

Summary

Response to APEC VWG on GHS Implementation Rationale Questions

The APEC Virtual Working Group on Globally Harmonized System of Classification and Labelling developed a survey with *Implementation Rationale Questions*, and distributed it to member economies. Six economies responded. Their responses are summarized below. A key to acronyms used follows the table.

	U.S.	Australia	China	Japan	Russia	Chinese Taipei
1) Which building blocks does your economy implement?	U.S. has adopted GHS for workplace chemicals through OSHA—physical and health building blocks. EPA (environmental) and CPSC (consumer) have not yet adopted GHS.	Physical hazard building blocks and health hazard building blocks. However, these decisions are made at a state level and not all eight states/territories have adopted them (e.g., Western Australia has adopted health hazards but not physical hazards).	China implements the building blocks of physical hazard, health hazard and environmental hazard, but the physical hazard building blocks do not include desensitized explosives and pyrophoric or flammable gas/chemically unstable gas.	Japan provided a spreadsheet table, which is included as Attachment B below.	See Attachment B.	Chinese Taipei has adopted Physical Hazard and Health Hazard Building blocks for occupational chemicals in OSHA. Based on CNS 15030 (the Standards for Classification and labelling of chemicals), all building blocks are implemented. Toxic chemical substances under EPA's regulations have adopted environmental hazard building blocks as well.
2) Do different agencies/ministries in your economy implement different GHS building blocks? Are any hazards in addition to the GHS hazards implemented	OSHA has included several additional hazard categories: combustible dust, simple asphyxiants and HNOC. These were adopted to maintain pre-GHS protections that existed in the HCS.	Although there is a model WHS Regulation, not all state/territory jurisdictions adopt the model laws. Hazards addressed in addition to the GHS hazards include (1) AUH070 - Toxic by eye contact and (2) AUH071 - Corrosive to the	Different agencies/ministries in China implement the same GHS building blocks, and no new hazard categories are added.	No. No.	Ministry on Industry and Trade is responsible for implementation of all GHS building blocks under the technical regulation <i>On the Safety of Chemical Products</i> . According to GOST 31340-2013 (<i>Labelling of chemicals. General</i>)	The agencies in Chinese Taipei implement GHS according to CNS 15030, which aligns with 4th edition of GHS purple book.

<p>in your economy, e.g., combustible dust, etc?</p>		<p>respiratory tract.</p>			<p><i>requirements</i>), the manufacturer may include some additional information about the chemical’s hazard in labeling if it does not contradict the information about hazards. For example: <i>Contact with water liberates toxic gas.</i> <i>Contact with acids liberates toxic gas.</i> This is all voluntary for the manufacturer, including the wording of these phrases.</p> <p>After the technical regulation <i>On the Safety of Chemical Products</i> enters into force in June, 2021, there will be some additional health (accumulative chemical, EDC – endocrine disruptor) and environmental (soil toxic) hazards.</p>	
<p>3) What was the rationale and process for choosing these building blocks? (For example, was there stakeholder input collected prior to</p>	<p>OSHA had a standard in place—HCS. OSHA adopted parts of GHS that were within its jurisdiction and that would maintain same level of protection already in place. OSHA works closely with Health Canada. An example of how OSHA chose building</p>	<p>The GHS is implemented for all workplace hazardous chemicals under Australia’s WHS. Australia’s model WHS laws adopt all hazard sub-categories listed in the 3rd revised edition of the GHS (with a few exceptions).</p>	<p>In the process of choosing building blocks, China considers the opinions of government, experts, stakeholders, etc., and also refers to the building block adoption and classification results of the European Union, United States,</p>	<p>In 2012, Japan revised the JIS based on the GHS classification (JIS Z 7252) to reflect the 4th revision of GHS Purple Book and ‘Building Block approach’ determined in Japan. This JIS drafting committee consisted of stakeholders</p>	<p>All the building blocks were chosen for GHS alignment. Some additional types of hazard were included based on stakeholder input.</p>	<p>Chinese Taipei adopts all building blocks in CNS 15030, which is aligned with GHS 4th edition. The Standards are established for all regulations that might be involved with GHS, so CNS 15030 includes all the building blocks.</p>

<p>choosing the building blocks?) Do you align with current economy requirements, align with trading partners, align with APEC neighbors, align with EU CLP, took all GHS BB in certain GHS revision, etc.</p>	<p>blocks: Pre-GHS HCS covered beyond Category 3, but not all of Category 4. If OSHA were to adopt only three categories, it would have reduced protection with regard to acute toxicity. Adopting Category 4 expanded coverage, but chemicals meeting the definition of Category 4 were already covered under ANSI Z129, which many chemical manufacturers were following. It was also consistent with EU directives, and many U.S. manufacturers were already classifying under EU directives given the large amount of U.S. – EU trade. The U.S. did not adopt Category 5, as that would have led to inconsistency with the EU and with the national consensus standard (and would have resulted in excessive coverage or exposures of a magnitude not likely to be encountered in the occupational setting).</p>	<p>Manufacturers and importers from trading partners may include additional classification, as long as it does not contradict the mandatory GHS hazard information.</p>	<p>Japan and so on. China implements the building blocks of physical hazard, health hazard and environmental hazard, but the physical hazard building blocks do not include desensitized explosives and pyrophoric or flammable gas/chemically unstable gas.</p>	<p>(manufacturer, user, GHS expert, etc.). “No” on alignment.</p>		
<p>4) What was the rationale for different agencies/ministries in your economy</p>	<p>The rationale was based on agency jurisdiction: OSHA for workplace; EPA for environment (air, water, soil), CPSC for</p>	<p>There is a model WHS Regulation, but it is up to individual state/territory jurisdictions to adopt the model laws.</p>	<p>Different agencies/ministries in China implement the same GHS building blocks.</p>	<p>Not applicable.</p>	<p>Ministry on Industry and Trade is responsible for implementation of all GHS building blocks under the technical</p>	<p>The differences are due to different jurisdiction: the MOL (Regulations for the Labeling and Hazard Communication of</p>

<p>implementing different GHS building blocks? What guidance is provided to stakeholders about how to implement different GHS building blocks?</p>	<p>consumers and general public.</p>	<p>Guidance is provided by Safe Work Australia.</p>			<p>regulation “On the Safety of Chemical Products.”</p> <p>There is a set of national standards for implementation of GHS in Russia now (before the technical regulation “On the Safety of Chemical Products” will come into force in 2021):</p> <ul style="list-style-type: none"> • GOST 30333-2007 <i>Chemical production safety passport. General requirements.</i> • GOST 32419-2013 <i>Classification of chemicals. General requirements.</i> • GOST 32423-2013 <i>Classification of mixtures (health hazards).</i> • GOST 32424-2013 <i>Classification of chemicals for environmental hazards. General principles.</i> • GOST 32425-2013 <i>Classification of mixtures (environmental hazards).</i> • GOST 31340-2013 <i>Labeling of</i> 	<p>Hazardous Chemicals) and the EPA (Toxic Chemical Substances Labeling and Materials Safety Data Sheets Regulations) are responsible for workplace and environment, respectively. CNS 15030 serves as the standards for GHS in Chinese Taipei.</p>
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					<i>chemicals. General requirements.</i>	
5) What Mixture Classification Cut-Off Values does your economy utilize? Use table below to fill in values. Do different agencies/ministries in your economy implement different GHS Mixture Classification Cut-Off Values?	See Attachment A below.	See Attachment A below. Different agencies/ministries do not implement different GHS cut-off values.	See Attachment A below. Mixture classification cut-off values in China are the same as UN GHS, and the same for the different agencies/ministries in China.	See Attachment A below.	See Attachment A below.	See Attachment A below.
6) What was the rationale and process for setting these mixture cut-off values? For example: <ul style="list-style-type: none"> • Allow all GHS mixture cut-off options, • Lower GHS cutoffs are more protective • Align with EU CLP, APEC 	OSHA's main objective was to maintain current protections. OSHA's current standard included a 1% cut-off for mixtures (0.1% cut-off for carcinogens). In situations where the GHS provided a choice, OSHA selected the most protective cut-off. Selections also reflected stakeholder input.	Consultation with government and industry, and alignment with international agencies. Australia implements specific classification cut-off values and concentration limits for mixtures for the following hazard classes: <ul style="list-style-type: none"> • respiratory and skin sensitizers; • carcinogens; • reproductive toxicants; and • specific target organ toxicants, 	China set mixture cut-off values based on the UN GHS.	See answer to #3.	Align with current economy requirements, and allow all GHS mixture cut-off options.	Chinese Taipei allows all GHS mixture cut-off options, depending on agencies' jurisdiction purposes.

<p>neighbors, trading partners, etc?</p> <ul style="list-style-type: none"> Align with current economy requirements Stakeholder input 		<p>single and repeat exposures. These values and limits are prescribed in the WHS Regulations, with tables that replace the specified tables in the GHS.</p>				
<p>7) What was the rationale for different agencies/ministries in your economy implementing different GHS mixture cut-off values? What guidance is provided to stakeholders about how to implement different GHS mixture cut-off values?</p>	<p>OSHA is the only U.S. federal agency that has formally adopted the GHS. OSHA has recognized that other countries have databases that provide classification information and that this may be a good starting point for U.S. stakeholders. However, OSHA warns people that if they use classifications from other countries, they must ensure that they are correct under U.S. laws when they ship chemicals to/in the U.S.</p>	<p>Safe Work Australia provides guidance documents at: https://www.safeworkaustralia.gov.au/system/files/documents/1702/classification_hazardous_chemicals.pdf</p> <p>For some mixtures, it may not be possible to directly translate its hazardous substance classification into a GHS classification because of differences in cut-off concentrations used in the Approved Criteria and the GHS. Where the mixture itself has been tested, then the data on the mixture should be used to classify it. If there is no available test data or information on the mixture, then GHS classification should be determined based on ingredients and</p>	<p>Different agencies/ministries in China implement the same GHS mixture classification cut-off values.</p>	<p>Not applicable.</p>	<p>All the cut-off values are in the national standard GOST 32423-2013 <i>Classification of mixtures (health hazards)</i>.</p>	<p>Considering different cut-off values may be applied to different jurisdiction, CNS 15030 allows agencies to choose values based on their management purposes. Currently no regulations in Chinese Taipei specify mixture cut-off values. The classification implementation of mixtures is referred back to CNS 15030.</p>

	their percentages, using the criteria and decision logic described in the official GHS text for each hazard class.				
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ANSI = American National Standards Institute

APEC = Asia-Pacific Economic Cooperation

CPSC = Consumer Product Safety Commission (U.S.)

EPA = Environmental Protection Agency (U.S.)

GHS = Globally Harmonised System of Classification and Labelling

HCS = Hazard Communication Standard (U.S. OSHA)

HNOC = Hazard Not Otherwise Identified

JIS = Japanese Industrial Standard

OSHA = Occupational Safety and Health Administration (U.S.)

VWG = Virtual Working Group

WHS = Work Health and Safety laws (Australia)

Attachment A

Below is the information provided in answer to #5: What Mixture Classification Cut-Off Values does your economy utilize?

U.S.

Skin (all physical states) & Respirator (solid, liquid) Sensitizer			Respiratory Sensitizer (Gas)			Cancer		Reproductive		STOT-SE/STOT RE		
Cat 1	Cat 1A	Cat1B	Cat 1	Cat 1A	Cat 1B	Cat 1	Cat 2	Cat 1/ Lactation	Cat 2	Cat 1	Cat 2	Cat 3
0.1	0.1	1.0	0.1	0.1	0.2	0.1	0.1	0.1	0.1	1.0	1.0	20

Australia

Skin (all physical states) & Respirator (solid, liquid) Sensitizer			Respiratory Sensitizer (Gas)			Cancer		Reproductive		STOT-SE/STOT RE		
Cat 1	Cat 1A	Cat 1B	Cat 1	Cat 1A	Cat 1B	Cat 1	Cat 2	Cat 1/ Lactation	Cat 2	Cat 1	Cat 2	Cat 3
≥1.0	≥0.1	≥1.0	≥0.2	≥0.1	≥0.2	≥0.1	≥1.0	≥0.3	≥3.0	≥1<10%Cat 1=Cat 2 ≥10%Cat 1=Cat 1	≥10%Cat 2	≥20%

China

Skin (all physical states) & Respirator (solid, liquid) Sensitizer			Respiratory Sensitizer (Gas)			Cancer		Reproductive		STOT-SE/STOT RE		
Cat 1	Cat 1A	Cat1B	Cat 1	Cat 1A	Cat 1B	Cat 1	Cat 2	Cat 1/ Lactation	Cat 2	Cat 1	Cat 2	Cat 3
≥ 0.1%; ≥ 1.0%	≥ 0.1%	≥ 1.0%	≥ 0.1%; ≥ 0.2%	≥ 0.1%	≥ 0.2%	≥ 0.1 %	≥ 1.0%	≥ 0.1%; ≥ 0.3 %	≥ 0.1%; ≥ 3.0 %	≥ 1.0% ; ≥ 10 %	≥ 1.0%; ≥ 10 %	—

Japan

Skin (all physical states) & Respirator (solid, liquid) Sensitizer

Cat 1 \cong 1.0%

Cat 1A \cong 0.1%

Cat 1B \cong 1.0%

Respiratory Sensitizer (Gas)

Cat 1 \cong 0.2%

Cat 1A \cong 0.1%

Cat 1B \cong 0.2%

Cancer

Cat 1 \cong 0.1%

Cat 2 \cong 1.0%

Reproductive

Cat 1/ Lactation \cong 0.3%

Cat 2 \cong 3.0%

STOT-SE/STOT RE

Cat 1 \cong 10% (for Car 1); 1.0% \leq ingredient <10% (for Car 2)

Cat 2 \cong 10%

Cat 3 \cong 20%

Russia

Skin (all physical states) & Respirator (solid, liquid) Sensitizer			Respiratory Sensitizer (Gas)			Cancer		Reproductive		STOT-SE/STOT RE		
Cat 1	Cat 1A	Cat 1B	Cat 1	Cat 1A	Cat 1B	Cat 1	Cat 2	Cat 1/ Lactation	Cat 2	Cat 1	Cat 2	Cat 3
≥ 0.1	N/A	N/A	≥ 0.1	N/A	N/A	≥ 0.1	≥ 0.1	≥ 0.1	≥ 0.1	$\geq 1 < 10\%$ Cat 1 = Cat 2 $\geq 10\%$ Cat 1 = Cat 1	$\geq 10\%$ Cat 2	$\geq 20\%$

Chinese Taipei

Skin (all physical states) & Respirator (solid, liquid) Sensitizer			Respiratory Sensitizer (Gas)			Cancer		Reproductive		STOT-SE/STOT RE		
Cat 1	Cat 1A	Cat1B	Cat 1	Cat 1A	Cat 1B	Cat 1	Cat 2	Cat 1/ Lactation	Cat 2	Cat 1	Cat 2	Cat 3
≥ 0.1			≥ 0.1				≥ 0.1	0.1	0.1	≥ 1.0	≥ 1.0	
≥ 1.0	≥ 0.1	≥ 1.0	≥ 0.2	≥ 0.1	≥ 0.2	≥ 0.1	≥ 1.0	≥ 0.3	≥ 3.0	$\geq 1 < 10\%$ Cat 1 = Cat 2 $\geq 10\%$ Cat 1 = Cat 1	$\geq 10\%$ Cat 2	$\geq 20\%$

Attachment B

Building Block Information (Question #1): Which building blocks does your economy implement?

Japan

PHYSICAL HAZARDS

UN GHS Rev.4

	Classification criteria	JIS Z 7253
1 Explosives	Unstable explosives	○
	Div.1.1	○
	Div.1.2	○
	Div.1.3	○
	Div.1.4	○
	Div.1.5	○
	Div.1.6	○
2 Flammable gases	Cat. 1	○
	Cat. 2	○
	Pyrophoric gas	
	Cat. A	○
	Cat. B	○
3 Aerosols	Cat. 1	○
	Cat. 2	○
	Cat. 3	○
4 Oxidizing gases	Cat. 1	○
5 Gases under pressure	Compressed gas	○
	Liquefied gas	○
	Refrigerated liquefied gas	○
	Dissolved gas	○
6 Flammable liquids	Cat. 1	○
	Cat. 2	○
	Cat. 3	○
	Cat. 4	○
7 Flammable solids	Cat. 1	○
	Cat. 2	○
8 Self-reactive substances and mixtures	Type A	○
	Type B	○
	Type C & D	○
	Type E & F	○
	Type G	○
9 Pyrophoric liquids	Cat. 1	○
10 Pyrophoric solids	Cat. 1	○

11 Self-heating substances and mixtures	Cat. 1	○
	Cat. 2	○
12 Substances and mixtures which, in contact with water, emit flammable gases	Cat. 1	○
	Cat. 2	○
	Cat. 3	○
13 Oxidizing liquids	Cat. 1	○
	Cat. 2	○
	Cat. 3	○
14 Oxidizing solids	Cat. 1	○
	Cat. 2	○
	Cat. 3	○
15 Organic peroxides	Type A	○
	Type B	○
	Type C & D	○
	Type E & F	○
	Type G	○
16 Corrosive to metals	Cat. 1	○
17 Desensitized explosives	Cat. 1	
	Cat. 2	
	Cat. 3	
	Cat. 4	

HEALTH HAZARDS

	Classification criteria	JIS Z 7253
1 Acute toxicity	Cat. 1	○
	Cat. 2	○
	Cat. 3	○
	Cat. 4	○
	Cat. 5	X
2 Skin corrosion/irritation	Cat. 1	○
	Cat. 2	○
	Cat. 3	X
3 Serious eye damage/eye irritation	Cat. 1	○
	Cat. 2A	○
	Cat. 2B	○
4 Respiratory or skin sensitization	Cat. 1	○
	Cat. 1A	○
	Cat. 1B	○
5 Germ cell mutagenicity	Cat. 1A	○
	Cat. 1B	○
	Cat. 2	○
6 Carcinogenicity	Cat. 1A	○
	Cat. 1B	○

	Cat. 2	○
7 Reproductive toxicity	Cat. 1A	○
	Cat. 1B	○
	Cat. 2	○
	Add, Cat.	○
8 Specific target organ toxicity - Single exposure	Cat. 1	○
	Cat. 2	○
	Cat. 3	○
9 Specific target organ toxicity - Repeated exposure	Cat. 1	○
	Cat. 2	○
10 Aspiration hazard	Cat. 1	○
	Cat. 2	X

ENVIRONMENTAL HAZARDS

	Classification criteria	JIS Z 7253
Hazardous to the aquatic environment - Short-term (acute) aquatic hazard	Cat. 1	○
	Cat. 2	○
	Cat. 3	○
Hazardous to the aquatic environment - Long-term (chronic) aquatic hazard	Cat. 1	○
	Cat. 2	○
	Cat. 3	○
	Cat. 4	○
Hazardous to the ozone layer	Cat. 1	○

Russia

- Physical Hazard Building Blocks:
 - Explosives
 - Flammable gas/Chemically unstable gas
 - Aerosols
 - Oxidizing gas
 - Gases Under Pressure
 - Flammable liquid
 - Flammable solids
 - Self-reactive
 - Pyrophoric liquid
 - Pyrophoric solid
 - Self-Heating
 - Emit flammable gas on contact with water

- Oxidizing liquid,
- Oxidizing solid
- Organic peroxide,
- Corrosive to metal

➤ Health Hazard Building Blocks:

- Acute toxicity (O, D, I)
- Eye serious damage/irritation
- Skin corrosion/irritation
- Aspiration
- Sensitization
- GCM
- Cancer
- Reproductive
- STOT-SE
- STOT-RE

➤ Environmental Hazard Building Blocks:

- Acute Aquatic
- Chronic Aquatic
- Hazardous to Ozone Layer