



Range of Concentration of Ingredients

11. (1) For the purposes of this section, where the concentration of an ingredient of a controlled product or a complex mixture that is a component of a controlled product is expressed as a percentage, the percentage shall be an expression of the ratio of

- (a) the weight of the ingredient or the complex mixture to the weight of the controlled product;**
- (b) the volume of the ingredient or the complex mixture to the volume of the controlled product; or**
- (c) the weight of the ingredient or the complex mixture to the volume of the controlled product.**

(2) Where the concentration of an ingredient of a controlled product or a complex mixture that is a component of a controlled product is required to be disclosed on a material safety data sheet and the ingredient or complex mixture is not always present in the same concentration in the controlled product, the material safety data sheet may disclose, in lieu of the actual concentration of the ingredient or complex mixture, that the ingredient or complex mixture falls within one of the ranges of concentration set out in subsection (3), where the actual concentration of the ingredient or complex mixture falls within that range.

(3) For the purposes of subsection (2), the ranges of concentration are the following:

- (a) from 0.1 to 1 per cent;**
- (b) from 0.5 to 1.5 per cent;**
- (c) from 1 to 5 per cent;**
- (d) from 3 to 7 per cent;**
- (e) from 5 to 10 per cent;**
- (f) from 7 to 13 per cent;**
- (g) from 10 to 30 per cent;**
- (h) from 15 to 40 per cent;**
- (i) from 30 to 60 per cent;**
- (j) from 40 to 70 per cent; and**
- (k) from 60 to 100 per cent.**

(4) If the concentration of an ingredient in a controlled product is not always the same, a material safety data sheet may disclose, in lieu of the actual concentration of an ingredient of a controlled product or of a complex mixture that is a component of a controlled product, a range of concentration other than a range set out in subsection (3) if the disclosed range of concentration falls entirely within a range of concentration set out in subsection (3); [SOR/2001-254; s. 3]



(5) Where the concentration of an ingredient of a controlled product or a complex mixture that is a component of a controlled product disclosed on a material safety data sheet is expressed as a percentage or in a range of concentration set out in subsection (3) or (4), the material safety data sheet shall also disclose which of the ratios set out in subsection (1) is being expressed.

INTERPRETATION / DISCUSSION of SECTION 11

Subsection 11(1):

Subsection 11(1) requires that the percent concentration of components within a mixture be expressed in one of three ways only: weight/weight, volume/volume or weight/volume. Mole percent was not referenced in this section because it had never been proposed. Mole percent is viewed as an acceptable method of expressing concentration and it has been proposed that this section be modified when the *CPR* is next amended, {ref.: PIS No. 53}.

Subsection 11(2):

Subsection 11(2) allows the disclosure of a range of concentration in lieu of the actual concentration of the ingredient for the purposes of disclosure on the MSDS where the ingredient is not always present in the same concentration in the controlled product. Although this section limits the use of a range of concentration to those situations where the ingredient "is not always present in the same concentration in the controlled product", because, in the course of production, the exact concentration of an ingredient will vary, (even if only to a minute degree), a range of concentration may always be disclosed in place of an "exact" concentration.

Subsection 11(3):

The use of "may contain" with respect to ingredient disclosure is **not** acceptable. The disclosure of ranges other than ranges specified in *CPR* 11(3) in respect of ingredients that are not subject to disclosure is outside of the scope of the *HPA*; e.g., (i) ingredients that do not fall within the criteria set out in paragraph 13(a) of the *HPA* or (ii) ingredient(s) that *would* be subject to disclosure but are present below the cut-off(s) established in section 4 of the *CPR*, {ref.: PIS No. 36}.

Where the concentration of ingredients in a series of controlled products covered by the same MSDS varies from batch to batch by more than any one of the ranges specified in subsection 11(3) of the *CPR* because of changes in raw materials or the location of withdrawal of the product from a process stream, and the hazard information for that series of products is otherwise the same, as an administrative policy, it was agreed that the supplier may disclose more than one range on the MSDS provided the reason for such disclosure is also disclosed on the MSDS, {ref.: PIS No. 36}. To prevent abuse of this administrative allowance, this policy does **not** enable a supplier to combine the specified ranges into a single expanded range exceeding any of the ranges specified in paragraphs 11(3)(a) through (k). For example, the MSDS could disclose that a product contains "5 to 10, 10 to 30 or 30 to 60% of ingredient X"; the supplier may **not** combine these three ranges and disclose that the product contains "5 to 50% of ingredient X".

Subsection 11(4):



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CPR Section 11 - [Exemptions, MSDS]; Concentration of Ingredients, Range of

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By virtue of this subsection, the disclosure of a concentration range that falls within a range specified in paragraphs 11(3)(a) through (k) may be disclosed on the MSDS.

Subsection 11(5):

The MSDS must specify the type of ratio being disclosed in respect of the concentration; a suitable abbreviation is acceptable, i.e., w/w, v/v, w/v.

Compressed Gas Mixtures - information disclosure:

To address the nature of specific types of compressed gas mixtures, the following policies, {ref.: PISs no. 44-47}, were adopted in relation to each of the mixtures listed:

1. *Inert gas mixture*

For inert gas (i.e. helium, nitrogen, neon, argon, krypton and xenon) mixtures containing two or more inert gases in any concentration, it is acceptable that:

- (i) "Inert Gas Mixture" be used as the product identifier,
- (ii) the label bear all required hazard information,
- (iii) the actual concentrations of the inert gas ingredients be disclosed on the label on a voluntary basis, and
- (iv) a single MSDS be used for this group of products which lists all possible ingredients. The hazard information would be the same for all products in the group; {ref.: PIS No. 44}.

2. *Carbon dioxide/inert gas mixture*

For mixtures of carbon dioxide and one or more inert gases, it is acceptable that:

- (i) the products be identified on the label as a "Carbon Dioxide/Inert Gas Mixture",
- (ii) the label bear all required hazard information,
- (iii) the actual concentration of carbon dioxide be disclosed on the label and, on a voluntary basis, the actual concentration of inert gas(es) be disclosed on the label, and
- (iv) the MSDS list carbon dioxide and all inert gases as possible constituents. The hazard information would be the same in all cases; {ref.: PIS No. 45}.

3. *Oxygen/inert gas mixture*

For mixtures of oxygen and one or more inert gases it is acceptable that:

- (a) Mixtures containing less than 21% oxygen and varying proportions of one or more of the inert gases
 - (i) bear a label identifying the product as a gas mixture containing less than 21% oxygen, as well as required hazard information and actual concentration of oxygen. The actual



concentration(s) of the inert gas(es) should be disclosed on a voluntary basis.¹

- (ii) the MSDS would list oxygen and all the inert gases as possible constituents. The hazard information would be the same in all cases.
- (b) Mixtures containing 21% or more of oxygen and varying proportions of one or more inert gases,
- (i) bear a label identifying the product as a mixture of more than 21% oxygen, as well as required hazard information and actual concentration of oxygen. The actual concentration(s) of the inert gas(es) should be disclosed on a voluntary basis.
 - (ii) the MSDS would list oxygen and all the inert gases as possible constituents. The hazard information would be the same in all cases; {ref.: PIS No. 46}.

4. *Flammable/inert gas mixture*

For flammable gas/inert gas mixtures, which do not contain toxic or corrosive ingredients, it is acceptable that:

- (a) Where a single flammable gas is found in a concentration less than the LFL (lower flammable limit) for that gas in air,
 - (i) the product bear a label identifying the product as a non-flammable gas mixture as well as disclosing the required hazard information and actual concentration of the flammable gas. The concentration(s) of the inert gas(es) should be disclosed on a voluntary basis.
 - (ii) the MSDS would list all potential constituent gases. The hazard information would be the same in all cases.
- (b) Where the flammable component is found in a concentration greater than the LFL for the gas in air, or where two or more flammable gases are found in a mixture below their respective LFLs but the cumulative effect of all gases makes the mixture flammable, the product
 - (i) would bear a label identifying it as a flammable gas mixture, as well as required hazard information and actual concentration(s) of the flammable gas(es). The concentration(s) of the inert gas(es) should be disclosed on a voluntary basis.
 - (ii) The MSDS would list all the potential constituent gases. The hazard information would be the same in all cases; {ref.: PIS No. 47}.

¹

For certain oxygen/inert gas mixtures, such as specialized breathing gas mixtures for deep water diving or for use by firefighters, it is important to disclose the inert gas concentration(s).



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CPR Section 12 - Information to be Disclosed on a Material Safety Data Sheet

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Information to be Disclosed on a Material Safety Data Sheet

12. (1) For the purposes of subparagraph 13(a)(v) and paragraph 14(a) of the Act, a material safety data sheet shall disclose the nine categories of information set out in column I of an item of Schedule I and each category shall be identified by a heading that is the same as or similar to the suggested heading set out for that category in column II of that item.

(2) Subject to subsections (3) to (10), for the purposes of subparagraph 13(a)(v) and paragraph 14(a) of the Act, the material safety data sheet of a controlled product shall disclose, under an appropriate heading set out in column II of an item of Schedule I or a similar heading, the information set out in each applicable subitem of column III of that item, including the unit of measure, where applicable, if the information is available to the supplier. [SOR/2001-254; s. 4]

(3) The material safety data sheet of a controlled product shall disclose the information set out in column III of subitems 1(1) and 2(1) and (2) of Schedule I under the appropriate heading set out in column II of items 1 and 2 of that Schedule or the similar heading referred to in subsection (1). [SOR/97-543; s. 15]

(4) Information disclosed under one heading of a material safety data sheet is not required to be repeated under any other heading.

(5) Where any information required to be disclosed by subsection (2) is the subject of a claim for exemption or of an exemption under the *Hazardous Materials Information Review Act*, the information shall be replaced by the information required to be disclosed by section 26 or 27.

(6) Where there is no information disclosed in respect of a category set out in column I of an item of Schedule I, the material safety data sheet shall disclose, under the heading for that category in English, the words "not available" or "not applicable", as the case may be, and the material safety data sheet shall disclose, under the heading for that category in French, the words "pas disponible" or "sans objet", as the case may be.

(7) Where a controlled product is sold to a distributor for the purpose of sale or resale, the distributor is not required, on the material safety data sheet, to disclose the supplier identifier of the distributor and particulars of the distributor, if the supplier identifier and particulars of the manufacturer or importer are disclosed on the material safety data sheet in accordance with subsection (2).

(8) Where a controlled product is packaged for a distributor by a manufacturer, the manufacturer is not required, on the material safety data sheet, to disclose the name of the



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manufacturer and particulars of the manufacturer, if the supplier identifier and particulars of the distributor are disclosed on the material safety data sheet in accordance with subsection (2).

(9) Where a supplier imports a controlled product for his own use, the supplier is not required, on the material safety data sheet, to disclose the name of the manufacturer and particulars of the manufacturer.

(10) Where the LD₅₀ or LC₅₀ of a controlled product that is a mixture is determined by testing the mixture, the supplier shall disclose, on the material safety data sheet for the controlled product, that LD₅₀ or LC₅₀ in place of the LD₅₀ or LC₅₀ of the ingredients of the mixture.

(11) In addition to the information required to be disclosed by subsection (2), a material safety data sheet shall disclose all additional hazard information that is available to the supplier with respect to the controlled product or, if appropriate, a product, material or substance that has similar properties, including any evidence based on established scientific principles.

[SOR/2010-38; s.1]

DISCUSSION of SECTION 12

The general format and content of material safety data sheets (MSDSs) is prescribed in this section. For information regarding specific MSDS items and subitems, refer to Schedule I to the CPR.

Classification: disclosure of the "WHMIS" classification is not required on the MSDS. However, if it is company policy to voluntarily disclose this information, then all classifications must be disclosed. If it is company policy to disclose Class B and Class D Divisions and, in the case of Class D, the Subdivisions, then all Divisions and Subdivisions must be disclosed. (Please also refer to the discussion of section 43 of the CPR for information relating to "Redundancy of multiple classifications within WHMIS Class D".)

Format - Use of sixteen ILO heading MSDSs, etc.: As an administrative policy, MSDSs for WHMIS controlled products which use the ILO, ISO, EC, ANSI or GHS 16 heading format are accepted as meeting compliance requirements of CPR Section 12, provided that all 16 headings are disclosed (in the sequence recommended by these other standards) and that the required content specified under Schedule I, Column III of the CPR is addressed. Under the ILO heading "Regulatory Information", the following statement should appear: "This product has been classified in accordance with the hazard criteria of the *Controlled Products Regulations* and the MSDS contains all the information required by the *Controlled Products Regulations*." All headings and subheadings which appear on the MSDS must be addressed by disclosing the relevant information or by declaring that the information is not available or not applicable, as appropriate; {ref.: PIS No. 77}.

Language requirements: Refer to subsections 24(1) and 24(2) of the CPR.

Revisions to MSDSs: Refer to section 29 of the CPR.



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Untested mixtures: For information regarding the disclosure of toxicological and other information for untested mixtures, refer to the discussion under the appropriate category in Schedule I to the CPR in this manual.

Subsection 12(1):

The MSDS must disclose the nine headings shown in column II of Schedule I of the CPR. Although the headings need not be identical to the wording used here they must clearly describe the category of information listed in column I of Schedule I.

These headings *may* be combined to form one heading *provided that* the information contained under the combined heading includes subheadings which are similar to the heading specified in column II of Schedule I; {ref.: PIS No.6}. A combined heading such as "Preparation and Product Information" should not be used since preparation information relates to the preparation of the MSDS and not the product. The nine required headings may be given different prominence on the MSDS (i.e., some may appear as subheadings under another heading; for example, "Fire and Explosion Hazard" may appear as a subheading under the heading "Physical Data"); {ref.: PIS No.13}. Additional headings to describe categories of information other than the nine listed categories may appear on an MSDS.

Subsection 12(2):

This subsection states the conditions under which information in column III of Schedule I must be disclosed and where on the MSDS that information must be disclosed.

With the exception of subitems 1(1), 2(1) and (2), all subitems in column III of Schedule I must be disclosed on the MSDS if that information is both "applicable" (to the controlled product) and "available" to the supplier. "Applicable" information is any information that could help the purchaser and users to properly and safely handle, store and use the product; {ref.: PIS No.11}. "Available" means that the supplier has the information or could readily obtain the information. Testing the product to determine information in column III is not necessary; however, much of the information may be "available" because the product may have been tested to determine if it meets the criteria.

It is recommended that if suppliers use standard MSDS forms, they should indicate "not available" or "not applicable" under any subcategory of information for which there is a specific box on the MSDS where no information is disclosed. A short form for these statements is allowed as long as it distinguishes between the two. For example, "n.a." makes no distinction and is unacceptable while "n.av." and "n.ap." are acceptable. In French, the short forms n.d. (non disponible) and s.o. (sans objet) would be acceptable. (The abbreviated form should be explained on the MSDS); {ref.: PIS No.12}.

The CPR will be amended to more explicitly state that all subheadings which appear on an MSDS be addressed by disclosing the relevant information or by declaring that the information is not available or not applicable, as appropriate, i.e., no subheadings which are on the supplier's MSDS can be left blank. However, the requirement for a subitem to actually appear would be unchanged from the present; i.e. information corresponding to a subitem is, with specific exceptions, only required if it is available and applicable; {ref.: PIS No.76}.



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"Disclosure... under an appropriate heading" means, with the exception of subitems 1(1), 2(1) and (2), all applicable and available subitems in column III must be disclosed under the heading chosen by the supplier for the category of information that the item is found under in Schedule I or under a heading for another category found in Schedule I. For example, LD₅₀ or LC₅₀ values for an ingredient or a mixture could be disclosed under the heading chosen for category 1 (Hazardous Ingredients) or category 7 (Toxicological Properties). However, placing subitem 5(1) (conditions of flammability) under the heading for category 7 would not be appropriate.

Subsection 12(3):

The information required to be disclosed by subitems 1(1), 2(1) and (2) of Schedule I must always be disclosed **and** must always be disclosed on the MSDS under the heading (or a similar heading) chosen for category 1 and 2 information, i.e., the information in respect of these subitems is always considered to be available and applicable. If a supplier chooses to disclose this information under other headings on the MSDS, in contrast to the information required under other Schedule I subitems, it must still be disclosed under the appropriate (or similar) heading set out in items 1 and 2 of column II of Schedule I.

Subsection 12(4):

Subsection 12(2) requires "applicable" and "available" information in column III of Schedule I to be disclosed under "an appropriate heading set out in column II". In some cases, a supplier may believe that it is more appropriate to disclose column III information under a column II heading other than under which that column III subitem appears. This subsection clarifies that where a supplier has already disclosed information on the MSDS, that information need not be reiterated elsewhere on the MSDS.

Subsection 12(5):

Ingredient identity or concentration, subitem 1(1) of column III of Schedule I, will be exempted from the disclosure requirements of subsection 12(3) only if the supplier has filed a claim or is granted an exemption under the *Hazardous Materials Information Review Act*. However, the exempted information must be replaced under the heading chosen for category 1 (Hazardous Ingredients) with the registry number of the claim and the other status of claim information required under sections 26 or 27 of the CPR.

Subsection 12(6):

Where a supplier has no information that is applicable and available under one of the nine required headings, the supplier must state the reason why there is no information supplied, i.e., the MSDS must disclose "not available" or "not applicable".

Where no information is disclosed in respect of a subheading which appears on the MSDS, a user of the product will not know if information is missing or if it is "not available" or "not applicable". The CPR will be amended to more explicitly state that all subheadings which appear on an MSDS be addressed by disclosing the relevant information or by declaring that the information is not available or not applicable, as appropriate.



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Disclosing "no" or "no evidence" in respect of a Column III subitem conveys that a test has been conducted and that the result was negative. It is considered inappropriate to disclose "no" or "no evidence" if the decision was based on the unavailability of information rather than professional judgement. In such circumstances, therefore, "not available" should be disclosed.

Subsections 12(7) and (8):

There are two situations where a supplier of a controlled product may disclose a name other than his/her own as the "supplier identifier" on the MSDS.

Under subsection 12(7), any distributor of the product, whether the distributor is selling the product to another distributor or to an industrial user, may use the manufacturer's or importer's name as the "supplier identifier".

Under subsection 12(8), where the supplier is a manufacturer who is custom packaging the controlled product for a distributor, the distributor's name may be used as the "supplier identifier".

Subsection 12(9):

This subsection applies to importation only. An employer who **is** required to disclose "information that could be used to identify a supplier of a controlled product" either directly or indirectly, pursuant to the provisions of the *Canada Labour Code*, may file a claim for exemption under subsection 11(2) of the *Hazardous Materials Information Review Act* if the employer considers such information to be confidential business information.

Subsection 12(10):

When the LD₅₀ or LC₅₀ of a mixture is unknown, LD₅₀ or LC₅₀ values for the ingredients are useful in providing some indication of the toxicity of the mixture. However, if the LD₅₀ or LC₅₀ of the mixture is known, disclosure of the LD₅₀s or LC₅₀s for the ingredients is unnecessary.

If the LD₅₀ (or LC₅₀) of a mixture is unknown but the LD₅₀ (or LC₅₀) of all the ingredients present in a concentration equal to or greater than 1% are known, then the mixture is considered to be a tested mixture with an LD₅₀ (or LC₅₀) derived from the formula in subsection 45(1) of the CPR. For such a mixture, the MSDS may disclose the LD₅₀ (or LC₅₀) derived from the formula in place of the LD₅₀ (or LC₅₀) of the ingredients; {ref.: PIS No. 29}.

Subsection 12(11):

This subsection was included in the Regulations to ensure that information relating to hazards posed by a controlled product that may not be encompassed by the subitems set out under column III of Schedule I will be disclosed on the MSDS. The term "hazard information" is defined in section 2 of the CPR.

To meet the requirement to disclose "all additional hazard information that is available to the supplier with respect to the controlled product or, if appropriate, a product, material or substance that has similar properties, including any evidence based on established scientific principles", it may not be adequate for a supplier to rely on his/her own knowledge of the product. Suppliers should review relevant information available from, for example:



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- the Canadian Centre for Occupational Health and Safety;
- publications of the regulatory agency with jurisdiction at the workplace;
- publications made available by industry or trade associations of which the employer is a member, and by labour organization(s) which represent workers at the workplace;
- published technical literature {ref.: PIS No. 9}; etc.

Subsection 12(11) requires minimal disclosure of the toxicological properties and the proper and safe storage, handling and use of the controlled product, not of individual ingredients. The particulars of disclosure would depend upon the notoriety of the properties; that is, what the supplier actually knows or what a reasonable supplier acting with reasonable diligence would know.

Subsection 12(11) had required a supplier to disclose on the MSDS "any other hazard information with respect to the controlled product of which the supplier is aware or ought reasonably be aware". The SJCSR concluded that the HPA does not provide the authority for the CPR to state "aware or ought reasonably to be aware". To address this, subsection 12(11) was amended through SOR/2010-38, effective February 23, 2010. As indicated in the Regulatory Impact Analysis Statement that accompanied this and related amendments:

"...They [the amendments] will not change the scope of the HPA/CPR nor what is encompassed by the term 'controlled product'. They do not provide extra powers to the Government nor do they increase the burden for the regulated community."

As these amendments were projected to have no socio-economic impact, they were exempted from pre-publication in Part I of the *Canada Gazette*.



Regulation, section, title/subject:

CPR Section 13 - Information to be Disclosed on Material Safety Data Sheet[conflicting toxicological information]

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13. (1) Where information respecting the toxicological properties of a controlled product disclosed on a material safety data sheet may be interpreted in such a way as to qualify or contradict other toxicological information disclosed on the material safety data sheet, the material safety data sheet shall include sufficient information concerning the toxicological studies so as not to mislead a person as to the nature or extent of the hazard posed by the controlled product.

(2) For the purposes of determining whether information may mislead a person as to the nature or extent of a hazard, the general impression that the information conveys shall be taken into account.

INTERPRETATION / DISCUSSION of SECTION 13

Also see discussion under section 25 of the *CPR*.

Subsection 13(1):

Results derived from toxicity testing of a product can be inconclusive or conflicting. However, it is important that when such information is disclosed on the MSDS, it be done in a way that does not imply that there are no hazards posed by the product (assuming that the product meets the criteria). This can be done by including enough information about the conflicting study so that a proper judgement about the validity of the study can be made.

Subsection 13(2):

This subsection places the onus on suppliers to communicate the hazards associated with a controlled product in a clear, unambiguous manner that does not contradict other information disclosed on the MSDS.

For example, many individuals believe that an exposure limit, in the absence of a qualification to the contrary, is the time weighted average (TWA) exposure limit. It is misleading to disclose a short term exposure limit (STEL) or a ceiling (C) value without qualifying it as such. Therefore, it is considered unacceptable to disclose an exposure limit without specifying which type, ie., without distinguishing between TWA vs STEL vs C.