed about the hazards relevant to their individual workplace.</p> <p>The recipient of an SDS is responsible for choosing the appropriate way of informing the users. When formulating the specific instructions for the workplace, the recipient should consider the general recommendations of relevant SDSs.</p> <p>Since an SDS is merely product-related, it cannot take into account all the possible situations which may arise at any given workplace. Therefore an SDS only constitutes part of the information necessary to establish a safety programme.</p>

ISO 11014-1:1994	GHS	Draft of revised ISO 11014-1
<p><b>5 Contents and general layout of an SDS</b></p> <p>An SDS shall provide the chemical product information given under the following 16 standard headings, the wording, numbering and sequence of which shall not be altered:</p> <ol style="list-style-type: none"> <li>1 Product and company identification</li> <li>2 Composition/Information on ingredients</li> <li>3 Hazards identification</li> <li>4 First-aid measures</li> <li>5 Fire-fighting measures</li> <li>6 Accidental release measures</li> <li>7 Handling and storage</li> <li>8 Exposure controls/personal protection</li> <li>9 Physical and chemical Properties</li> <li>10 Stability and reactivity</li> <li>11 Toxicological information</li> <li>12 Ecological information</li> <li>13 Disposal considerations</li> <li>14 Transport information</li> <li>15 Regulatory information</li> <li>16 Other information</li> </ol> <p>Under each of the 16 standard headings, relevant information shall be stated. If this information is not available, then it shall be stated why not. Blanks shall not be left, with one exception under standard heading 16 “Other information”, where a blank is allowed. In an SDS, the sources of information do not normally have to be specified.</p> <p>The 16 sections corresponding to the 16 standard headings shall be completed in accordance with the recommendations and requirements of annex A</p>		<p><b>5 Contents and general layout of an SDS</b></p> <p>An SDS shall provide the chemical product information given under the following 16 standard headings, the wording, numbering and sequence of which shall not be altered:</p> <ol style="list-style-type: none"> <li>1 <b>Product and company identification</b></li> <li>2 Hazards identification</li> <li>3 Composition/Information on ingredients</li> <li>4 First-aid measures</li> <li>5 Fire-fighting measures</li> <li>6 Accidental release measures</li> <li>7 Handling and storage</li> <li>8 Exposure controls/personal protection</li> <li>9 Physical and chemical Properties</li> <li>10 Stability and reactivity</li> <li>11 Toxicological information</li> <li>12 Ecological information</li> <li>13 Disposal considerations</li> <li>14 Transport information</li> <li>15 Regulatory information</li> <li>16 Other information</li> </ol> <p>Under each of the 16 standard headings, relevant information shall be stated. If this information is not available, then it shall be stated why not. Blanks shall not be left, with one exception under standard heading 16 “Other information”, where a blank is allowed. In an SDS, the sources of information do not normally have to be specified.</p> <p>The 16 sections corresponding to the 16 standard headings shall be completed in accordance with the recommendations and requirements of annex A</p>

ISO 11014-1:1994	GHS	Draft of revised ISO 11014-1
<p>“Instructions for the compilation and completion of an SDS”.</p> <p>These 16 sections may be subdivided by means of subheadings. However, unlike the 16 standard headings, the subheadings shall not be numbered.</p> <p>The use of subheadings where appropriate is recommended. When subheadings or items are given, they shall be given in the sequence specified in annex A.</p> <p>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 page numbering system should include the total number of pages or should indicate the last page as such. The date indicated shall be the latest revision date.</p> <p>The 16 sections shall be separated clearly. The headings and subheadings shall be presented in a conspicuous way.</p> <p>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.</p> <p style="text-align: center;"><b>Annex A</b> (normative)</p> <p style="text-align: center;"><b>Instruction for the compilation and completion of an SDS</b></p>	<p>MINIMUM INFORMATION FOR A SDS</p>	<p>“Instructions for the compilation and completion of an SDS”.</p> <p>These 16 sections may be subdivided by means of subheadings. However, unlike the 16 standard headings, the subheadings shall not be numbered.</p> <p>The use of subheadings where appropriate is recommended. When subheadings or items are given, they shall be given in the sequence specified in annex A.</p> <p style="color: red;">If specific information is not applicable or not available under a particular subheading, the SDS should clearly state this.</p> <p>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 page numbering system should include the total number of pages or should indicate the last page as such. The date indicated shall be the latest revision date.</p> <p>The 16 sections shall be separated clearly. The headings and subheadings shall be presented in a conspicuous way.</p> <p>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.</p> <p style="text-align: center;"><b>Annex A</b> (normative)</p> <p style="text-align: center;"><b>Instruction for the compilation and completion of</b></p>

ISO 11014-1:1994	GHS	Draft of revised ISO 11014-1
<p>The following instructions are intended as guidance for the compilation and completion of SDSs. Their purpose is to ensure that the content of each of the sections listed will enable recipients to take the necessary measures relating to safety, protection of health at the workplace and protection of the environment.</p> <ul style="list-style-type: none"> <li>- The 16 sections of SDSs shall be completed in accordance with the recommendations and requirements of this annex.</li> <li>- This annex lists the main items which will be used to complete the 16 sections. This annex lists the main items only, because it is impracticable to list all items which may possibly be included in an SDS.</li> <li>- These main items may be used as subheadings in an SDS. If they are used, the wording given is recommended, not obligatory. The preferred wording is underlined. Other items may be used as subheadings, but are not recommended.</li> <li>- Information not specifically relevant to one of the items/subheadings mentioned in this annex, but relevant for the SDS, may be stated under an additional subheading, called for instance “Further information” or “Specific data”.</li> <li>- For a given chemical product, not all of the items/subheadings listed have to be used and completed, since some of them are optional.</li> <li>- Items/subheadings shall be included in the SDS in accordance with the following criteria:</li> </ul>		<p style="text-align: center;"><b>an SDS</b></p> <p>The following instructions are intended as guidance for the compilation and completion of SDSs. Their purpose is to ensure that the content of each of the sections listed will enable recipients to take the necessary measures relating to safety, protection of health at the workplace and protection of the environment.</p> <ul style="list-style-type: none"> <li>- The 16 sections of SDSs shall be completed in accordance with the recommendations and requirements of this annex.</li> <li>- This annex lists the main items which will be used to complete the 16 sections. This annex lists the main items only, because it is impracticable to list all items which may possibly be included in an SDS.</li> <li>- These main items may be used as subheadings in an SDS. If they are used, the wording given is recommended, not obligatory. The preferred wording is underlined. Other items may be used as subheadings, but are not recommended.</li> <li>- Information not specifically relevant to one of the items/subheadings mentioned in this annex, but relevant for the SDS, may be stated under an additional subheading, called for instance “Further information” or “Specific data”.</li> <li>- For a given chemical product, not all of the items/subheadings listed have to be used and completed, since some of them are optional.</li> </ul>

ISO 11014-1:1994	GHS	Draft of revised ISO 11014-1
<p><b>Standard:</b> the notation <b>[S]</b> associated with an item/subheading indicates that the accurate data or information shall be supplied in every case and for every product, thus providing complete information. Statements such as “not relevant”, “not applicable” and “not available” are not authorized in these cases.</p> <p><b>Informative:</b> the notation <b>[I]</b> associated with an item/subheading indicates that explicit information shall be given, even though the corresponding items are not relevant to the product concerned or the information is not available yet. Statements such as “not relevant”, “not applicable” and “not restricted” may be used, if they can be justified. Professional judgement should be used in selecting these statements.</p> <p><b>Applicable:</b> the notation <b>[A]</b> associated with an item/subheading indicates that both the items and the data listed may be relevant to:</p> <ul style="list-style-type: none"> <li>- the product concerned (properties, use, etc. );</li> <li>- local requirements;</li> <li>- safety, prevention and protection.</li> </ul> <p>Subheadings marked <b>[A]</b> for which no information is available shall be deleted.</p> <p>- In no case, <b>[S]</b>, <b>[I]</b> or <b>[A]</b>, are subheadings without relevant information allowed.</p>		

ISO 11014-1:1994	GHS	Draft of revised ISO 11014-1
<p><b>1 PRODUCT AND COMPANY IDENTIFICATION</b></p> <p>This section shall state the <u>product name</u> as used on the label [S], the supplier <u>product code</u> [A], as well as the name [S], address [S] and telephone number [S] of the <u>supplier</u>. If applicable, the <u>emergency telephone number</u> [A] used by the company should be given. Telex number [A] and telefax number [A] may also be given.</p> <p><b>3 HAZARDS IDENTIFICATION</b></p> <p>This section shall clearly and briefly summarize the <u>most important hazards</u> and effects of the product [I] (adverse human health effects [A], environmental effects [A], physical and chemical hazards [A] and, where appropriate, <u>specific hazards</u> [I].</p> <p><u>Main symptoms</u> [A] can be given as well.</p>	<p><b>1. Identification of the substance or mixture and of the supplier</b></p> <ul style="list-style-type: none"> <li>• GHS product identifier</li> <li>• Other means of identification.</li> <li>• Recommended use of the chemical and restrictions on use.</li> <li>• Supplier's details (including name, address, phone number etc).</li> <li>• Emergency phone number.</li> </ul> <p><b>2. Hazards identification</b></p> <ul style="list-style-type: none"> <li>• GHS classification of the substance/mixture and any national or regional information.</li> <li>• GHS label elements, including precautionary statements. (Hazard symbols may be provided as a graphical reproduction of the symbols in black and white or the name of the symbol e.g. flame, skull and crossbones.)</li> <li>• Other hazards which do not result in classification (e.g. dust explosion hazard) or are not covered by the GHS.</li> </ul>	<p><b>1 PRODUCT AND COMPANY IDENTIFICATION</b></p> <p>This section shall state the identification of the substance or mixture and of the supplier.</p> <p><u>Product name</u> as used on the label shall be stated.</p> <p><u>Other means of identification</u> available, e.g. the supplier <u>product code</u>, may also be indicated.</p> <p>Indicate the intended or <u>recommended uses</u> and <u>restrictions on use</u> of the substance or <b>mixture</b> as far as they are known. Where there are many possible uses, only the most important or common uses need be listed. This should include a brief description of what it actually does.</p> <p>The name, address and telephone number of the <u>supplier</u> shall be stated. Telefax number may also be given.</p> <p>The <u>emergency telephone number</u> used by the company should be given.</p> <p><b>2. HAZARDS IDENTIFICATION</b></p> <p>This section shall state the classification and label information of the substance / mixture.</p> <p><u>If the product is classified in the GHS, this section shall state <b>GHS classification</b> of the substance/mixture and any regional information as well as <b>GHS label elements</b>, including precautionary statements. (Hazard symbols may be provided as a graphical reproduction of the symbols in black and white or the name of the</u></p>

ISO 11014-1:1994	GHS	Draft of revised ISO 11014-1
<p>The classification [A] of the chemical product may be given. Reference should be made to the classification system used.</p> <p>An “Emergency overview” [A] may also be given.</p> <p><b>2 COMPOSITION/INFORMATION ON INGREDIENTS</b></p> <p>This section shall state whether the chemical product is a substance or a preparation [S].</p> <p>In the case of a substance the <u>common chemical name</u> or the <u>generic name</u> [S] shall be given. <u>Synonyms</u> [A], if any, and the Chemical Abstract Service Registry Number (<u>CAS number</u>) [A] should be given. <u>Ingredients contribution to the hazard</u> [I] shall also be indicated.</p> <p>In the case of a preparation, information about the <u>chemical nature</u> [I] of the product shall be given. It is not necessary to give the full composition. When defined, <u>components contributing to the hazard</u> [I] or <u>impurities contributing to the hazard</u> [A] of the preparation should be given, with their chemical or</p>	<p>.</p> <p><b>3. Composition/information on ingredients</b></p> <p><b><u>Substance</u></b></p> <ul style="list-style-type: none"> <li>• Chemical identity</li> <li>• Common name, synonyms etc.</li> <li>• CAS number, EC number etc.</li> <li>• Impurities and stabilizing additives which are themselves classified and which contribute to the classification of the substance.</li> </ul> <p><b><u>Mixture</u></b></p> <ul style="list-style-type: none"> <li>● The chemical identity and concentration or concentration ranges of all ingredients which are hazardous within the meaning of the GHS and are present above their cut-off levels.</li> </ul> <p>Note: For information on ingredients, the competent authority rules for CBI take priority over the rules for product identification</p>	<p><u>symbol e.g. flame, skull and crossbones.</u>)</p> <p><u>Other hazards</u> which do not result in classification (e.g. dust explosion hazard) or are not covered by the GHS should be given.</p> <p>It may be necessary to summarize clearly and briefly the <u>most important hazards</u> and effects of the product (adverse human health effects, environmental effects, physical and chemical hazards).</p> <p>Where appropriate, <u>specific hazards</u> should be given.</p> <p><b>3 COMPOSITION/INFORMATION ON INGREDIENTS</b></p> <p>This section shall state whether the chemical product is a substance or a mixture.</p> <p>In the case of a substance, the <u>common chemical name</u> or the <u>generic name</u> shall be given. <u>Synonyms</u>, if any, should be given.</p> <p>The Chemical Abstract Service Registry Number (<u>CAS number</u>), if any, should be given. Any regional information, e.g. EU number, may be given.</p> <p>Impurities and stabilizing additives which are themselves classified and which contribute to the hazard and/or classification of the substance should also be indicated.</p> <p><u>In the case of mixture, if the ingredients which are hazardous within the meaning of the GHS and are</u></p>

ISO 11014-1:1994	GHS	Draft of revised ISO 11014-1
<p>generic name [I] and their concentration or concentration range [I]. The classification and hazard labelling [A] of these components or impurities may be given.</p> <p>Reference should be made to the classification system used.</p> <p><b>4 FIRST-AID MEASURES</b></p> <p>This section shall state the first-aid measures to be taken, if necessary, if appropriate, it shall state which actions have to be avoided at all costs. The information should be readily understandable by the victim and/or the first-aider.</p> <p>The information [S] shall be subdivided according to the different exposure routes, i.e. <u>inhalation [A]</u>, <u>skin contact [A]</u>, <u>eye contact [A]</u> and <u>ingestion [A]</u>.</p> <p>A brief description [A] of the most important symptoms and effects may be given here, but a detailed description of symptoms and effects should be given under heading 11.</p> <p>If appropriate, advice for the <u>protection of first-aiders [A]</u> and/or special <u>notes to a physician [A]</u> may be included here.</p>	<p><b>4. First aid measures</b></p> <ul style="list-style-type: none"> <li>● Description of necessary measures, subdivided according to the different routes of exposure, i.e. inhalation, skin and eye contact and ingestion.</li> <li>● Most important symptoms/effects, acute and delayed.</li> <li>● Indication of immediate medical attention and special treatment needed, if necessary.</li> </ul> <p><b>5. Fire-fighting measures</b></p> <ul style="list-style-type: none"> <li>● Suitable (and unsuitable) extinguishing media.</li> <li>● Specific hazards arising from the chemical (e.g. nature of any hazardous combustion products).</li> <li>● Special protective equipment and precautions for fire-fighters.</li> </ul>	<p><b>present above their cut-off levels, the chemical identity and concentration or concentration ranges of ingredients shall be given.</b> It is not necessary to give the full composition. When defined, <u>components contributing to the hazard</u> or <u>impurities contributing to the hazard</u> of the mixture should be given, with their chemical or generic name and their concentration or concentration range.</p> <p><b>4 FIRST-AID MEASURES</b></p> <p>This section shall state the first-aid measures to be taken, if necessary, if appropriate, it shall state which actions have to be avoided at all costs. The information should be readily understandable by the victim and/or the first-aider</p> <p>The information shall be subdivided according to the different exposure routes, i.e. <u>inhalation</u>, <u>skin contact</u>, <u>eye contact</u> and <u>ingestion</u>.</p> <p>A brief description of the <u>most important symptoms/effects</u>, acute and delayed, may be given here, but a detailed description of symptoms and effects should be given under heading 11.</p> <p>If appropriate, advice for the <u>protection of first-aiders</u> and/or special <u>notes to a physician</u> should be included here.</p> <p>Indication of immediate medical attention and special treatment needed, <b>if necessary</b>, should be stated.</p> <p><b>5 FIRE-FIGHTING MEASURES</b></p> <p>This section shall state which <u>extinguishing media</u> are</p>

ISO 11014-1:1994	GHS	Draft of revised ISO 11014-1
<p><b>5 FIRE-FIGHTING MEASURES</b></p> <p>This section shall state which <u>extinguishing media</u> are suitable [I] and subsequently, if appropriate, which extinguishing media are NOT suitable [A].</p> <p><u>Specific hazards</u> [A] with regard to firefighting measures, <u>specific methods</u> [A] of fire-fighting and special equipment for the <u>protection of firefighters</u> [A] should be indicated here.</p> <p><b>6 ACCIDENTAL RELEASE MEASURES</b></p> <p>This section shall contain information on:</p> <ul style="list-style-type: none"> <li>- <u>personal precautions</u> [I];</li> <li>- <u>environmental precautions</u> [I];</li> <li>- <u>methods for cleaning up</u> [S] (recovery [A], neutralization [A] and disposal, if different from section 13 [A]).</li> </ul> <p>This information should include prevention of secondary hazards [A].</p> <p><b>7 HANDLING AND STORAGE</b></p> <p><u>Handling</u> [I]</p>	<p><b>6. Accidental release measures</b></p> <ul style="list-style-type: none"> <li>● Personal precautions, protective equipment and emergency procedures.</li> <li>● Environmental precautions.</li> <li>● Methods and materials for containment and cleaning up.</li> </ul> <p><b>7. Handling and storage</b></p> <ul style="list-style-type: none"> <li>● Precautions for safe handling.</li> <li>● Conditions for safe storage, including any incompatibilities.</li> </ul>	<p>suitable and subsequently, if appropriate, which extinguishing media are unsuitable.</p> <p><u>Specific hazards</u> arising from the chemical (e.g. nature of any hazardous combustion products) should be indicated here.</p> <p>Special <u>protective equipment</u> and <u>precautions for fire-fighters</u> should be indicated here.</p> <p><b>6 ACCIDENTAL RELEASE MEASURES</b></p> <p>This section shall contain information on:</p> <ul style="list-style-type: none"> <li>- <u>Personal precautions, protective equipment and emergency procedures</u>;</li> <li>- <u>environmental precautions</u>;</li> <li>- <u>methods and materials for containment and cleaning up</u> (recovery, neutralization and disposal, if different from section 13 ).</li> </ul> <p><b>7 HANDLING AND STORAGE</b></p> <p><u>Handling</u></p> <p>This subsection shall describe <u>precautions for safe handling</u>.</p>

ISO 11014-1:1994	GHS	Draft of revised ISO 11014-1
<p>This subsection shall describe appropriate <u>technical measures [I]</u> (prevention of user exposure [A]) prevention of fire and explosion [A]) and <u>precautions [I]</u> for safe handling of the chemical product, such as local and general ventilation and measures to prevent aerosol and dust generation. It shall contain specific <u>safe handling advice [I]</u>, such as avoidance of contact with incompatible materials.</p> <p>Storage [I]</p> <p>This subsection shall describe appropriate <u>technical measures [I]</u> and <u>storage conditions [I]</u> (suitable [I] to be avoided [A]), for safe storage of the chemical product, including separation from <u>incompatible product [I]</u>. It shall in particular contain information in respect of safe <u>packaging materials [I]</u> (recommended [I], not suitable [A]).</p> <p><b>8 EXPOSURE CONTROLS/PERSONAL PROTECTION</b></p> <p>If appropriate, <u>engineering measures</u> to reduce exposure [A] should be given in this section. This information should complement that already given under heading 7 above.</p> <p>Specific <u>control parameters [A]</u> such as limit values [A] or biological standards [A] with their, preferably dated, references should be indicated. Information on the recommended monitoring procedures [A] with their references should be given.</p> <p>This section shall also contain recommendations on appropriate <u>personal protective equipment [I]</u>, such as</p>	<p><b>8. Exposure controls/personal protection</b></p> <ul style="list-style-type: none"> <li>● Control parameters e.g. occupational exposure limit values or biological limit values.</li> <li>● Appropriate engineering controls.</li> <li>● Individual protection measures, such as personal protective equipment.</li> </ul>	<p><u>Storage</u></p> <p>This subsection shall describe <u>conditions for safe storage</u>, including any <u>incompatibilities</u>.</p> <p><b>8 EXPOSURE CONTROLS/PERSONAL PROTECTION</b></p> <p>Specific <u>control parameters</u> such as occupational exposure limit values or biological limit values should be given.</p> <p>If appropriate, <u>engineering controls</u> should be given in this section.</p> <p>This section shall also contain recommendations on appropriate <u>personal protective equipment</u>, such as for:</p> <ul style="list-style-type: none"> <li>- respiratory protection;</li> <li>- hand protection;</li> <li>- eye protection;</li> </ul>

ISO 11014-1:1994	GHS	Draft of revised ISO 11014-1
<p>for:</p> <ul style="list-style-type: none"> <li>- respiratory protection [A];</li> <li>- hand protection [A];</li> <li>- eye protection [A];</li> <li>- skin and body protection [A].</li> </ul> <p>The kind of protection should be mentioned, including specific suitable material.</p> <p>Some products only become hazardous when present in large amounts or high concentrations, or at elevated temperature or pressure. If appropriate, special precautions for these cases should be stated here.</p> <p>If necessary, <u>specific hygiene measures</u> [A] should be indicated.</p> <p><b>9 PHYSICAL AND CHEMICAL PROPERTIES</b></p> <p>This section shall include chemical product information on appearance, i.e., <u>physical state</u> [S], <u>form</u> [A] and <u>colour</u> [S], and on <u>odour</u> [I].</p> <p>Where applicable, this section shall state information on:</p> <ul style="list-style-type: none"> <li>- pH [I], with indication of the concentration;</li> </ul>	<p><b>9. Physical and chemical properties</b></p> <ul style="list-style-type: none"> <li>● Appearance (physical state, colour etc)</li> <li>● Odour</li> <li>● Odour threshold</li> <li>● pH</li> <li>● melting point/freezing point</li> <li>● initial boiling point and boiling range</li> <li>● flash point:</li> <li>● evaporation rate</li> <li>● flammability (solid, gas)</li> <li>● upper/lower flammability or explosive limits</li> <li>● vapour pressure</li> <li>● vapour density</li> <li>● relative density:</li> <li>● solubility(ies)</li> <li>● partition coefficient: n-octanol/water:</li> <li>● auto-ignition temperature</li> <li>● decomposition temperature</li> </ul>	<ul style="list-style-type: none"> <li>- skin and body protection.</li> </ul> <p><b>9 PHYSICAL AND CHEMICAL PROPERTIES</b></p> <p>This section shall include chemical product information on appearance, i.e., <u>physical state</u>, <u>form(option)</u> and <u>colour</u>, and on <u>odour</u>.</p> <p>Where available, odour threshold may be given.</p> <p>Where applicable, this section shall state information on:</p> <ul style="list-style-type: none"> <li>- pH, with indication of the concentration;</li> <li>- specific temperatures/temperature ranges at which changes in physical state occur (e.g. <u>melting point/freezing point</u>, <u>boiling point/initial boiling point/boiling range</u>);</li> <li>- <u>flashpoint</u>;</li> </ul>

ISO 11014-1:1994	GHS	Draft of revised ISO 11014-1
<p>- specific temperatures/temperature ranges at which changes in physical state occur [I] (e.g. boiling point [A]/boiling range [A]);</p> <p>- decomposition temperature [A];</p> <p>- flashpoint [I];</p> <p>- autoignition temperature [A];</p> <p>- explosion properties [I];</p> <p>- vapour pressure [A];</p> <p>- vapour density [A];</p> <p>- density [I];</p> <p>- solubility [I], with indication of the solvent(s);</p> <p>- octanol/water partition coefficient [A].</p> <p>Other data [A] relevant to the safe use of the chemical product, such as radioactivity or bulk density, should be indicated as well.</p> <p>Units shall be expressed in accordance with the SI system, as in ISO 31-8. Other units may also be given, but only in addition to the SI units.</p>	<p><b>10. Stability and reactivity</b></p> <ul style="list-style-type: none"> <li>● Chemical stability.</li> <li>● Possibility of hazardous reactions.</li> <li>● Conditions to avoid (e.g. static discharge, shock or vibration)</li> <li>● Incompatible materials</li> <li>● Hazardous decomposition products</li> </ul>	<p>- <u>autoignition temperature</u>;</p> <p>- <u>evaporation rate</u>;</p> <p>- <u>flammability</u> (solid, gas);</p> <p>- <u>upper/lower flammability or explosive limits</u>;</p> <p>- <u>vapour pressure</u>;</p> <p>- <u>vapour density</u>;</p> <p>- <u>density/relative density</u>;</p> <p>- <u>solubility</u>(ies), with indication of the solvent(s);</p> <p>- <u>partition coefficient</u>: octanol/water;</p> <p>- <u>decomposition temperature</u>.</p> <p>Other data relevant to the safe use of the chemical product, such as radioactivity or bulk density, should be indicated as well.</p> <p>Units shall be expressed in accordance with the SI system, as in ISO 31-8. Other units may also be given, but only in addition to the SI units.</p> <p>If appropriate, the method used in the determination of a property should be identified.</p> <p><b>10 STABILITY AND REACTIVITY</b></p> <p>This section <b>should</b> state the <u>chemical stability</u> and</p>

ISO 11014-1:1994	GHS	Draft of revised ISO 11014-1
<p>If appropriate, the method used in the determination of a property should be identified.</p> <p><b>10 STABILITY AND REACTIVITY</b></p> <p>This section shall state the <u>stability [I]</u> of the chemical product and possible hazardous reactions [I] occurring under specific conditions.</p> <p>This heading shall contain information on:</p> <ul style="list-style-type: none"> <li>- <u>conditions to avoid [A]</u>;</li> <li>- <u>materials to avoid [A]</u>;</li> <li>- <u>hazardous decomposition products [I]</u> which may reasonably be expected in addition to the carbon monoxide (CO), carbon dioxide (CO<sub>2</sub>) and water (H<sub>2</sub>O) normally formed.</li> </ul> <p>Consideration should be given to intended use and reasonably foreseeable misuse of the product.</p> <p><b>11 TOXICOLOGICAL INFORMATION</b></p> <p>This section shall contain a concise but complete and comprehensible description of the various toxicological (health) effects of the chemical product, which can arise if the user comes into contact with the chemical product, including <u>acute toxicity [I]</u>, <u>local effect [I]</u>, <u>sensitization [A]</u> and <u>chronic toxicity or long term toxicity [A]</u>.</p> <p>If appropriate, distinction shall be made between</p>	<p><b>11. Toxicological information</b></p> <ul style="list-style-type: none"> <li>● Concise but complete and comprehensible description of the various toxicological (health) effects and the available data used to identify those effects, including:</li> <li>● information on the likely routes of exposure (inhalation, ingestion, skin and eye contact);</li> <li>● Symptoms related to the physical, chemical and toxicological characteristics;</li> <li>● Delayed and immediate effects and also chronic effects from short- and long-term exposure.</li> <li>● Numerical measures of toxicity (such as acute toxicity estimates)</li> </ul>	<p><u>possibility of hazardous reactions</u> occurring under specific conditions.</p> <p>This heading shall contain information on:</p> <ul style="list-style-type: none"> <li>- <u>conditions to avoid</u> (e.g. static discharge, shock or vibration);</li> <li>- <u>incompatible materials</u>;</li> <li>- <u>hazardous decomposition products</u>.</li> </ul> <p><b>11 TOXICOLOGICAL INFORMATION</b></p> <p>This section shall contain the concise but complete and comprehensible description of the various toxicological (health) effects of the chemical product, which can arise if the user comes into contact with the chemical product, and the available data used to identify those effects.</p> <p>Information should be given according to the different exposure routes (e.g. inhalation, skin contact, eye contact, ingestion).</p> <p>Symptoms related to the physical, chemical and toxicological characteristics <b>should be stated</b>.</p> <p>If appropriate, distinction shall be made between</p>

ISO 11014-1:1994	GHS	Draft of revised ISO 11014-1
<p>effects due to single exposure, repeated exposure and continuous exposure. If appropriate, immediate and delayed effects shall be mentioned separately.</p> <p>The possible effects should also include, if appropriate, <u>specific effects [A]</u> (e.g. carcinogenicity, mutagenicity and reproduction toxicity).</p> <p>Information should be given according to the different exposure routes (e.g. inhalation, skin contact, eye contact, ingestion).</p> <p>Additional results of data from scientific experiments, with a reference to the source of information, may be given.</p> <p><b>12 ECOLOGICAL INFORMATION</b></p>	<p><b>12. Ecological information</b></p> <ul style="list-style-type: none"> <li>● Ecotoxicity (aquatic and terrestrial, where available).</li> <li>● Persistence and degradability</li> <li>● Bioaccumulative potential</li> <li>● Mobility in soil</li> <li>● Other adverse effects</li> </ul>	<p>effects due to single exposure, repeated exposure and continuous exposure. If appropriate, delayed and immediate effects and also chronic effects from short- and long-term exposure shall be mentioned separately.</p> <p><b>Numerical measures of toxicity</b> should include, if appropriate:</p> <ul style="list-style-type: none"> <li>- <u>acute toxicity</u>;</li> <li>- <u>skin irritation/corrosion</u>;</li> <li>- <u>eye irritation/corrosion</u>;</li> <li>- <u>respiration or skin sensitization</u>;</li> <li>- <u>mutagenicity</u>;</li> <li>- <u>carcinogenicity</u>;</li> <li>- <u>reproductive toxicity</u>;</li> <li>- <u>specific target organ oriented toxicity/ chronic toxicity or long term toxicity</u>.</li> </ul> <p>Additional results of data from scientific experiments, with a reference to the source of information, may be given.</p> <p><b>12 ECOLOGICAL INFORMATION</b></p> <p>This section shall contain information possible environmental effects, behaviour and fate, such as information on:</p> <ul style="list-style-type: none"> <li>- <u>ecotoxicity</u> (aquatic and terrestrial, where available)</li> </ul>

ISO 11014-1:1994	GHS	Draft of revised ISO 11014-1
<p>This section shall contain information [I] possible environmental effects, behaviour and fate, such as information on:</p> <ul style="list-style-type: none"> <li>- <u>mobility</u> [A];</li> <li>- <u>persistence/degradability</u> [A];</li> <li>- <u>bioaccumulation</u> [A];</li> <li>- expected behaviour of the product in the environment/possible environmental impact/<u>ecotoxicity</u> [A].</li> </ul> <p>Additional results or data from scientific experiments, with a reference to the source of information, may be given. Any ecological limit value may be indicated here.</p> <p><b>13 DISPOSAL CONSIDERATION</b></p> <p>This section shall contain appropriate information on recommended methods for safe and environmentally preferred disposal.</p> <p>These methods of disposal apply not only to the chemical product (<u>waste from residues</u> [I]) but also to any <u>contaminated packaging</u> [I].</p> <p>Attention of the recipient should be drawn to the possible existence of local disposal regulations.</p> <p><b>14 TRANSPORT INFORMATION</b></p> <p>This section shall contain information on codes and</p>	<p><b>13. Disposal considerations</b></p> <ul style="list-style-type: none"> <li>● Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging.</li> </ul> <p><b>14. Transport information</b></p> <ul style="list-style-type: none"> <li>● UN number</li> <li>● UN Proper shipping name.</li> <li>● Transport Hazard class(es).</li> <li>● Packing group, if applicable.</li> <li>● Marine pollutant (Y/N).</li> <li>● Special precautions which a user needs to be aware of or needs to comply with in connection with transport or conveyance either within or outside their premises.</li> </ul>	<ul style="list-style-type: none"> <li>- <u>persistence</u> and <u>degradability</u></li> <li>- <u>bioaccumulative potential</u></li> <li>- <u>mobility in soil</u></li> <li>- <u>other adverse effects</u></li> </ul> <p>Additional results or data from scientific experiments, with a reference to the source of information, may be given. Any ecological limit value may be indicated here.</p> <p><b>13 DISPOSAL CONSIDERATION</b></p> <p>This section shall contain appropriate information on recommended methods for safe and environmentally preferred disposal.</p> <p>These methods of disposal apply not only to the chemical product (<u>waste from residues</u>) but also to any <u>contaminated packaging</u>.</p> <p>Attention of the recipient should be drawn to the possible existence of local disposal regulations.</p> <p><b>14 TRANSPORT INFORMATION</b></p> <p>This section should contain information on codes and classifications according to <u>international regulations/regional regulations</u> for transport, differentiated by the mode of transport, such as land, inland waterways, sea and <u>air</u>.</p>

ISO 11014-1:1994	GHS	Draft of revised ISO 11014-1
<p>classifications according to <u>international regulations [I]</u> for transport, differentiated by the mode of transport, such as:</p> <ul style="list-style-type: none"> <li>- <u>land [A]</u> (railroad/road, such as RID<sup>2</sup>/ADR<sup>3</sup>, DOT 49 CFR<sup>4</sup>);</li> <li>- <u>inland waterways [A]</u> (such as ADNR<sup>5</sup>);</li> <li>- <u>sea [A]</u> (IMDG code<sup>6</sup>);</li> <li>- <u>air [A]</u> (ICAO-TI<sup>7</sup>, IATA-DGR<sup>8</sup>).</li> </ul> <p>The UN classification number <u>[A]</u> should be stated.</p> <p>Additional regulations <u>[A]</u> may be mentioned.</p> <p>Specific precautionary transport measures and conditions <u>[A]</u> should be mentioned.</p> <p><b>15 REGULATORY INFORMATION</b></p> <p>This section should contain information on regulations [A] specifically applicable to the chemical product.</p> <p>Hazard and safety information as written on the label [A] should be indicated under this heading.</p> <p>NOTE 3 This information may be given under standard heading 16.</p> <p>Attention of the recipient should be drawn to the possible existence of local regulations.</p>	<p><b>15. Regulatory information</b></p> <ul style="list-style-type: none"> <li>• Safety, health and environmental regulations specific for the product in question.</li> </ul> <p><b>16. Other information including information on preparation and revision of the SDS</b></p>	<p>The <u>UN number</u>, <u>UN Proper shipping name</u>, <u>Transport Hazard class(es)</u> and <u>packing group</u>, if applicable, should be stated.</p> <p>Marine pollutant (Y/N) should be stated.</p> <p>Special precautions which a user needs to be aware of or needs to comply with in connection with transport or conveyance either within or outside their premises should be mentioned.</p> <p><b>15 REGULATORY INFORMATION</b></p> <p>This section should contain information on safety, health and environmental regulations specific for the product in question.</p> <p><b>16 OTHER INFORMATION</b></p>

ISO 11014-1:1994	GHS	Draft of revised ISO 11014-1
<p><b>16 OTHER INFORMATION</b></p> <p>This section shall provide any further information which may be important from a safety point of view but not specifically relevant to previous headings. For instance, special training needs and the recommended use and possible restrictions of the chemical product may be stated.</p> <p>Literature references may be specified here.</p> <hr/> <p>2) RID = Regulations concerning the international carriage of dangerous goods by rail.            3) ADR = European agreement concerning the international carriage of dangerous goods by road.            4) DOT 49 CFR = US Department of Transportation 49 Code of Federal Regulations.            5) ADN R = Regulations concerning the carriage of dangerous goods on the Rhine.            6) IMDG code = International Maritime Dangerous Goods Code.            7) ICAO-TI = International Civil Aviation Organization - Technical Instructions.            8) IATA-DGR = International Air Transport Association - Dangerous Goods Regulations.</p>	<p><b><u>An Example of a GHS Safety Data Sheet (SDS)</u></b></p> <p><i>Under Review</i></p> <hr/>	<p>This section should provide any further information which may be important from a safety point of view but not specifically relevant to previous headings.</p> <p>Literature references may be specified here.</p>