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Sub-Committee of Experts on the Globally Harmonized System of Classification and Labelling of Chemicals
(Fifth session, 7-9 July 2003, agenda item 2)

Harmonisation of Precautionary Statements **Open Issues**

(First report of the Inter-sessional Working Group on Precautionary Statements)

Submitted by Germany (Lead Country)

Related documents:

ST/SG/AC.10/30 GLOBALLY HARMONIZED SYSTEM OF CLASSIFICATION AND LABELLING OF CHEMICALS (GHS)

ST/SG/AC.10/C.4/2002/15 and /15/Add. 1

ICSC COMPILER'S GUIDE, March 2002

<http://www.ilo.org/public/english/protection/safework/cis/products/icsc/compguid.pdf>

Introduction

1. At its Fourth session in December 2002, the SCEGHS decided to set up a Correspondence Working Group on Precautionary Statements, with Germany as lead Country (see ST/SG/AC.10/C.4/8, para. 27), to work further on this issue. This document is a first thought-starter circulated by the group for further comments and discussion at the 5th session of the SCEGHS.

2. Document ST/SG/AC.10/C.4/2002/15 was a submission to start deliberations on unified precautionary statements being part of a harmonized hazard communication system. Some fundamental aspects have been described for a complete GHS label:

- Precautionary statements is an essential part of the GHS label, as recipients of hazard information are in need to get full advice on how to avoid any hazards.
- A logical connection between hazard statements and precautionary statements is evident.
- Standardization of precautionary statements can be achieved on a basic level if assisting supplementary informations can be implied.
- IPCS offers an internationally accepted expertise in the development of precautionary information for the Chemical Safety Card Programme (ICSC) with translation into several other languages as a continuing process.

3. This submission has been reviewed in the light of the final GHS version recently published. It remains a goal to develop precautionary statements as fully standardized label elements (GHS Chapter 1.4, para.1.4.6.2). Some clarifications and respective decisions are needed in this context to meet the terms of reference.

Hazard assessment

4. If precautionary statements are supposed to be driven by hazard statements, the two fundamentally different conceptions of either the hazard based or the risk based labelling requirements of chemicals (substances and mixtures) have to be considered:

5. In general, the system of classification and labelling of chemicals is based on an assessment of the intrinsic hazardous properties of the chemicals involved (GHS Chapter 1.3, para.1.3.2.2.1; Annex 4, para. A4.1.1).

6. However, there are systems which provide derogations from obligatory labelling of specific health hazards for consumer products if additional data or assumptions clearly show that the respective risks can be excluded for consumers under conditions of normal handling and use or foreseeable misuse. If certain hazards are excluded by such risk based procedure, the corresponding precautionary statements are necessarily excluded as well.

7. The GHS is not intended to harmonize the different approaches. The likelihood of adverse effects may be considered in deciding what informational or regulatory steps should be taken for a given product or use setting (GHS Chapter 1.3, paragraph 1.3.2.2.3). Therefore, to avoid any anticipation of downstream regulations, the primary distinction between consumer and occupational products in the tables of ST/SG/AC.10/C.4/2002/15/Add.1 should be deleted, as this distinction is rather the second step after the precautionary statements assignment.

Option 1: Precautionary statements are solely based on intrinsic properties regarded as hazardous in the GHS.

Option 2: Precautionary statements may be based either according to Option 1 or as derived from a risk assessment procedure where applicable.

Decision Logics

8. Existing decision logics are different in consideration of the physical status of chemical (substances/mixtures), their various physico-chemical properties and specific uses, and the target audiences to be addressed.

9. Differences also exist with respect to the objectives of precautionary measures including but not limited to storage, use, personal protective equipment, medical first aid, and disposal.

10. The aforementioned IPCS Compilers' Guide provides an excellent basis for detailed users' instructions in that, for example, existing occupational workplace exposure limitations are included in the considerations. In the Annex to this document IPCS phrases with their application criteria have been selected to illustrate a very special type of conditioned decision logic for precautionary statements.

Option 1: Precautionary statements to be selected from a review of all existing labelling systems (review to be established).

Option 2: Precautionary statements to be selected from the IPCS catalogue.

In either case, the decision logic to be developed as a part of the globally harmonised communication system should take the GHS hazard criteria into account.

GHS Label Element

11. Whereas, by GHS definition, *Label* means "an appropriate group of written, printed or graphic information elements concerning a hazardous product, selected as relevant to the target sector (s), that is affixed to, printed on, or attached to the immediate container of a hazardous product, or to the outside packaging of a hazardous product", a certain field on the label is supposed to include all harmonised label elements (GHS Chapter 1.4, para. 1.4.10.5.2), here referred to as GHS label block. Example have been given in ST/SG/AC.10/C.4/2002/16/Add.9.

12. A precautionary statement means a phrase (and/or pictogram) that describes recommended measures that should be taken to minimise or prevent adverse effects resulting from exposure to a hazardous product,

or improper storage or handling of a hazardous product (GHS Chapter 1.4, para. 1.4.10.5.2 (c)). The aim of the harmonized system is to present the information in a manner that the intended audience can easily understand (GHS, Chapter 1.4, para. 1.4.4.1).

13. To protect illiterate consumers it might be necessary to include both phrases and pictograms because information should be conveyed in more than one way (GHS Chapter 1.4, para. 1.4.4.1 (a)). It should be noticed, however, that the pictograms in GHS Annex 3 will probably not cover all precautionary aspects to be addressed.

14. In several existing guidances the term *Precautionary Statement* has different meanings. Often combined informations are given including what is defined now in the GHS as *Hazard Statements* comprising the hazard category as well as certain routes of critical exposure. Therefore, it is necessary to introduce a common understanding of precautionary statements as a safety advice for appropriate behaviour in the sense of “Do ... “ and “Do not ...” as a **core element** of the GHS label suitable for standardisation (GHS Chapter 1.4, para. 1.4.6.1).

15. Beyond this GHS label block any additional non-harmonized type of information may be found as supplemental information. This information may be required by competent authorities or it may be additional information provided at the discretion of the manufacturer/distributor (GHS Chapter 1.2). Standardised precautionary statements should be seen as closely connected to such additional information sources on a safe use, provided that the latter do not lower standards of protection (GHS Chapter 1.4, para. 1.4.6.3) and the placement of supplemental information does not impede identification of GHS information (GHS Chapter 1.4, para. 1.4.10.5.4.2).

Option 1: Precautionary statements as a simple as possible advice for a safe use which can be followed by everybody without further instructions;

separation of from any supplemental informations given elsewhere on the label for the advanced user.

Option 2: Precautionary statements as a stand alone system comprising all safety aspects irrespective of any additionally available information sources.

Standardisation

16. Standardisation of statements may mean a standardisation of wording or a standardisation of contents. In the EU system, for instance, there is a precise prescription which wording is to be used for combined “S-phrases“ in any language of its member states. On the other hand, a system might be appropriate which allows for a free combination of standardised phrases provided that all hazard driven aspects of obligatory objectives are addressed. GHS Annex 4 illustrates this type of approach:

Where a statement contains words in brackets, any of the words in brackets may be used in addition to the core information contained in the phrase, or instead of some of this information, as appropriate. e.g. “Keep away from heat” or “Keep away from heat and sparks” or “Keep away from heat, sparks, and flame” or “Keep away from sparks and flame”, etc. Similarly, statements from different groups may be used in combination, e.g. “Keep away from heat and ignition sources and store in a cool well-ventilated place”.

Option 1: Precautionary statements as standardised wording of phrases.

Option 2: Precautionary statements as flexible phrases of mandatory content.

The inter-sessional Working Group on Precautionary Statements is invited to consider the deliberations and to choose from the options given above as appropriate.

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Annex

13200000	PHYSICAL DANGERS:		
13222000	Dust explosion possible if in powder or granular form, mixed with air.	Applies if the substance is combustible and in the form of powder or granules with diameters smaller than 0.5 mm. Do not use this phrase if the literature contains evidence that when the substance is dispersed in air, it cannot be ignited.	
13223000	If dry, it can be charged electrostatically by swirling, pneumatic transport, pouring, etc.		Applies if 13222 has been used and the substance is non-hygroscopic
13300000	CHEMICAL DANGERS:		
13323000	May decompose explosively on shock, friction, or concussion.	Base the application of this and other phrases on explosion depending on data found in relevant literature.	
13600000	INHALATION RISK:		
13617000	Evaporation at 20°C is negligible; a harmful concentration of airborne particles can, however, be reached quickly[]	Applies to liquids with b. p. $\geq 350^\circ\text{C}$ and - OEL/TWA $< 10 \text{ mg/m}^3$ (particle concentrations); or - OEL/TWA not established nor estimated. Complete the phrase with an indication of the conditions or activity which could cause airborne dust or aerosols, e.g., 'by spraying', 'by dispersing', 'if powdered', etc.	
13618000	A [] concentration of airborne particles can be reached quickly[]	Applies to solids with b. p. $\geq 350^\circ\text{C}$, using the window 'harmful' if: - OEL/TWA $< 10 \text{ mg/m}^3$ (particle concentrations); or - OEL/TWA not established nor estimated; or - solids regarded as carcinogenic (refer to 13833/13835). Applies to solids with boiling point $\geq 350^\circ\text{C}$, using the window 'nuisance-causing' if the (estimated) OEL/TWA is $\geq 10 \text{ mg/m}^3$ (particle concentrations). Instead of an OEL/TWA, the specified national limit between harmful and nuisance dust may be used. Complete the phrase with an indication of the conditions or activity which could cause airborne dust or aerosols, e.g., 'by spraying', 'by dispersing', 'if powdered', etc.	

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14100000	Fire: ACUTE HAZARDS.		
14101000	Extremely flammable.	Apply if flammable gas or liquid with flash point < 0°C and a boiling point (or in case of a boiling range, the initial boiling point) < 35°C, and to gases which are flammable in contact with air at ambient temperature and pressure.	
14103000	Highly flammable.	Apply if flammable gas or liquid with flash point > 0°C but < 21°C. Also to a solid which is spontaneously flammable in the air or which may readily catch fire after brief contact with a source of ignition and which continues to burn after the removal of the source of ignition.	
14105000	Flammable.	Includes organic peroxides with relatively high ignition energy (i.e., SADT value > 35°C) and not regarded as explosive. Apply also if the flash point of a liquid is not available but is unlikely to exceed 61°C.	
14107000	Combustible.		Use for substances that are neither flammable (14101, 14103, and 14105 do not apply) nor explosive (14121). If both 14107 and 14115 apply, then use 14115.
14109000	Combustible under specific conditions.	Applies to substances that are normally regarded as non-combustible but for which the phrases 'On combustion forming of....' or 'The substance decomposes on burning....' was used. Examples of liquids in this category: dichloromethane, trichloroethene, and 1,1,1-trichloroethane: they have no flash point but can form explosive vapour/air mixtures.	
14113000	Not combustible but enhances combustion of other substances.	Apply to inorganic chlorites, chlorates, perchlorates (and similar halogen compounds), permanganates, persulfates, some peroxides, nitrates, nitrites, and other non-combustible strong oxidants.	
14115000	Not combustible but forms flammable gas on contact with water or damp air.		Substances such as Na or K that are neither flammable (14101, 14103, and 14105 do not apply) nor explosive (14121), but that on contact with water or humid air evolve flammable gas in dangerous quantities (1 litre/kg/hour or more). If both 14107 AND 14115 apply, then use 14115.
14121000	Explosive.	Applies if the substance when heated in a confined space explodes or appears to be more sensitive to shock or friction than m-dinitrobenzene. If test results or labelling indications are not available, the decision to use this phrase should be taken based on literature references. Use 15109 or 15111 to give further data.	

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14200000	Fire: PREVENTION		
14201000	NO open flames, NO sparks, and NO smoking.	applies to combustible substances with a flash point ≤ 61°C and to solids which are easily ignited in normal air.	applies if any of 14101, 14103, 14105, 14115, or 14121 is used.
14203000	NO open flames.	applies to all other combustible substances. The concept 'open flame' also includes surfaces whose temperature is above the auto-ignition temperature of the substance.	applies if 14107 or 14109 is used.
14205000	NO contact with flammable substances.	used for strong oxidants, including organic peroxides.	applies if 14113 is used or if the substance is a flammable organic peroxide as mentioned in indication of 14103 and 14105.
14207000 to 14207080	NO contact with [acid(s) / alcohol / base(s) / combustibles / halogens / oxidants / reducing agents / water].	applies to substances that can react very violently (involving fire or explosion risks) with the materials mentioned.	can also be used in sub-section Explosion (phrases 15100000).
14209000	NO contact with hot surfaces[.].	If auto-ignition temperature < 200°C: Can be completed with particulars, for instance, '(e.g., steam pipes)'; if applicable, otherwise close with a full stop (.)	
14300000	Fire: EXTINGUISHING AGENTS.		
15109000	Risk of fire and explosion[.].	May be completed with the following: - 'on contact with' - 'if formulations contain flammable/explosive solvents' - 'as a result of (violent) decomposition when' (mentioning which chemicals or circumstances).	
15200000	Explosion: PREVENTION.		
15201000	Closed system, ventilation, explosion-proof electrical equipment and lighting.	applies to liquids with a flash point < 21°C and to flammable gases.	
15203000	Above [value of the flash point]°C use a closed system, ventilation, and explosion-proof electrical equipment.	applies to all liquids with a flash point ≥ 21°C but ≤ 61°C.	
15205000	Above []°C use a closed system, ventilation.	applies to all liquids with a flash point > 61°C but < 100°C. In the case of liquids with a flash point ≥ 100°C, no special attention is paid to the explosion hazard which exists at temperatures above the flash point.	
15207000	Prevent build-up of electrostatic charges (e.g., by grounding).	applicable to those combustible liquids which can generate electrostatic charges as a result of flow, friction, or other action	applies if a liquid with a flash point < 100°C and an electric conductivity < 10 000 pS/m

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15209000	Prevent build-up of electrostatic charges (e.g., by grounding) if in liquid state.	applicable to liquefied gases which can generate electrostatic charges as a result of flow, friction, or other action	applies to flammable gases liquefied by compression or cooling and an electric conductivity < 10 000 pS/m
15211000	Do NOT use compressed air for filling, discharging, or handling.	used with highly flammable liquids with a view to prevent the formation and spreading of ignitable vapour/air mixtures and mists:	applies to liquids with a flash point < 21°C; NOT to compressed liquefied gases.
15213000	Use non-sparking handtools.	Combustible vapour/air mixture can be ignited by sparks of a certain minimal energy. If this is lower than the quantity of energy in sparks from normal handtools, this phrase is used.	applies if the minimum ignition energy is < 0.6 mJ;
15215000	Do NOT expose to friction or shock.	Relates to substances which may undergo explosive decomposition as a result of concussion or friction.	applies if 13323 is used.
15217000	Prevent deposition of dust; closed system, dust explosion-proof electrical equipment and lighting.	applicable to cases where finely dispersed powder in air is explosive.	applies if 13222 was used.
15219000	Prevent build-up of electrostatic charges (e.g., by grounding).		applies if 13223 was used.
15300000	Explosion: FIRE EXTINGUISHING AGENTS.		
16200000	Physical contact: PREVENTION.		
16201000	PREVENT DISPERSION OF DUST!	concerns solids that may induce formation of powder or dust on handling and may cause serious adverse effects.	If 13618 is used, this applies in case of 'harmful' concentrations (see OEL=Occupational Exposure Limit).
16203000	PREVENT GENERATION OF MISTS!	concerns liquids with high boiling points that may induce formation of mists on handling and may cause serious adverse effects.	If 13617 is used, this applies for high boiling liquids (see Occupational Exposure Limit).
16205000	STRICT HYGIENE!	This extra warning is given when a substance is considered to be so dangerous that particular caution must be exercised.	The application of this phrase should be considered if the substance is: - a gas with an OEL ≤ 10 ppm or a rat LC50 (<4hr) ≤ 0.5 mg/l; - a liquid or solid with a RIR ≥ 4000; or - a solid (powder) with an OEL < 1 mg/m ³ or a rat oral LD50 ≤ 25 mg/kg. (RIR = Relative Inhalation Risk)

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16207000	AVOID ALL CONTACT!	given only for highly dangerous substances. The symptoms may appear either immediately or after some time has passed.	Apply if the substance is: - a very corrosive or easily sensitizing substance; - carcinogenic to humans - mutagenic to humans ; or - one for which all contact should be avoided because of serious hazard of irreversible damage. 'Contact' is to be regarded as a short-time contact of the substance in its normal physical state with the skin or on the inhalation/ingestion of very small quantities.
16209000	AVOID EXPOSURE OF (PREGNANT) WOMEN!	given for substances which are toxic to the reproduction and/or with a teratogenic effect.	Applies to (suspected) teratogenic substances and to substances toxic to the reproduction.
16210000	AVOID EXPOSURE OF BREASTFEEDING WOMEN!	Use this phrase if there is evidence that the substance has been detected in the milk and the one phrases 13851- 13855 has been selected.	A decisions to use this phrase must be a conclusion taken by the Peer-Review Committee.
16211000	AVOID EXPOSURE OF ADOLESCENTS AND CHILDREN!	It should be forbidden to assign tasks to teenagers and to children in which they can be exposed to dangerous substances, as they are far more sensitive to the impact of noxious chemicals than adults. This phrase should therefore be superfluous. Yet it has been used on the ICSCs of many substances as an extra warning to keep the substance out of the reach of teenagers and children.	The use of this phrase should be decided by the Peer Review group.
16300000	Physical contact: FIRST AID.		
16301000	IN ALL CASES CONSULT A DOCTOR!	As the substance can cause serious effects by all routes of exposure, a doctor should be consulted.	Apply if serious effect can occur by all routes of exposure.
17200000	Inhalation: PREVENTION.		
17201000	Ventilation.	This applies to liquids or solids that do not in general carry serious risks when their vapour is inhaled, i.e. substances for which the OEL will not be exceeded under normal operating conditions.	Applies if the RfR < 12 and the substance is not a powder. Do NOT use combinations of the 17200 series. If not applicable, use a free phrase. Sometimes there is no inhalation risk whatever, for instance if the RfR < 1 or when dealing with solids (b.p. ≥ 350°C) in lumps. In these cases no phrase is used.
17202000	Avoid inhalation of [dust/mist]		

17203000	Ventilation (not if powder).	<p>applies to solids that do not in general carry serious risks when inhaled, i.e. substances for which the OEL will not be exceeded under normal operating conditions. The addition ('not if powder') is used if the substance also comes as a powder, that easily could be scattered by air streams caused by a ventilation system. As the inhalation of a powdered substance, even when of relatively low toxicity, should be prevented, ventilation should not be used in those cases.</p>	<p>Applies if the RIR < 12 and exposure to the substance as a powder. Do NOT use combinations of the 17200 series. If not applicable, use a free phrase. Sometimes there is no inhalation risk whatever, for instance if the RIR < 1 or when dealing with solids (b.p. $\geq 350^{\circ}\text{C}$) in lumps. In these cases no phrase is used.</p>
17204000	Avoid inhalation of fine dust and mist.		
17205000	Local exhaust or breathing protection.	<p>applies to solid substances that are normally handled as powder or crystals. Even when the crystals are relatively large a certain portion will be powdered by mutual friction. In those cases local exhaust should be considered as a means of inhalation protection in the first place. If in spite of local exhaust an adverse concentration of the substance in the air could occur, one should use respiratory protective equipment such as:</p> <ul style="list-style-type: none"> - fresh-air hoods or masks; - filter respirators with adsorption cartridge or canister of the right type; - particle dust respirators, if necessary combined with an adsorption cartridge. <p>For the selection of respiratory protective equipment always consult a safety officer or an occupational hygienist. Rules for the selection may differ by nation. Important points for all types of respiratory protective equipment are:</p> <ul style="list-style-type: none"> - choice of appropriate equipment; - clear operating instructions; - frequent checks on proper use; and - for filters: observance of the guarantee period, their limited adsorption capacity, and the concentration of oxygen in ambient air (it should be > 18%). 	<p>Applies for solids which can develop dust on handling. Do NOT use combinations of the 17200 series. If not applicable, use a free phrase.</p>
17206000	Local exhaust.		
17207000	Ventilation, local exhaust, or breathing protection.		
		<p>One of these measures has to be employed for a liquid or gas whose OEL can be exceeded under normal conditions. When using closed apparatus, ventilation may be adequate; in other cases local exhaust or respiratory protective equipment has to be used.</p>	<p>Applies if the substance is a liquid or gas with a RIR ≥ 12. Do NOT use combinations of the 17200 series. If not applicable, use a free phrase.</p>

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17209000	Ventilation (not if powder), local exhaust, or breathing protection.		Applies if the substance is a liquid or gas and also for solids with a RfR ≥ 12 which may come in dusting as well in non-dusting form. Do NOT use combinations of the 17200 series. If not applicable, use a free phrase.
17211000	Breathing protection.		Normally this phrase should NOT be used. The application should be a Peer-Review decision based on arguments presented by the compiler. Do NOT use combinations of the 17200 series. If not applicable, use a free phrase.
17213000	Closed system and ventilation.	to be used for those substance for which the inhalation hazard of vapour or dust is so high that the application is only acceptable in totally closed systems. Even then ventilation is necessary as minimal leakage could occur. When handling such substances (e.g., for internal transport) the containers should be of high quality and leak-proof.	Apply only to those few substances for which processing in a closed system is the only solution, e.g., IARC Class I carcinogens. Consider first the alternatives 17205/09 as detailed in their ind. and expl. ('Avoid contact' does not necessarily imply 'closed system'!) Do NOT use combinations of the 17200 series. If not applicable, use a free phrase.
17216000	Closed system.		
17300000	Inhalation: FIRST AID.		
17301000	Fresh air, rest.		applies to all cases where the inhalation of a substance has given rise to complaints or symptoms.
17303000	Half-upright position.	in those cases where inhalation of a severely irritating or a corrosive substance has led to shortness of breath or which is likely to cause lung oedema. This position is often the most comfortable for the patient.	Apply to substances likely to cause lung oedema.
17305000	Artificial respiration may be needed.	applies to serious cases where the patient has stopped breathing altogether or nearly altogether. Artificial respiration is also indicated in cases of acute laboured breathing with a risk of suffocation. In many cases where the ICSC recommends artificial respiration, an obvious first choice would be to administer oxygen, but this form of treatment has been left out deliberately. It should be administered exclusively by specially trained first aid and medical personnel or doctors.	Applies when, based on collective information on the chemical and symptoms, respiratory distress might be expected. If an oxygen apparatus should be available when handling the concerning substance, then also use 24425.
17306000	No mouth-to-mouth artificial respiration.		Use when the substance involved could be found at toxic levels in the exhaled air of the victim. Use only in rare cases, such as for cyanides.

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17309000	Refer for medical attention.	<ol style="list-style-type: none"> 1. Treat the patient by observation and supportive measures as indicated by his/her condition. 2. If the services of a Medical Officer or a Medical Doctor are readily available, the patient should be placed in his/her care and a copy of the ICSC should be provided. Further action will be the responsibility of the Medical Specialist. 3. If medical attention is not available on the work site or in the near surroundings, send the patient to a hospital, together with a copy of the ICSC. 	
18200000	Skin: PREVENTION.		
18201000	Protective gloves.	In general it is necessary to use protective gloves when handling chemicals. With only a few substances that are physiologically regarded as harmless could one refrain from the use of gloves, provided the contact period is short. To prevent injury to and/or absorption through the skin, gloves made of rubber or plastic impermeable to the substance in question should be used. For some chemicals however, a glove material that offers adequate protection is not yet available; such substances must therefore be handled only in effectively protected equipment (i.e., closed). As regards the choice of the glove material, the safety officer should be asked for advice.	<p>Applies to all substances with the exception of:</p> <ul style="list-style-type: none"> - solid substances which can be regarded as physiologically inert; - liquids frequently handled at a temperature > 50°C; - liquids frequently handled at a temperature < -30°C; - liquids with a boiling point < 20°C; or - liquefied gases in cylinders (13105).
18203000	Cold-insulating gloves.		<p>Use this phrase for:</p> <ul style="list-style-type: none"> - liquids with a temperature < -30°C; - liquids with a boiling point < 20°C; or - liquefied gases in cylinders (13105).
18205000	Heat-insulating gloves.		<p>Use this phrase for liquids frequently handled at a temperature > 50°C.</p>
18207000	Protective clothing.	The use of protective clothing is recommended when even occasional contact with a substance through the normal working clothes can have serious consequences. The safety officer should decide whether working conditions require the wearing of protective clothing and, if so, the type to be worn.	<p>Applies to the following substances:</p> <ul style="list-style-type: none"> - liquids which cause skin burns, such as strong oxidants and concentrated strong acids and bases; - substances which may cause sensitization; or - substances whose absorption through the skin involves hazards.
18300000	Skin: FIRST AID.		
18301000	Remove contaminated clothes.	Usually it makes sense to take off contaminated clothes and shoes as soon as possible to avoid further contact between them and the skin. It is better, however, to start with a rinse or a shower and to take off clothing during this treatment.	

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18303000	ON FROSTBITE: rinse with plenty of water, do NOT remove clothes.	In case of frostbite, do not remove clothing because of the increased risk of infection when blisters burst. Obviously, the contaminated clothes and skin must be rinsed with plenty of water.	Applies to substances that can cause frostbite, i.e., if 13741 or 13743 is used.
18305000	Rinse with plenty of water, do NOT remove clothes.	In case of frostbite, do not remove clothing because of the increased risk of infection when blisters burst. Obviously, the contaminated clothes and skin must be rinsed with plenty of water.	To be used in special cases.
18307000	First rinse with plenty of water, then remove contaminated clothes and rinse again.	When the skin and clothing are heavily contaminated with strong oxidants or with strong reducing agents, the clothes could catch fire. In those cases it is preferable to rinse first with water or have a shower and only then remove contaminated clothes.	Applies if 13361 or 13363 is used.
18309000	Rinse and then wash skin with water and soap.	This means active, thorough cleaning of the skin; 18311 applies for passive cleaning of the skin with water only. Do not wash if the skin is damaged or likely to be damaged.	
18311000	Rinse skin with plenty of water or shower.	This means the passive cleaning of the skin with water only; 18309 applies for active, thorough cleaning of the skin. Do not wash if the skin is damaged or likely to be damaged.	
18313000	To remove or neutralize substance use []; do NOT use water.	This phrase is used in those exceptional cases where water could make things worse. The solvent to be used is mentioned.	
18315000	Refer for medical attention.	<ol style="list-style-type: none"> 1. Treat the patient by observation and supportive measures as indicated by his/her condition. 2. If the services of a Medical Officer or Medical Doctor are readily available, the patient should be placed in his/her care and a copy of the ICSC should be provided. Further action will be the responsibility of the Medical Specialist. 3. If medical attention is not available on the work site or in the near surroundings, send the patient to a hospital, together with a copy of the ICSC. 	
18317000	Wear protective gloves when administering first aid.		

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19200000	Eyes: PREVENTION.		
19201000	Safety spectacles,	To be used for protection against liquid and/or solid substances that present little danger to eyes and skin upon occasional contact (apart from mechanical danger).	This phrase can be combined with 19205 or 19207. This phrase should be applied to all substances that do not require more complete means of protection. Exceptions: - solids which cannot easily be dispersed, e.g., pastes; or - gases in cylinders which are in themselves not dangerous to the eyes.
19203000	Safety goggles,	To be used for liquid and solid substances including fine powders that may endanger the eyes, but present little danger to the (facial) skin upon occasional contact.	Applies if the substance is corrosive to the eyes but not to the skin (see 13705 and its alternatives), or if the substance occurs as a powder and is a nuisance to the eyes. This phrase can be combined with 19205 or 19207.
19205000	Face shield,	To be used for liquid or non-dusting solid substances that are dangerous to both eyes and skin.	Applies if the substance is corrosive to skin (see 13705 or its alternatives), or if an acute absorption hazard (18103), or if 11303 (liquefied gas) was used. This phrase can be combined with 19201 or 19203 by starting it with 'or'; without 'or' it can also be applied either alone or in combination with 19207.
19207000	or eye protection in combination with breathing protection.	Depending on the work situation, this alternative to any of the preceding means of eye protection has to be used for substances that are both dangerous to the eyes AND: - involve a great risk of inhalation of a harmful vapour concentration; - inhalation of which in the form of a finely dispersed powder, such as in the event of dusting, should definitely be avoided; or - must on no account be allowed to come into contact with the skin. The combination may consist of: - a fresh-air hood; - a full-face respirator with either fresh-air supply or filter of the right class (powders) or type (vapours); - a fresh-air helmet (for some solids only).	used for gases or liquids. Applies if the RIR > 4000 and any skin contact should be avoided; or inhalation of powder from the substance is not allowable, and any skin contact should be avoided.
19209000	or eye protection in combination with breathing protection if powder.		used for solids which may come as a powder. Applies if RIR > 4000, and any skin contact should be avoided; or inhalation of powder from the substance is not allowable, and any skin contact should be avoided.

Annex

19300000	Eyes: FIRST AID.		
19301000	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.	Rinse continuously with water, preferably for at least 15 minutes. After rinsing, the victim should see a doctor in all cases, whether for treatment or for a check-up only. He/she should be escorted if indicated.	Apply in all cases.
20200000	Ingestion: PREVENTION.		
20201000	Do not eat, drink, or smoke during work.	there should never be eating, drinking, or smoking during work. Although this recommendation could be considered to form a normal part of the general rules of conduct, it is mentioned on all ICSCs as an extra warning. In view of the great risk of food being contaminated during the handling of toxic powders or viscous toxic liquids, this warning applies especially to those substances.	Generally applies to all substances. It should be a Peer-Review decision not to select.
20202000	Wash hands before eating.	It is highly advisable to wash one's hands before eating.	Applies to pesticides, toxic and very toxic substances. Peer-review decision not to select.
20300000	Ingestion: FIRST AID.		
20301000	Rinse mouth.	This is especially important when the throat and mouth are likely to be affected.	Application to be considered per substance. In any case if a corrosive or irritant liquid or solid.
20305000	Give a slurry of activated charcoal in water to drink.	Some toxic substances can be absorbed by activated charcoal. At least 3 tablespoons in a glass of water should be given. However, NEVER GIVE AN UNCONSCIOUS PATIENT WATER TO DRINK!	Applies to solid toxic substances, soluble in water, with an oral LD50 <200 mg/kg. Do NOT apply to liquids, because the quantity ingested accidentally is in general too large to be absorbed by a limited quantity of charcoal. Charcoal is not effective against mineral acids or alkalies and is less effective against substances such as DDT, cyanides, ethanol, methanol, water-insoluble, compounds and many metals. Other applications based on professional judgement; see also Dreisbach, Handbook of Poisoning. Do not use if/when phrase 13718 is used.
20307000	Induce vomiting (ONLY IN CONSCIOUS PERSONS!).	Inducing vomiting is dissuaded as a first aid measure because of the risk of aspiration of stomach contents. It is better to take the patient to a doctor who can decide on the necessity and method of emptying the stomach. This phrase will therefore only be applied in special cases. NEVER INDUCE VOMITTING IN AN UNCONSCIOUS PERSON!	Apply to substances with an oral LD50 < 200 mg/kg combined with a high resorption rate, e.g., certain pesticides. In these cases the aspiration danger does not prevail. Do not use for corrosive or caustic substances and organic solvents of low viscosity.

Annex

20309000	Do NOT induce vomiting.	While inducing vomiting is dissuaded in general, this warning is given for corrosive or caustic substances and organic solvents of low viscosity. Corrosives and caustics cause extra harm to mucous membranes on vomiting, and solvents may cause chemical pneumonitis if aspirated.	Add systematically for all corrosive and severely irritating substances, and organic solvents of low viscosity, excluding very toxic substances.
20311000	Give nothing to drink.		
20312000	Give plenty of water to drink.		
20313000	Rest.		
20315000	Wear protective gloves when inducing vomiting.		
20317000	Refer for medical attention.	Expl. 1. Treat the patient by observation and supportive measures as indicated by his/her condition. 2. If the services of a Medical Officer or Medical Doctor are readily available, the patient should be placed in his/her care and a copy of the ICSC should be provided. Further action will be the responsibility of the Medical Specialist. 3. If medical attention is not available on the work site or in the near surroundings, send the patient to a hospital, together with a copy of the ICSC.	
21000000	SPILLAGE DISPOSAL		
21217000	Do NOT wash away into sewer.	This is mentioned as an extra warning in case of very flammable liquids which are practically insoluble in water, thus causing a serious explosion hazard in the sewer.	Applies if a liquid with a flash point < 21°C and a solubility in water < 1 g/100 ml (i.e., not or only slightly soluble). Also see 21000. Apply also if 13902-13909 and/or 23507 have been selected. Do not use for environmental hazard - use 21245 instead.
21245000	Do NOT let this chemical enter the environment.		Applies if 13903 was used. (13903: This substance may be hazardous in the environment; special attention should be given to [])

Annex

22000000	STORAGE		
22101000	Fireproof.	specified for flammable substances and for flammable gases in cylinders. Also for solids which can develop combustible gases if in contact with water or water vapour and for solids which for any reason should be stored under fireproof conditions. Fire-proof implies: - the construction and location of the storage accommodation - the possibility of collecting part of the stored liquid to limit spreading; - compartments within a building to separate reactive substances from one another; - special requirements for electrical, heating, and sewage installations; - adequate ventilation to open air; - provision of sufficient fire extinguishing agents and facilities; - regulations, e.g., for filling, discharging, and handling - no-smoking and other warning signs; and - suitable packaging of stored substances.	Applies to: - gases in cylinders, only if combustible; - substances with flash points < 61 °C and all those for which 14101, 14103, 14105, 14115, or 14121 has been used; or - substances which may decompose readily on heating, producing very toxic gases or vapours (rat LC50 (4 hr) ≤ 0.5 mg/l).
22103000	Fireproof if in building.	applies to gas-cylinders stored within a building, even if the gas is not combustible. See 22000 and 22101.	Applies if non-combustible gas in cylinders. Also see 22101.
22105000	Provision to contain effluent from fire extinguishing.	On extinguishing a fire with water, the effluent will be polluted by the burning substance and its combustion products. In the case of very ecotoxic substances, storage provisions should be taken to prevent the effluent water from reaching sewers and/or surrounding surface waters.	Applies in the case of pesticides, chloro-organics, and other very ecotoxic substances. (Criteria to be further elaborated).
22201000 to 22207000	Separated from [combustible and reducing substances/ strong oxidants/ strong bases/ strong acids]	This is recommended if the substance can react violently with the substances mentioned. IMPOR TANT DATA, contains information about reactivity.	Combine with one or more of 22202/03/05/07/08. These should not be used for substances in gas-cylinders!
22301000	Cool.	This is applicable to cylinders, highly volatile liquids, and to substances which may decompose, polymerize, or form peroxides upon warming. In general a storage temperature below 25°C will be sufficient.	Applies if 'very volatile' is used (see indication 13113), or if an undesired reaction occurs, or dissolved gas comes free on warming above 30°C.
22303000	Cooled.		Applies if a storage temperature < 10°C is necessary.
22305000	Dry.	This applies to hygroscopic and deliquescent substances as well as to substances which may react with water and/or moist air. This phrase is also used for liquids in bottles and drums to emphasize the necessity to keep the container well closed.	Applies to hygroscopic and deliquescent substances, and chemicals that may react with water or moist air. Also use for liquids in bottles and drums.

Annex

22307000	Keep in the dark.		Apply if the chemical reacts or polymerises, or forms peroxides under the influence of light. Do not use when exposure to light degrades the quality of the substance, e.g., by discoloration, without creating hazardous conditions.
22308000	Well closed.		
22309000	Ventilation along the floor.	This applies to substances which may form dense vapour/air mixtures that stay near the floor.	Applies if boiling point is < 350°C and flash point > 61°C or if non-combustible and the relative density of vapour/air mixture ≥ 1.0 at 20°C.
22311000	Ventilation along the floor and ceiling.		Applies if a gas with molecular mass < 29.
22313000	Keep in a well-ventilated room.		For substances for which 22309 does not apply, but nevertheless on long storage need ventilation because they very slowly release harmful vapours, e.g., high boiling pesticides.
22401000	Keep under inert gas.	Nitrogen or a noble gas is generally suitable for use as an inert gas. If flue gas or carbon dioxide is available, an expert must first be consulted.	Apply if the substance reacts or polymerises readily on contact with air.
22403000 to 22403050	Keep under [alcohol/ mineral oil/ oxygen/ petroleum/ water].		
22405000	Store only if stabilized.	The selection of an inhibitor/stabilizer must always be left to an expert, whose assistance is also needed when there is uncertainty as to whether the inhibitor has been added.	Apply if the substance polymerises or may react violently or form hazardous compounds during storage (with, e.g., atmospheric oxygen, peroxide formation, etc.).