

Committee of Experts on the Transport of Dangerous Goods and on the Globally Harmonized System of Classification and Labelling of Chemicals

**Sub-Committee of Experts on the Globally Harmonized
System of Classification and Labelling of Chemicals**

26 November 2013

Twenty-sixth session

Geneva, 4 – 6 December 2013

Item 4 (a) of the provisional agenda

**Implementation of the GHS: Development of a list of chemicals
classified in accordance with the GHS**

Assessing the potential development of a global list of classified chemicals

**Transmitted by the expert from the United States of America on behalf
of the informal correspondence group**

Purpose

1. The purpose of this document is to provide an update on the work undertaken by the informal correspondence group assessing the potential development of a global list of classified chemicals, an agenda for the group's meeting on 5 December 2013, and a thought starter for that meeting.

Background and update

2. During the 24th session, the Sub-Committee agreed to the guiding principles to govern the potential development of a global list of classified chemicals.
3. At the 25th session, the classification list correspondence group agreed that the next step forward would be to conduct a pilot classification exercise to investigate the resources needed by the Sub-Committee to create and maintain a list of agreed chemical classifications developed in accordance with the guiding principles.
4. The group agreed that the pilot classification exercise would take two tracks:
 - (a) perform hazard classifications from data available by the Sub-Committee of experts, OECD, or other internationally recognized expert bodies, and
 - (b) compare classifications given in existing lists to identify substances with similar or equal classification results. The OECD eChemPortal was thought to be a tool for identifying such substances.
5. Since that time, the work group has agreed on a form for nominating chemicals to be used in the pilot classification exercise, which is attached in Annex 1.
6. The work group has begun soliciting nominations for chemicals, and has received nominations from one country and one nongovernmental organization so far. Australia has proposed five chemicals: acrylamide, benzene, formaldehyde, methyl methacrylate, and styrene monomer. Its nomination form for these chemicals is attached in Annex 2. The Responsible Packaging Management Association of Southern Africa (RPMASA) has

proposed four chemicals: paraffin, methanol, methylene chloride and dipropylene glycol. Its nomination form for these chemicals is attached in Annex 3.

Agenda

7. Interested persons are invited to attend the meeting of the work group on 5 December 2013 in Room XV at 12:45. The proposed agenda is as follows:

- (a) Introductions and overview of meeting
- (b) Presentation by Joop de Knecht, OECD, on the pilot GHS classification project performed by the OECD Cooperative Chemicals Assessment Meeting.
- (c) Planning for Sub-Committee's pilot classification exercise (See thought starter):
 - (i) hazard classification of selected chemicals
 - (ii) comparison of existing lists
- (d) Discussion of Australia's and RPMASA's nominations.

8. Those wishing to participate by telephone may contact the chair for the call in information.

Thought starter

9. The following are some of the questions to be considered in planning the pilot classification exercise.

10. For the hazard classification exercise:

- (a) Who should perform the classification? GHS Sub-Committee delegates, experts at existing regulatory agencies, experts at internationally recognized focal points for technical work; or some combination of the above?
- (b) What opportunity for stakeholder input should be afforded?
- (c) How should the classification be finalized?
- (d) Should the classification exercise extend to all hazards of the chemical?
- (e) What measures should be tracked to determine the resources used in the exercise?

11. For the list comparison exercise:

- (a) Who should perform this work? GHS Sub-Committee delegates, experts at existing regulatory agencies, experts at internationally recognized focal points for technical work, or some combination of the above?
- (b) Which lists should be considered? How will the guiding principles be reflected in the results? Should we only use those lists that meet the guiding principles? Is the Secretariat's work in comparing the TDG and CLP classification lists an appropriate starting point for the pilot exercise?¹

¹ See INF.7 (19th session) and INF.10 (25th session).

- (c) How many chemicals should be identified in the pilot?
- (d) Should the classification exercise extend to all hazards of the chemical? Must a chemical be classified the same on all selected lists to satisfy this approach?
- (e) What opportunity for stakeholder input should be afforded?
- (f) What measures should be tracked to determine the resources used in the exercise?

Annex 1

Global list chemical nomination form

Sub-Committee of Experts on the GHS

Global list informal working group

Chemical name	
Identifier	
UN	
CAS	
Impurities	
HPV (Y/N)	
Pesticide (Y/N)	
Data availability: Data Rich/Data Poor	
Is this chemical already on a list (Y/N)	
List 1 (list name and date of classification)	
Is the data and rationale for each classification available (Y/N)	
	List 1 classification(s)
List 1 Physical hazards	
List 1 Health hazards	
List 1 Environ. hazards	
List 2 (list name and date of classification)	
Is the data and rationale for each classification available (Y/N)	

	List 2 classification(s)
List 2 Physical hazards	
List 2 Health hazards	
List 2 Environ. hazards	
List 3 (list name and date of classification)	
Is the data and rationale for each classification available (Y/N)	
	List 3 classification(s)
List 3 Physical hazards	
List 3 Health hazards	
List 3 Environ. Hazards	
Reason for selecting chemical	

Annex 2

Chemicals nominated by Australia

Acrylamide													
Chemical name	Acrylamide												
Identifier													
UN	2074, 3426												
CAS	79-06-1												
Impurities	<p>From European Union Risk Assessment Report: acrylamide 2002 http://echa.europa.eu/documents/10162/50218bf9-ba0f-4254-a0d9-d577a5504ca7</p> <p>Solid form: purity reported to be greater than 98% w/w. It may be supplied as a 30-60% w/w aqueous solution.</p> <p>The major impurities reported (w/w on basis of acrylamide solid):</p> <table> <tr> <td>3-hydroxypropionitrile</td> <td>< 0.5%</td> </tr> <tr> <td>3-hydroxypropionamide</td> <td>< 0.5%</td> </tr> <tr> <td>acrylic acid</td> <td>< 0.3%</td> </tr> <tr> <td>tris-nitrilopropionamide</td> <td>< 0.3%</td> </tr> <tr> <td>acrylonitrile</td> <td><0.1%</td> </tr> <tr> <td>water</td> <td><1%</td> </tr> </table>	3-hydroxypropionitrile	< 0.5%	3-hydroxypropionamide	< 0.5%	acrylic acid	< 0.3%	tris-nitrilopropionamide	< 0.3%	acrylonitrile	<0.1%	water	<1%
3-hydroxypropionitrile	< 0.5%												
3-hydroxypropionamide	< 0.5%												
acrylic acid	< 0.3%												
tris-nitrilopropionamide	< 0.3%												
acrylonitrile	<0.1%												
water	<1%												
HPV (Y/N)	Y												
Pesticide (Y/N)	N												
Data availability: Data Rich/Data Poor	Data Rich												
Is this chemical already on a list (Y/N)	Y												
List 1 (list name and date of classification)	<p>In HSIS* since commencement on 18 January 2005. Also see information on NICNAS PEC report below.</p> <p>* <i>in hazardous substances database of Hazardous Substances Information System (HSIS) http://hsis.safeworkaustralia.gov.au/</i></p>												
Is the data and rationale for each classification available (Y/N)	<p>Y</p> <p>NICNAS PEC report* No. 23 for acrylonitrile, May 2002</p> <p>*<i>National Industrial Chemicals Notification and Assessment Scheme (NICNAS) Priority Existing Chemical Assessment (PEC) report</i></p>												

Acrylamide	
	List 1: Classification(s)
List 1 Physical hazards	-----
List 1 Health hazards	Carc. Cat. 2; R45, May cause cancer Muta. Cat. 2; R46, May cause heritable genetic damage Repr. Cat. 3; R62 Possible risk of impaired fertility T; R25 Toxic if swallowed T; 48/25 Toxic: danger of serious damage to health by prolonged exposure if swallowed Xn; R21 Harmful in contact with skin Xn; R48/20/21 Harmful: danger of serious damage to health by prolonged exposure through inhalation and in contact with skin. Xi; R36/38 Irritating to eyes and skin. R43 May cause sensitisation by skin contact.
List 1 Environ. hazards	-----
List 2 (list name and date of classification)	Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code) 7th Edition, published 2007
Is the data and rationale for each classification available (Y/N)	Y
	List 2 classification(s)
List 2 Physical hazards	-----
List 2 Health hazards	Acrylamide solid UN No. 2074 Class 6.1 – toxic substances Acrylamide solution UN No. 3426 Class 6.1 – toxic substances
List 2 Environ. hazards	-----
List 3 (list name and date of classification)	-----
Is the data and rationale for each classification available (Y/N)	-----
Reason for selecting chemical	At the top of draft Priority List of Chemicals focussing on asthmagens and carcinogens. Asthma and cancer are priority disorders in the Australian Work Health and Safety Strategy 2012-2022. Very high production and commonly traded chemical. On the UN dangerous Goods List, the EU list* and HSIS. None are pesticides. * <i>Annex VI to Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Dangerous Substances</i>

Benzene	
Chemical Name	Benzene
Identifier	
UN	1144
CAS	71-43-2
Impurities	From European Risk Assessment Report: Benzene 2008 http://echa.europa.eu/documents/10162/be2a96a7-40f6-40d7-81e5-b8c3f948efc2 Purity > 99.9 % Impurities: non-aromatics 0.04 % toluene 0.015 % methylcyclohexane and toluene 0.02 %
HPV (Y/N)	Y
Pesticide (Y/N)	N
Data availability: Data Rich/Data Poor	Data Rich
Is this chemical already on a list (Y/N)	Y
List 1 (list name and date of classification)	HSIS, amended in HSIS 4 July 2008
Is the data and rationale for each classification available (Y/N)	N Adopted from EU list 29 th ATP*. Unknown if EU documentation is available. <i>*Commission Directive 2004/73/EEC of 29 April 2004 adapting to technical progress for 29th time Council Directive 67/548/EEC on the approximation of the laws, regulations and administrative provisions relating to the classification, packaging and labelling of dangerous substances</i>
	List 1 classification(s)
List 1 Physical hazards	F; R11 Highly flammable
List 1 Health hazards	Carc. Cat. 1; R45 May cause cancer Muta. Cat. 2; R46 May cause heritable genetic damage. T; R48/23/24/25 Toxic by inhalation, in contact with skin and if swallowed Xn; R65 Harmful: May cause lung damage if swallowed. Xi; R36/38 Irritating to eyes and skin.
List 1 Environ. hazards	-----

Benzene	
List 2 (list name and date of classification)	Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code) 7 th Edition, published 2007
Is the data and rationale for each classification available (Y/N)	Y
	List 2 classification(s)
List 2 Physical hazards	UN No. 1114 Class 3 – flammable liquids
List 2 Health hazards	-----
List 2 Environ. hazards	-----
Reason for selecting chemical	<p>At the top of draft Priority List of Chemicals focussing on asthmagens and carcinogens. Asthma and cancer are priority disorders in the Australian Work Health and Safety Strategy 2012-2022.</p> <p>Very high production and commonly traded chemical.</p> <p>On the UN dangerous Goods List, the EU list* and HSIS. None are pesticides.</p> <p><i>* Annex VI to Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Dangerous Substances</i></p>

Formaldehyde %	
Chemical name	Formaldehyde %
Identifier	
UN	1198, 2209
CAS	50-00-0
Impurities	<p>http://www.princeton.edu/~achaney/tmve/wiki100k/docs/Formaldehyde.html</p> <p>A typical commercial grade of formalin may contain 10-12% methanol in addition to various metallic impurities.</p> <p>http://echa.europa.eu/documents/10162/13626/clh_formaldehyde_en.pdf</p> <p>Purity of 49-49.3% solutions of formaldehyde:</p> <p>formic acid ca 0.3% w/w</p> <p>iron compounds ≤ 0.0001% w/w</p> <p>Traces of lead (0.1 mg/l), sulphur (<5 mg/l) and chlorine (<5 mg/l) also reported in some formaldehyde solutions used as test substances</p>
HPV (Y/N)	Y
Pesticide (Y/N)	N
Data availability: Data Rich/Data Poor	Data Rich
Is this chemical already on a list (Y/N)	Y
List 1 (list name and date of classification)	HSIS updated 24 May 2012. Also see information on NICNAS PEC report below.
Is the data and rationale for each classification available (Y/N)	Y NICNAS PEC report No. 28 for formaldehyde, November 2006. Note: in addition to recommendation from NICNAS PEC report, classification in HSIS includes risk phrase R37 from EU list.
	List 1 classification(s)
List 1 Physical hazards	-----
List 1 Health hazards	Carc. Cat. 2; R49 May cause cancer by inhalation T; R23/24/25 Toxic by inhalation, in contact with skin and if swallowed C; R34 Causes burns R43 May cause sensitisation by skin contact
List 1 Environ. hazards	-----

Formaldehyde %	
List 2 (list name and date of classification)	Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code) 7 th Edition, published 2007
Is the data and rationale for each classification available (Y/N)	Y
	List 2 classification(s)
List 2 Physical hazards	Formaldehyde solution, flammable UN No. 1198 Class 3 – flammable liquids Subsidiary risk: Class 8 – corrosive substances Formaldehyde solution with not less than 25% formaldehyde UN No. 2209 Class 8 – corrosive substances
List 2 Health hazards	-----
List 2 Environ. hazards	-----
Reason for selecting chemical	At the top of draft Priority List of Chemicals focussing on asthmagens and carcinogens. Asthma and cancer are priority disorders in the Australian Work Health and Safety Strategy 2012-2022. Very high production and commonly traded chemical. On the UN dangerous Goods List, the EU list* and HSIS. None are pesticides. <i>* Annex VI to Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Dangerous Substances</i>

Methyl methacrylate	
Chemical name	Methyl methacrylate
Identifier	
UN	1247
CAS	80-62-6
Impurities	<p>From European Union Risk Assessment Report: methyl methacrylate 2002 (EU report)</p> <p>http://echa.europa.eu/documents/10162/7c9a0eb6-9b7f-4fd6-846b-d480e8e0003d</p> <p>A typical commercial sample of methyl methacrylate has a specified purity of $\geq 99.8\%$ w/w and may contain the following impurities: water ($\leq 0.05\%$ w/w) and methacrylic acid ($\leq 0.005\%$ w/w).</p>
HPV (Y/N)	Y
Pesticide (Y/N)	N
Data availability: Data Rich/Data Poor	Data Rich OECD risk assessment
Is this chemical already on a list (Y/N)	Y
List 1 (list name and date of classification)	In HSIS since commencement on 18 January 2005
Is the data and rationale for each classification available (Y/N)	N Adopted from EU list. Unknown if EU has documentation available
	List 1 classification(s)
List 1 Physical hazards	F; R11 Highly flammable.
List 1 Health hazards	Xi; R37/38 Irritating to respiratory system and skin R43 May cause sensitisation by skin contact
List 1 Environ. hazards	-----
List 2 (list name and date of classification)	Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code) 7 th Edition, published 2007
Is the data and rationale for each classification available (Y/N)	Y

Methyl methacrylate	
	List 2 classification(s)
List 2 Physical hazards	Methyl methacrylate monomer, stabilized UN No. 1247 Class 3 - flammable liquids
List 2 Health hazards	-----
List 2 Environ. hazards	-----
Reason for selecting chemical	<p>At the top of draft Priority List of Chemicals focussing on asthmagens and carcinogens. Asthma and cancer are priority disorders in the Australian Work Health and Safety Strategy 2012-2022.</p> <p>Very high production and commonly traded chemical.</p> <p>On the UN dangerous Goods List, the EU list* and HSIS. None are pesticides.</p> <p><i>* Annex VI to Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Dangerous Substances</i></p>

Styrene monomer															
Chemical Name	Styrene monomer														
Identifier															
UN	2055														
CAS	100-42-5														
Impurities	<p>From European Union Risk Assessment Report on styrene: styrene Part 1 – environment 2002 http://echa.europa.eu/documents/10162/a05e9fc2-eaf7-448e-b9b2-d224d28173c0</p> <p>The impurities (where stated in IUCLID) as % w/w comprise some or all of the following:</p> <table> <tr> <td>ethylbenzene</td> <td><0.1%</td> </tr> <tr> <td>isopropylbenzene (cumene)</td> <td><0.1%</td> </tr> <tr> <td>2-phenylpropene</td> <td><0.1%</td> </tr> <tr> <td>water</td> <td><0.025%</td> </tr> <tr> <td>phenyl acetate</td> <td><0.02%</td> </tr> <tr> <td>p-xylene</td> <td><0.06%</td> </tr> <tr> <td>m-xylene</td> <td><0.001%</td> </tr> </table> <p>The impurities vary with the plant and production method</p>	ethylbenzene	<0.1%	isopropylbenzene (cumene)	<0.1%	2-phenylpropene	<0.1%	water	<0.025%	phenyl acetate	<0.02%	p-xylene	<0.06%	m-xylene	<0.001%
ethylbenzene	<0.1%														
isopropylbenzene (cumene)	<0.1%														
2-phenylpropene	<0.1%														
water	<0.025%														
phenyl acetate	<0.02%														
p-xylene	<0.06%														
m-xylene	<0.001%														
HPV (Y/N)	Y														
Pesticide (Y/N)	N														
Data availability: Data Rich/Data Poor	Data Rich														
Is this chemical already on a list (Y/N)	Y														
List 1 (list name and date of classification)	In HSIS since commencement on 18 January 2005														
Is the data and rationale for each classification available (Y/N)	N Adopted from EU list. Unknown if EU has documentation available														
	List 1 classification(s)														
List 1 Physical hazards	R10 Flammable.														
List 1 Health hazards	Xn; R20 Harmful by inhalation. Xi; R36/38 Irritating to eyes and skin.														
List 1 Environ. hazards	-----														
List 2 (list name and date of classification)	Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code) 7 th Edition, published 2007														
Is the data and rationale for each classification available (Y/N)	Y														

Styrene monomer	
	List 2 classification(s)
List 2 Physical hazards	Styrene monomer, stabilized UN No. 2055 Class 3 – flammable liquids
List 2 Health hazards	-----
List 2 Environ. hazards	-----
Reason for selecting chemical	<p>At the top of draft Priority List of Chemicals focussing on asthmagens and carcinogens. Asthma and cancer are priority disorders in the Australian Work Health and Safety Strategy 2012-2022.</p> <p>Very high production and commonly traded chemical.</p> <p>On the UN dangerous Goods List, the EU list* and HSIS. None are pesticides.</p> <p><i>* Annex VI to Regulation (EC) No 1272/2008 on Classification, Labelling and Packaging of Dangerous Substances</i></p>

Annex 3

**Chemicals nominated by the Responsible Packaging
Management Association of Southern Africa (RPMASA)**

Methanol	
Chemical Name	Methanol
Identifier	Methyl Alcohol, Wood alcohol Colourless flammable liquid
UN	1230, Class 3 & 6
CAS	67-56-1
Impurities	
HPV (Y/N)	
Pesticide (Y/N)	No
Data availability: Data Rich/Data Poor	
Is this chemical already on a list (Y/N)	UN TDG
List 1 (list name and date of classification)	
Is the data and rationale for each classification available (Y/N)	
	List 1 classification(s)
List 1 Physical hazards	
List 1 Health hazards	
List 1 Environ. hazards	
Reason for selecting chemical	Often drunk by mistake for ethanol in developing countries causing serious health problems and in some cases death Used as denaturant for ethanol, a solvent and antifreeze in pipelines and windscreen washers

Methylene chloride (DCM)	
Chemical name	Methylene chloride (DCM)
Identifier	
UN	1593
CAS	CAS 75-09-2
Impurities	
HPV (Y/N)	
Pesticide (Y/N)	No
Data availability: Data Rich/Data Poor	
Is this chemical already on a list (Y/N)	UN TDG Class 6.1
List 1 (list name and date of classification)	
Is the data and rationale for each classification available (Y/N)	
	List 1 classification(s)
List 1 Physical hazards	
List 1 Health hazards	
List 1 Environ. hazards	
Reason for selecting chemical	Used widely as a solvent in civil eng. for testing bitumen in place of toluene. Considered which is the lesser evil??

Dipropylene glycol	
Chemical name	Dipropylene glycol
Identifier	
UN	
CAS	CAS 25265-71-8
Impurities	
HPV (Y/N)	
Pesticide (Y/N)	No
Data availability: Data Rich/Data Poor	
Is this chemical already on a list (Y/N)	
List 1 (list name and date of classification)	
Is the data and rationale for each classification available (Y/N)	
	List 1 classification(s)
List 1 Physical hazards	
List 1 Health hazards	
List 1 Environ. hazards	
Reason for selecting chemical	Used as a plasticizer, an intermediate in industrial chemical reactions, as a polymerization initiator or monomer, and as a solvent. Its low toxicity and solvent properties make it an ideal additive for perfumes and skin and hair care products.

Paraffin (also known as kerosene)	
Chemical name	Paraffin (also known as kerosene)
Identifier	Colourless combustible hydrocarbon liquid
UN	1223 Class 3
CAS	
Impurities	
HPV (Y/N)	
Pesticide (Y/N)	No
Data availability: Data Rich/Data Poor	
Is this chemical already on a list (Y/N)	UN TDG
List 1 (list name and date of classification)	
Is the data and rationale for each classification available (Y/N)	
	List 1 classification(s)
List 1 Physical hazards	
List 1 Health hazards	
List 1 Environ. hazards	
Reason for selecting chemical	Widely sold loose & used in developing countries for cooking, light and heat producing noxious fumes as often contaminated. Many toddlers get poisoned in Africa and other developing countries from drinking paraffin from inappropriate containers when left along in hot weather