Advanced Topics in GHS: GHS Labeling Considerations for Small Containers and Special Packaging in the U.S., EU, and China

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26 March 2014, SCHC Spring Meeting, SC, USA
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Global Harmonized System (GHS)

Classification

Label

SDS
Basic Elements of A Regular GHS Label

- Pictogram
- Product Identifier
- Signal Word
- Hazard Statements
- Precautionary Statements
- Supplier Identifier

**Product Identifier**

Acetylacetone, 99.5%
CAS# 123-54-6  EC# 264-150-0

**Signal Word**

Danger

Flammable liquid and vapour. Harmful if swallowed. Toxic in contact with skin. Toxic if inhaled.

Keep away from heat/sparks/open flames/hot surfaces. — No smoking.

Avoid breathing dust/fume/gas/mist/vapours/spray. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.

IF INHALED: Remove victim to fresh air and keep at rest in a position.

Call a POISON CENTER or doctor/physician.

Store in a well-ventilated place. Keep container tightly closed.

**Precautionary Statements**

**Supplier Identifier**

Chemical Inspection and Regulation Service Ltd
Singleton House, Laurence Street, Drogheda, Co. Louth, Ireland
Tel: +353 41 9806 916 | Fax: +353 41 9806 999
Email: service@cirs-reach.com
A Complex GHS Label

- Pictogram
- Product Identifier
- Signal Word
- Hazard Statements
- Precautionary Statements
- Supplier Identifier
- Logo + Multi-lingual
- Product Spec or Descriptions
- Instruction for uses
- etc

Acetylaceton, 99.55%
CAS# 123-54-6 EC# 264-150-0
Net weight xxxxx LOT xxxxxxx

Danger
Flammable liquid and vapour. Harmful if swallowed. Toxic in contact with skin. Toxic if inhaled.
Keep away from heat/sparks/open flames/hot surfaces. — No smoking.
Avoid breathing dust/fume/gas/mist/vapours/ spray. Use only outdoors or in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection. IF INHALED: Remove victim to fresh air and keep at rest in a position. Call a POISON CENTER or doctor/physician.
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Successful Factors Behind A Nice Fitting

Outer surface: Regular

Label: Regular
Our problems

2 Regular package:
   Complex label

3 Small package:
   Regular label

+ Multi-lingual or other info
How do we define ‘small’ or “regular” package?
How can we save some space on a GHS label?
How shall we label small containers to meet regulatory requirements?
The Concept of Small packages

- United States: Not specified
- Japan: Not specified
- European Union: ≤ 125ml
- Malaysia: ≤ 125ml
- China: ≤ 100ml
- South Korea: ≤ 100ml
• Where volume of hazardous substance or mixture is so low and there is not likelihood of harm to human health and/or environment – with competent authorities approval – full label may be omitted.

• Competent authorities may allow certain label elements to be omitted from the immediate package for certain hazard classes/categories where the volume of the substance or mixture is below a certain amount;

Ref:
http://www.unece.org/fileadmin/DAM/trans/danger/publi/ghs/GHS_presentations/English/hazcom_e.pdf
Regulatory Requirements in the U.S., EU and China

**HCS 2012**
- Labels must be legible and prominently displayed.
- No minimum size requirement for pictogram or label.
- No GHS element exemption for small packages.

**EU CLP**
- For package $\leq 3\text{L}$, Regular Label; Label Size $\geq 52\times 74\text{mm}$; Pictogram $\geq 10\times 10\text{mm}$;
  - Certain elements can be omitted for $\leq 125\text{mL}$

**GB 15258-2009**
- For package $0.1\sim 3\text{L}$, Regular label; Label Size $\geq 50\times 75\text{mm}$; Visible from smoke;
  - Simplified label for $\leq 100\text{mL}$
1. The use of fold-out labels, tie-on tags or outer packaging;
2. Omission of certain GHS elements for small packages (≤ 125mL)

**Preference : 1 > 2**

**Difference :**
1. Full GHS elements; Change of label form.
2. Incomplete GHS elements.

EU: GHS Labelling of Small packages

1. The use of **fold-out labels**, **tie-on tags** or **outer packaging**;
2. Omission of certain GHS elements for small packages (≤ 125mL)

**Preference**: 1 > 2

**Difference**:
1. Full GHS elements; Change of label form.
2. Incomplete GHS elements.

EU Example 1: Fold-out label
EU Example 2: Tie-on tag

Acetone, 99.5%
CAS# 123-54-4  EC# 204-153-0
Net weight XXXX  LOT XXXXXX

Danger:
Flammable liquid and vapour. Harmful if swallowed. Toxic in contact with skin. Toxic if inhaled. Keep away from heat/sparks/open flames/hot surfaces. — No smoking. Avoid breathing dust/ fume/ gas/vapour/spray. Use only outdoors or in a well-ventilated area. Wear protective gloves/ protective clothing/ eye protection/ face protection. If INHALED: Remove victim to fresh air and keep at rest in a position. Call a POISON CENTER or doctor/physician. Store in a well-ventilated place. Keep container tightly closed.

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EU Example 3: The Use of Outer Packaging

Inner/Intermediate Packages
- Hazard pictograms,
- Product identifier(s)
- Supplier identifier

Outer packages
- Full elements for every product inside.

Ref: UN/SCEGHS/23/INF.15 – cefic example on labelling of small packages
EU: GHS Labelling of Small packages

1. The use of fold-out labels, tie-on tags or outer packaging;
2. Omission of certain GHS elements for small packages (≤ 125mL)

Preference: 1 > 2

Difference:
1. Full GHS elements; Change of label form.
2. Incomplete GHS elements.

## Example 4: Omission of Certain GHS elements

<table>
<thead>
<tr>
<th>Hazard Category</th>
<th>Elements that can be omitted</th>
</tr>
</thead>
<tbody>
<tr>
<td>≤125ml Flammable liquids category 2 or 3</td>
<td>Hazard and precautionary statements</td>
</tr>
<tr>
<td>Flammable gases cate. 2</td>
<td>Precautionary statements</td>
</tr>
<tr>
<td>Corrosive to metals</td>
<td>Pictogram, signal word, p &amp; h statements.</td>
</tr>
</tbody>
</table>

Example 4: Omission of Certain GHS elements

N-hexane, 25ml

Other considerations for EU: 6 p-statement rules & grouping of p-phrases to save space

3.1. Acute Toxicity - Oral

<table>
<thead>
<tr>
<th>Hazard category</th>
<th>Signal word</th>
<th>Hazard statement</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Danger</td>
<td>H300  Fatal if swallowed</td>
</tr>
<tr>
<td>2</td>
<td>Danger</td>
<td>H300  Fatal if swallowed</td>
</tr>
<tr>
<td>3</td>
<td>Danger</td>
<td>H301  Toxic if swallowed</td>
</tr>
</tbody>
</table>

EU 6 p-statement rules: No more than 6 p-statements on a CLP label

<table>
<thead>
<tr>
<th>Precautionary Statements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Prevention</td>
</tr>
<tr>
<td>P264 Wash ... thoroughly after handling. Manufacturer / supplier to specify parts of the body to be washed after handling.</td>
</tr>
<tr>
<td>High recommended for the general public</td>
</tr>
<tr>
<td>P270 Do not eat, drink or smoke when using this product.</td>
</tr>
<tr>
<td>Highly recommended for the general public for categories 1 and 2</td>
</tr>
<tr>
<td>Recommended for the general public</td>
</tr>
</tbody>
</table>

Highly recommended
Recommended
Optional
Not to be used

www.cirs-group.com
China: Simplified GHS Label for ≤100ml

- **Regular GHS Label**

  - **Chemical Name:** A group: 40%; B group: 60%
  - **Danger Symbol:**
    - Gas: Use a gas mask. Inhale rapidly, seek medical attention immediately.
    - Fire: Keep away from heat, sparks, and flames. Use a Class B fire extinguisher.

- **Simplified GHS Label**

  - **Chemical Name:**
  - **Danger Symbol:**
    - Has a certain degree of flammability, incomparably more than other classes.

  - **Hazard Statement only**
  - **24h Emergency Telephone No.:**

  - **Refer to SDSs**

  - **Ref: GB 15258-2009**
Questions: Multiple ampoules sold in a box?
USA: What Works?

- Use of fold-out labels, tags or outer packages
- Omitting certain elements (i.e., simplified label)
- 6 p-statement rules
- Grouping of precautionary statements

Labels must be legible and prominently displayed.; No minimum size requirement for pictogram or label; No GHS element exemption for small packages.

HCS 2012
USA Example 1: The Use of Outer Packages

Inner/Intermediate Packages

- Product identifier
- Appropriate pictograms
- Manufacturer's name and phone number
- Signal word
- A statement indicating the full label information is on the outside package.

USA Example 2: The Use of Grouping to Save Space

- Keep away from heat/sparks/open flame/hot surfaces. - No Smoking;
- Keep/Store away from clothing/combustible materials;
- Keep only in original package

**Combined into**

Keep in original package and away from heat, open flames, combustible materials and hot surfaces. - No Smoking.

https://www.osha.gov/Publications/OSHA3636.pdf
China: GHS Labelling of A Small Ampoule(5mL)

Questions: Multiple ampoules sold in a box?

Inner/Intermediate Packages

- Hazard pictograms,
- Product identifier(s)
- Supplier identifier

Outer packages

- Full elements for every product inside.
The Use of Outer Package: Is It Really Working?

Tested for

And It Works.

Note: No detailed guidelines in China & Korea.
1) Challenges with GHS labelling for small packages
   - Basic elements of a GHS label;
   - Regulatory requirements on GHS labels in USA, EU and China.

2) Three ways of GHS labelling for small and special packages
   - The use of fold-out labels, tie-on tags or outer packages;
   - Grouping of phrases to save space;
   - Omitting certain GHS elements (not working for every country);
   - Examples given for USA, EU and China.

3) Other considerations not covered;
   - Cost issues for different types of labelling and packages;
   - Classifications/building blocks;
   - Other regulations: consumer product laws, TDG etc.
Key References

**UN GHS**
http://www.unece.org/fileadmin/DAM/trans/danger/publi/ghs/GHS_presentations/English/hazcom_e.pdf
http://www.unece.org/trans/danger/publi/ghs/ghs_welcome_e.html

**USA**
https://www.osha.gov/Publications/OSHA3636.pdf

**EU**

**China**
Special thanks to Dr Michele R. Sullivan for her help with this presentation.
Thank You!

谢谢！