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Implications of changes: GHS, Labelling and Transport

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Objectives of presentation

- To achieve the following understanding:
- Definition of HCA (GHS)
- Roles & Responsibilities (SDS labelling & transport)
- Occupational Exposure Limits (OEL's)

HCS transformed into HCA

Old definition was simple, but not GHS:

"HSC" or "hazardous chemical substance" means any toxic, harmful, corrosive, irritant or asphyxiant substance, or a mixture of such substances for which –

(a) an occupational exposure limit is prescribed; or

(b) an occupational exposure limit is not prescribed; but which creates a hazard to health;

New definition GHS and not simple:

"hazardous chemical agent" or **"HCA"** means a GHS-aligned chemical agent as provided for in Annexure 1;

Step 1 Classification

Classification of hazardous chemical agents

14. The manufacturer or importer of a chemical agent must, before it is supplied to a workplace—

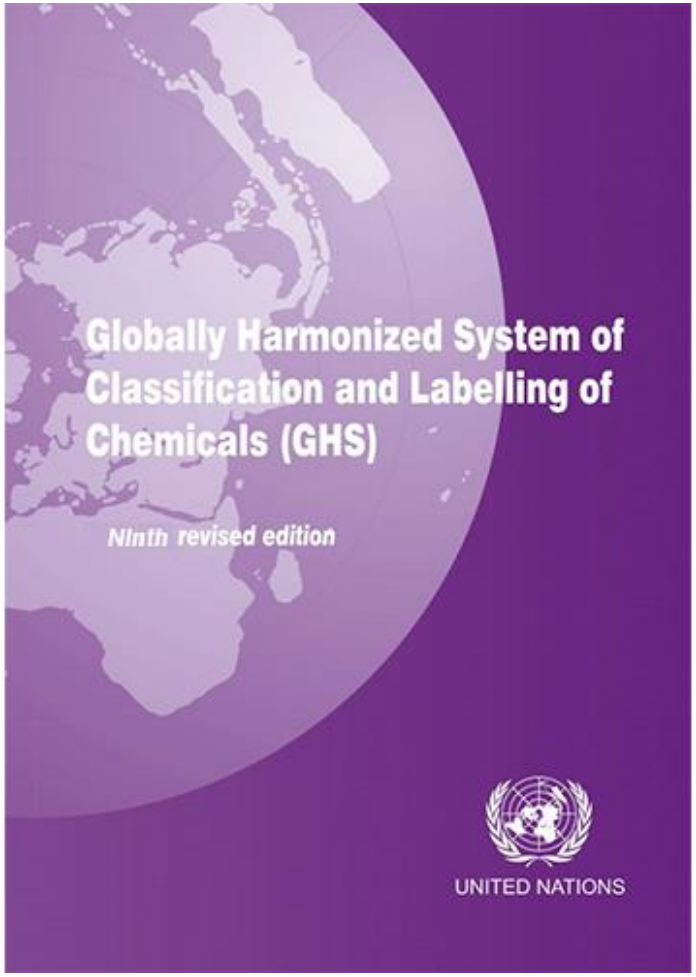
(a) determine whether the chemical agent is an HCA by carrying out a hazard assessment referencing the cut-off values provided in Tables 4 and 5 of Annexure 1;

(b) if the substance, mixture or article is an HCA, ensure that a GHS classification is carried out for the HCA; and

(c) review the GHS classification should a change in the composition of the HCA be made.

What is the GHS?

- United Nations Globally Harmonised System
- Globally – practically everyone around the world uses the system
- Harmonised – everyone uses the same system
- System – standard way to define and classify hazards
- Communicates information on labels and safety data sheets (SDS)



Annexure 1: "Health" part of HCA definition

Table 2: GHS HAZARD CLASSES – HEALTH HAZARDS

HAZARD CLASSES	CATEGORIES			
Acute toxicity				
Oral	Cat 1	Cat 2	Cat 3	Cat 4
Dermal	Cat 1	Cat 2	Cat 3	Cat 4
Inhalation	Cat 1	Cat 2	Cat 3	Cat 4
Skin corrosion/irritation	Cat 1, 1A, B & C[a]	Cat 2		
Serious eye damage/eye irritation	Cat 1	Cat 2/ 2A		
Respiratory sensitizer	Cat 1	Cat 1A[a]	Cat 1B[a]	
Skin sensitizer	Cat 1	Cat 1A[a]	Cat 1B[a]	
Germ cell mutagenicity	Cat 1, 1A & B	Cat 2		
Carcinogenicity	Cat 1, 1A & B	Cat 2		
Reproductive toxicity	Cat 1A & B	Cat 2	Lactation	
Specific target organ toxicity - single exposure	Cat 1	Cat 2	Cat 3	
Specific target organ toxicity - repeated exposure	Cat 1	Cat 2		
Aspiration hazard	Cat 1	Cat2		

GHS HAZARD CATEGORIES

1 = Severe Hazard
2 = Serious Hazard
3 = Moderate Hazard
4 = Slight Hazard
5 = Minimal Hazard

GHS?

STD UN GHS

Table 3.1.3: Label elements for acute toxicity

	Category 1	Category 2	Category 3	Category 4	Category 5
Symbol	Skull and crossbones	Skull and crossbones	Skull and crossbones	Exclamation mark	*No symbol*
Signal word	Danger	Danger	Danger	Warning	Warning
Hazard statement:					
--Oral	Fatal if swallowed	Fatal if swallowed	Toxic if swallowed	Harmful if swallowed	May be harmful if swallowed
--Dermal	Fatal in contact with skin	Fatal in contact with skin	Toxic in contact with skin	Harmful in contact with skin	May be harmful in contact with skin
--Inhalation see Note	Fatal if inhaled	Fatal if inhaled	Toxic if inhaled	Harmful if inhaled	May be harmful if inhaled

HCA GHS

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Acute toxicity					
Oral	Cat 1	Cat 2	Cat 3	Cat 4	
Dermal	Cat 1	Cat 2	Cat 3	Cat 4	
Inhalation	Cat 1	Cat 2	Cat 3	Cat 4	

Missing?

Cut-off values

- **Concentrations expressed as % of ingredients**

Table 1.5.1: Cut-off values/concentration limits for each health and environmental hazard class

Hazard class	Cut-off value/concentration limit
Acute toxicity	≥ 1.0%
Skin corrosion/Irritation	≥ 1.0%
Serious eye damage/eye irritation	≥ 1.0%
Respiratory/Skin sensitization	≥ 0.1%
Germ cell mutagenicity (Category 1)	≥ 0.1%
Germ cell mutagenicity (Category 2)	≥ 1.0%
Carcinogenicity	≥ 0.1%
Reproductive toxicity	≥ 0.1%
Specific target organ toxicity (single exposure)	≥ 1.0%
Specific target organ toxicity (repeated exposure)	≥ 1.0%
Aspiration hazard (Category 1)	≥ 1.0%
Aspiration hazard (Category 2)	≥ 1.0%
Hazardous to the aquatic environment	≥ 1.0%

Summary HCA

How to determine if chemical is a “hazardous chemical agent”?

1. **Is it classified with a hazard class and category?**
2. **Is concentration <0.1%?**

Prohibitions

13. No person may, as far as is reasonably practicable—

(c) use statements such as "non-toxic", "non-harmful", "non-polluting" or "non-hazardous" or similar statements indicating the HCA as not hazardous, or any other statements that are inconsistent with the HCA's GHS classification on the label or packaging of any HCA; and

The dose makes the poison!

Not only employer has responsibilities

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14A. Safety data sheet

(1) Subject to section 10(3)*(b)* of the Act and regulation 14, a safety data sheet for an HCA must be—

(a) prepared by an importer or manufacturer before manufacture and, if this is not reasonably practicable, immediately after

(b) provided by a manufacturer or importer to—

(c) provided by a supplier of the HCA—

(d) obtained by the employer from the manufacturer, importer or supplier of the HCA and provided to—

Labelling extends to retailers

14B. Labelling of hazardous chemical agents

(1) With regard to the labelling of an HCA—

(a) a manufacturer or importer of an HCA must ensure that the HCA is correctly labelled as soon as practicable after the HCA is manufactured or imported;

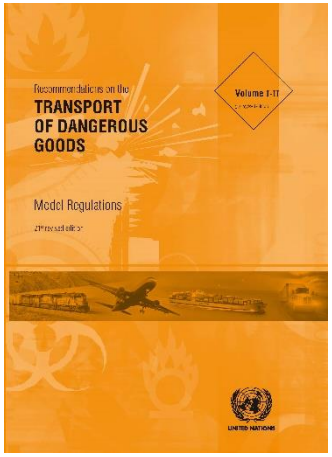
(b) a supplier of an HCA may not supply an HCA if it is not correctly labelled;

(c) a retailer of an HCA may not supply any consumer product containing an HCA to be used in a workplace if it is not correctly labelled; and

(d) an employer must—

(iv) ensure that an HCA within pipework is identified by a label or sign or in any other suitable manner, on or near the pipework, subject to the following:

UN Transport of Dangerous Goods (TDG)



14C. Packaging of hazardous chemical agents

(1) Packaging for an HCA must satisfy the relevant requirements of the UN Transport of Dangerous Goods, with respect to packaging and fastenings, or, where applicable, the UN IMO International Maritime Dangerous Goods Code, including the following requirements:

(a) The manufacturer or importer of an HCA must ensure that the HCA is correctly packed, as soon as reasonably practicable after manufacturing or importing.

(b) For the purposes of paragraph (a), the expression "correctly packed" means—

(i) that the packaging is in sound condition;

(ii) that the packaging is durably and legibly marked;

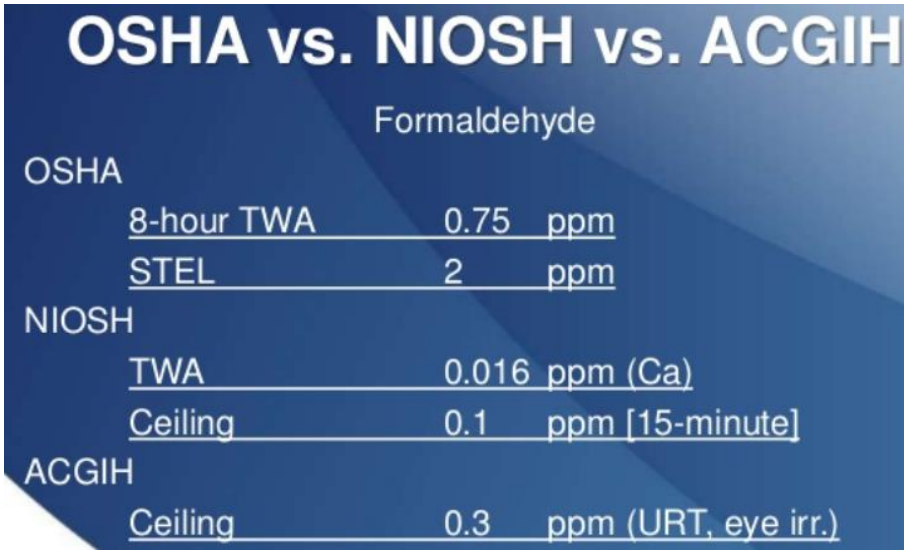
(iii) that the packaging will safely contain the chemical for the time the chemical is likely to be packed;

(iv) that the packaging is made of a material that is compatible with the HCA and will not be adversely affected by the HCA;

OEL's - Guideline versus Law

Guideline versus Law

- ACGIH TLVs are health-based guidelines, not law (anywhere)
- ACGIH BEIs are health-based guidelines, not law
- The draft BEIs in the draft HCS Regs have always been guidelines, not law – this remains in the draft HCA Regs



New draft definitions

- **“OEL-ML” or “occupational exposure limit-maximum limit” means an HCA as listed in Table 2 of Annexure 2 (OLD CL)**

- **“OEL-RL” or “occupational exposure limit-restricted limit” means an HCA as listed in Table 3 of Annexure 2 (OLD RL)**

Draft OEL & BEI review

- **Guidance values such as ACGIH TLV's, NIOSH REL's do not consider socio-economic factors - not aligned with "reasonably practicable"**
- **Legal values were reviewed. E.g:**
  - SA RHCS and DMR
  - US – PEL's
  - UK WEL's
  - Australia / New Zealand
  - EU **Indicative** Occupational Exposure Limit Values (**IOELV's**) (health-based) or **Binding** OELV's (**BOELV's**) (socio-economic) and Binding Biological Limit Values (**BLV**'s)

The bumpy ride to the draft OELs

1. **RHCS OELs compared with MHSA OELs and other (comparable) statutory OELs => “List C”**
2. **When List C was “calibrated” against ACGIH TLV’s – values ranged from 50x lower to 100x higher than ACGIH TLVs! (unexplained editorial errors in the original tables (HCS Regs & Mining Regs))**
3. **Decision was taken to standardise to a single reference point – ACGIH taken as a reasonable (health-based) reference => and go from there**

Draft OEL & BEI “General Rules”

“General Rules”:

- **OEL’s set at 2 x ACGIH TLV, but**
  - adjustment of selected OEL’s & other industry-motivated OEL’s (eg silica, dust, other) (handled as exceptions)
- **BEI’s set at the ACGIH BEI value (guidance values)**
- **No OEL / BEI below the ACGIH TLV / BEI**
- **No OEL for mixtures**
- **If no OEL is prescribed – implement reasonably practicable limit**

Thank you