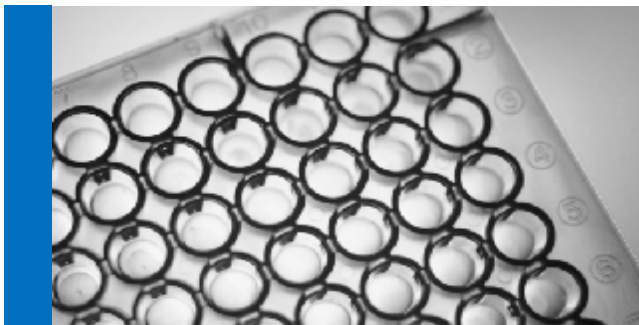




Advanced Topics in GHS: GHS Labeling Considerations for Small Containers and Special Packaging in the U.S., EU, and China



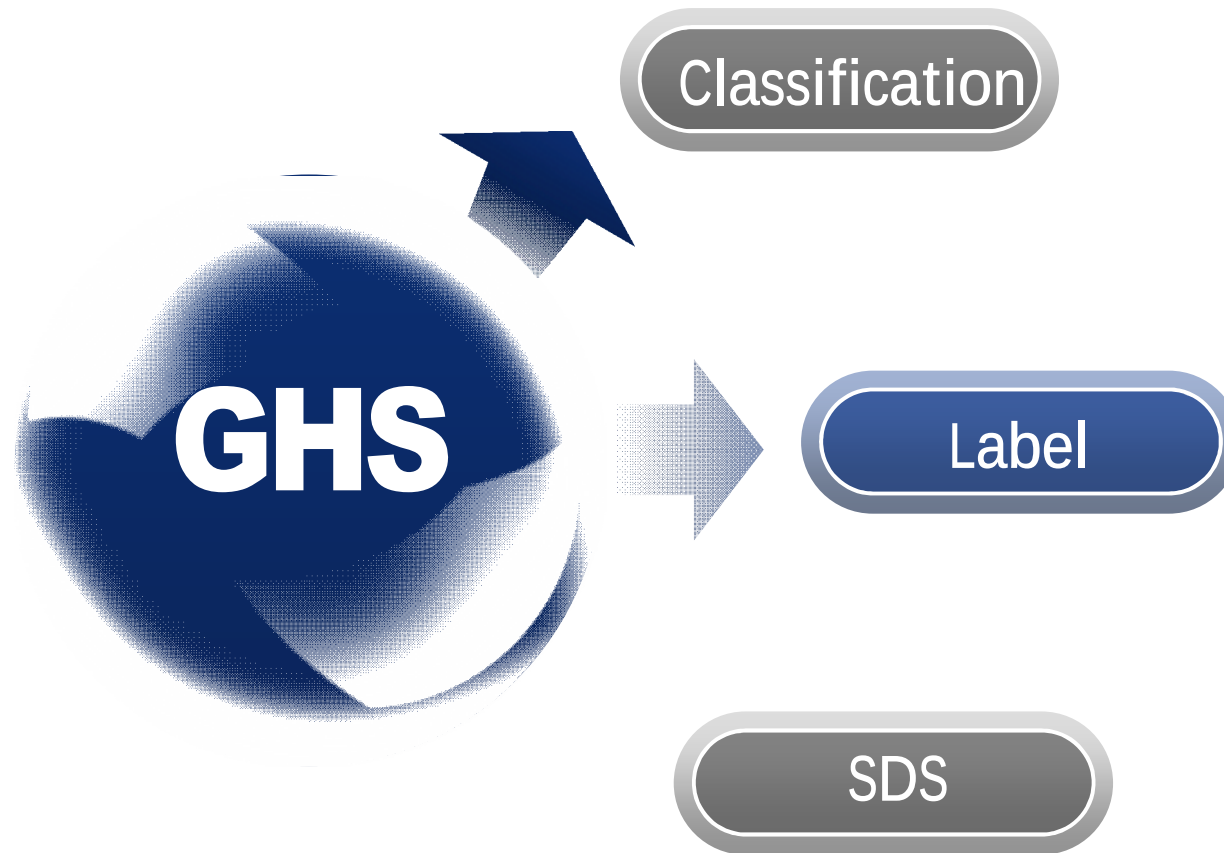
*Enabling Chemical Compliance
for A Safer World*

Yunbo Shi, Principal Consultant, CIRS

26 March 2014, SCHC Spring Meeting, SC, USA

Email: yunbo.shi@cirs-reach.com

Global Harmonized System(GHS)



Basic Elements of A Regular GHS Label

Pictogram



Product Identifier

Acetylacetone, 99.55%
CAS# 123-54-6 EC# 264-150-0
Net weight xxxx LOT xxxxxxxx

Danger

Signal Word

Hazard Statements

Precautionary Statements

Supplier Identifier

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.

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



Acetylacetone, 99.55%
CAS# 123-54-6 EC# 264-150-0
Net weight xxxx LOT xxxxxxxx

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.

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Tel : +353 41 9806 916 | Fax : +353 41 9806 999
Email: service@cirs-reach.com

Signal Word

Hazard Statements

Precautionary Statements

Supplier Identifier

+

Logo + Multi-lingual

+

Product Spec or Descriptions

+

Instruction for uses

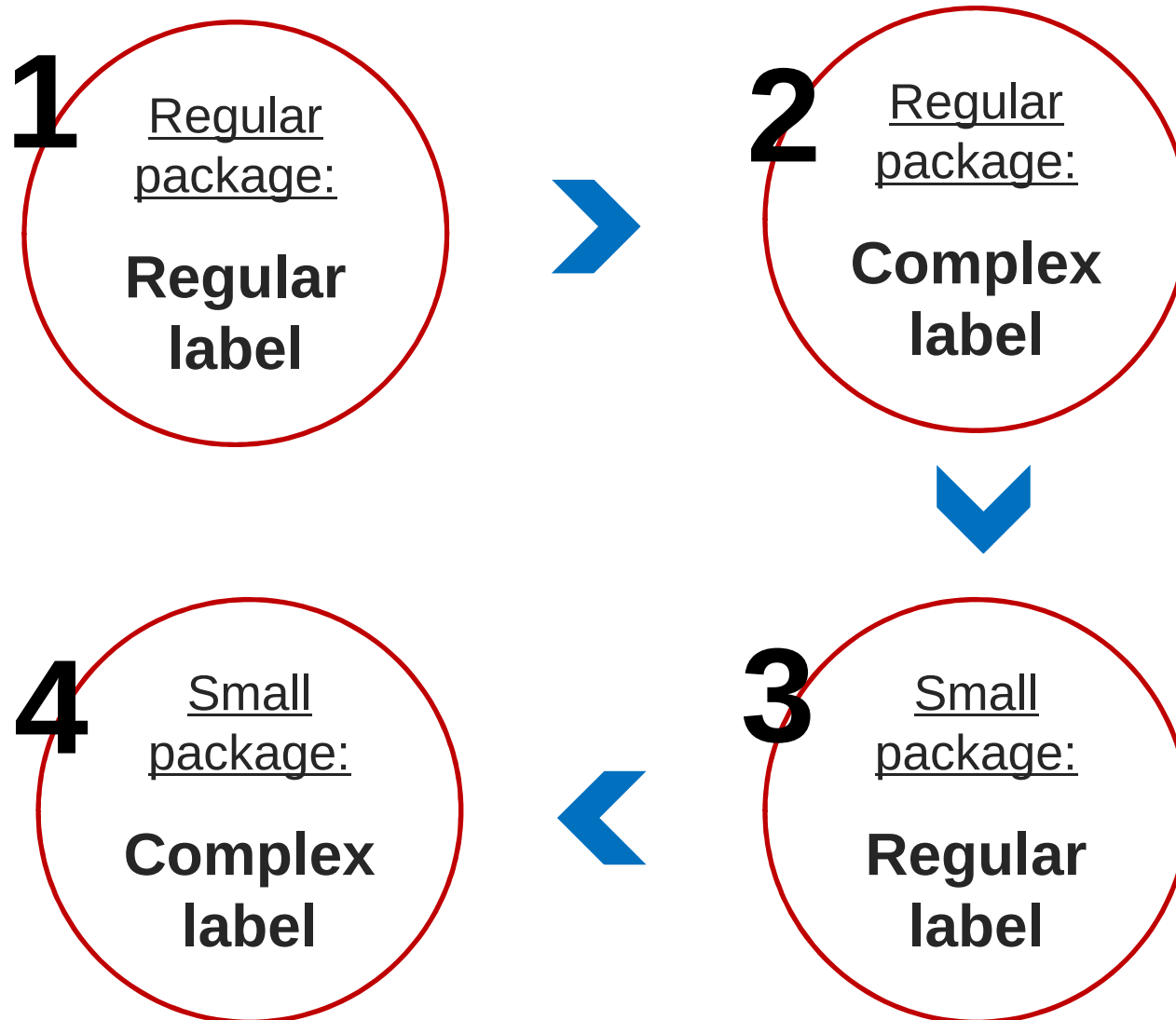
etc



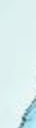
Regular

Regular

Increased Difficulty



Regular
package:



+



**Multi-lingual
or other info**

Small
package:

+



The Concept of Small packages



Not specified



$\leq 125\text{ml}$



$\leq 100\text{ml}$

- 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



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

HCS 2012



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 $\leq 125\text{mL}$

EU CLP



For package $0.1 \sim 3\text{L}$, Regular label; Label Size $\geq 50 \times 75\text{mm}$;
Visible from smoke;

Simplified label for $\leq 100\text{mL}$

GB 15258-2009

- Preference : $1 > 2$

Difference :

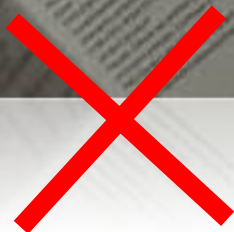
1. Full GHS elements; Change of label form.
2. Incomplete GHS elements.

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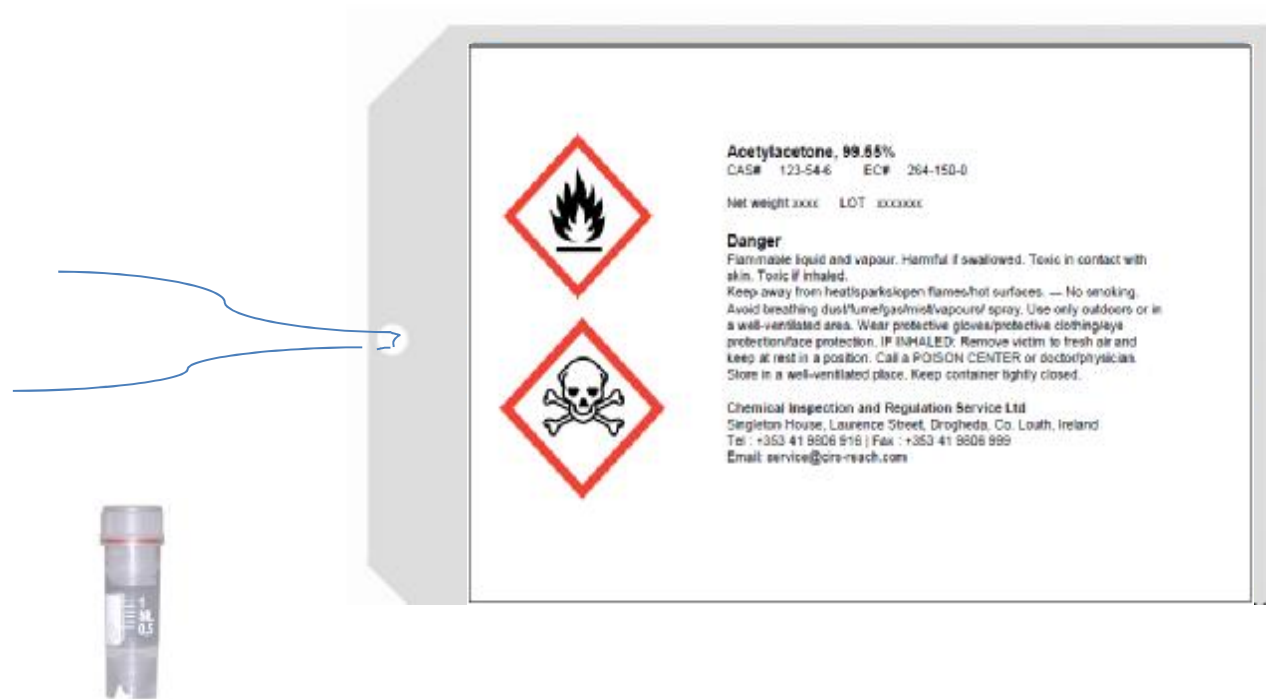
- Preference : $1 > 2$

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

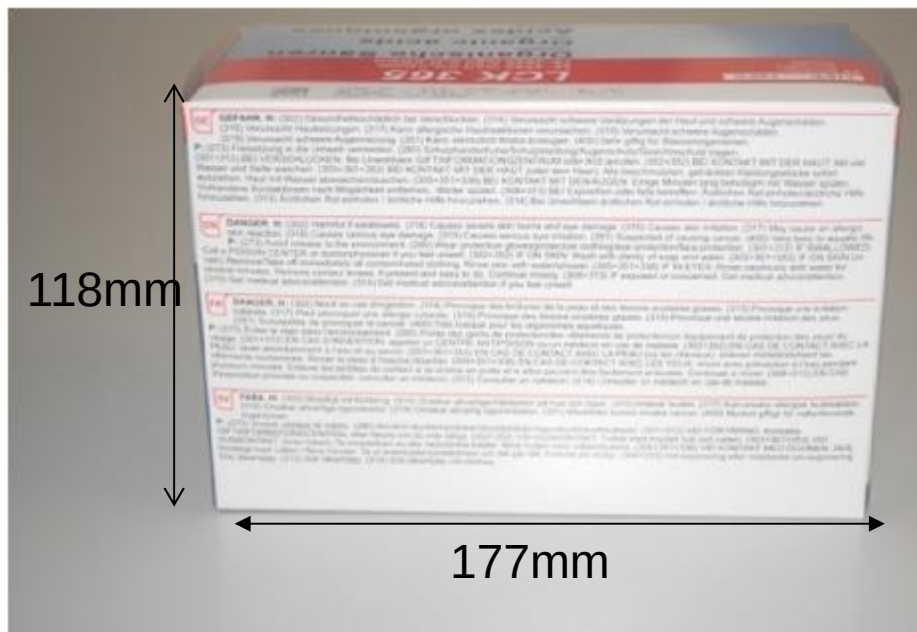
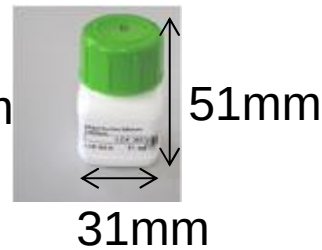
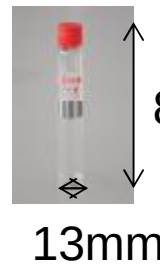
www.cirs-group.com



EU Example 2: Tie-on tag



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.

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($\leq 125\text{mL}$)

Preference : 1 > 2

PREFERENCE : 1 > 2

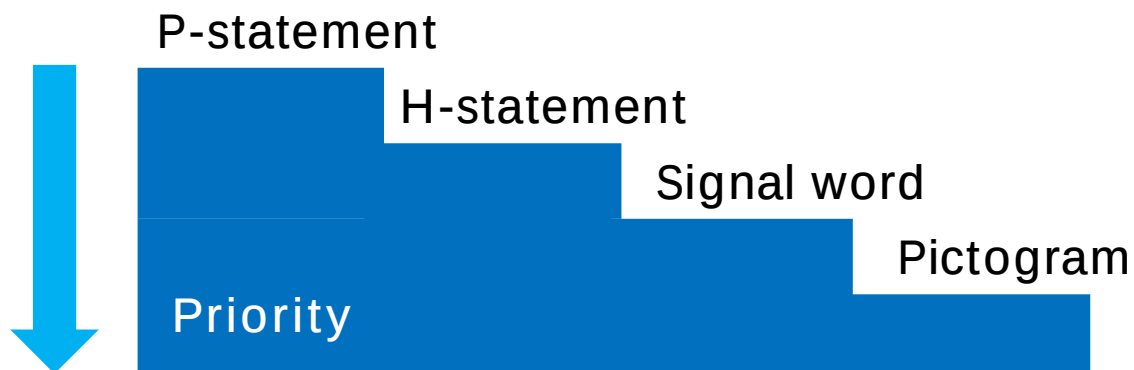
Difference :

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

Ref: http://echa.europa.eu/documents/10162/13562/clp_labelling_en.pdf

Example 4: Omission of Certain GHS elements

≤125ml	Hazard Category	Elements that can be omitted
	Flammable liquids category 2 or 3	Hazard and precautionary statements
	Flammable gases cate. 2	Precautionary statements
	Corrosive to metals	Pictogram, signal word, p & h statements.



Example 4: Omission of Certain GHS elements

N-hexane , 25ml



1000000025	K12345678 808	25 ml	Exp. date: 31.12.11
pro analysi ACS n-Hexan för analys n-heksaani	Lot		
Index-No: 601-037-00-0 Company S.A., City, 80766 EU, www.company.com Tel. +41(0)1234 56-7890			Fara. Kan vara dödligt vid förtäring om det kommer ner i luftvägarna. Misstänks kunna skada fertiliteten. Vid FÖRTÄRING: Kontakta genast GIFT-INFORMATIONSCENTRAL eller läkare. Framkalla inte kräkning. Vaara. Voi olla tappavaa nieltynä ja joutuessaan hengitysteihin. Epäilään heikentävän hedelmällisyyttä. JOS KEMIKAALIA ON NIELTY: Ota välittömästi yhteys MYRKYTYSTI-ETOKESKUKSEEN tai lääkäriin. Ei saa oksennuttaa.

Complete pictograms

Certain h and p statements omitted

Ref: http://echa.europa.eu/documents/10162/13562/clp_labelling_en.pdf

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

3.1. Acute Toxicity - Oral

Hazard category	Signal word	Hazard statement
1	Danger	H300 Fatal if swallowed
2	Danger	H300 Fatal if swallowed
3	Danger	H301 Toxic if swallowed

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

Precautionary Statements			
Prevention	Response	Storage	Disposal
P264 Wash ... thoroughly after handling. Manufacturer / supplier to specify parts of the body to be washed after handling. ★ Highly recommended for the general public ★ Recommended for industrial / professional users unless P280 has already been assigned P270 Do not eat, drink or smoke when using this product. ★ Highly recommended for the general public for categories 1 and 2 ★ Recommended for the general public	P301 + P310 IF SWALLOWED: Immediately call a POISON Center or doctor/physician. ★ Highly recommended P321 Specific treatment (see ... on this label). ... Reference to supplemental first aid instruction. - if immediate administration of antidote is required. ★ Highly recommended only in exceptional cases where specific treatment, including the administration of an antidote, is urgently required P330	P405 Store locked up. ★ Highly recommended for the general public ★ Optional for industrial professional users, unless other considerations are necessary	P501 Dispose of contents/container

Highly recommended

Recommended

Optional

Not to be used

China: Simplified GHS Label for ≤100ml

- Regular GHS Label

化学品名称 A组分: 40%; B组分: 60%
危险  极易燃液体和蒸气, 食入致死, 对水生生物毒性非常大 【预防措施】: 远离热源、火花、明火、热表面。使用不产生火花的工具作业。 保持容器密闭。 采取防止静电措施, 容器和接收设备接地、连接。 使用防爆电器、通风、照明及其他设备。 戴防护手套、防护眼镜、防护面罩。 操作后彻底清洗身体接触部位。 作业场所不得进食、饮水或吸烟。 禁止排入环境。 【事故响应】: 如皮肤(或头发)接触: 立即脱掉所有被污染的衣服。用水冲洗皮肤、淋浴。 食入: 催吐, 立即就医。 收集泄漏物。 火灾时, 使用干粉、泡沫、二氧化碳灭火。 【安全储存】: 在阴凉、通风良好处储存。 上锁保管。 【废弃处置】: 本品或其容器采用焚烧法处置。 请参阅化学品安全技术说明书 供应商: XXXXXXXXXXXXXXXXXXXX 电话: XXXXXX 地址: XXXXXXXXXXXXXXXXXXXX 传真: XXXXXX 化学事故应急咨询电话: XXXXXX

- Simplified GHS Label

化学品名称
危险  极易燃液体和蒸气, 食入致死, 对水生生物毒性非常大 请参阅化学品安全技术说明书(SDS) 供应商: XXXXXXXXXXXXXXXX 电话: XXXXXXXXXXXXXXXX 化学事故应急咨询电话: XXXXXXXXXXXXXXXX

Hazard
statement only

Refer to SDSs

24h emergency
telephone no.

Ref: GB 15258-2009

China: GHS Labelling of A Small Ampoule(5mL)



Questions: Multiple ampoules sold in a box?

USA: What Works?



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

HCS 2012

Use of fold-out labels, tags or outer packages

Omitting certain elements (i.e., simplified label)



6 p-statement rules



Grouping of precautionary statements

USA Example 1: The Use of Outer Packages



88mm
13mm



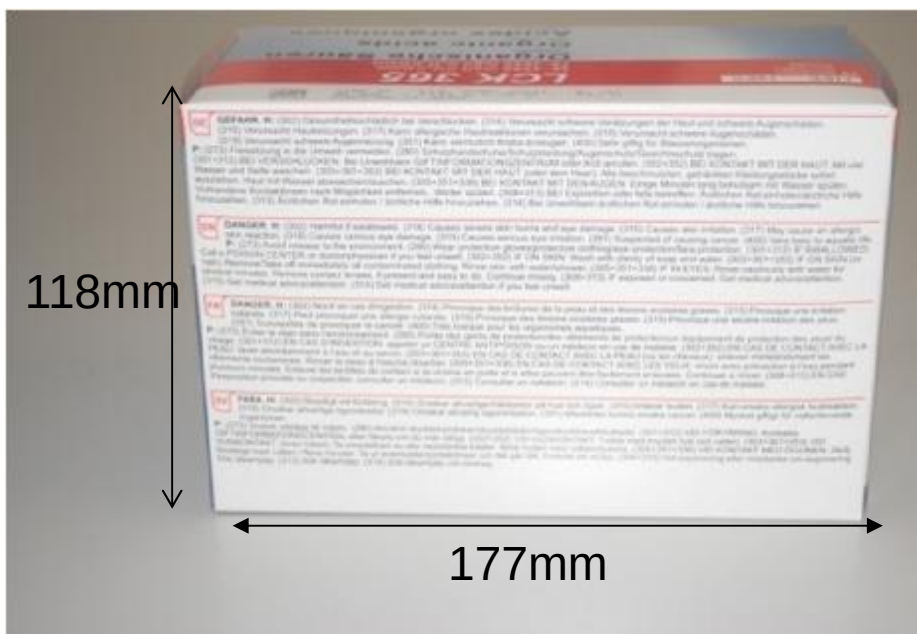
51mm
31mm



97mm
31mm



88 mm



118mm

177mm

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.

https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=INTERPRETATIONS&p_id=28805 (Interpretation of HCS for NIST questions).

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.



Note: No detailed guidelines in China & Korea.

2) Three ways of GHS labelling for small and special packages

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

- n Cost issues for different types of labelling and packages;**
- n Classifications/building blocks;**
- n 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/pls/oshaweb/owadisp.show_document?p_table=INTERPRETATIONS&p_id=28805

<https://www.osha.gov/Publications/OSHA3636.pdf>

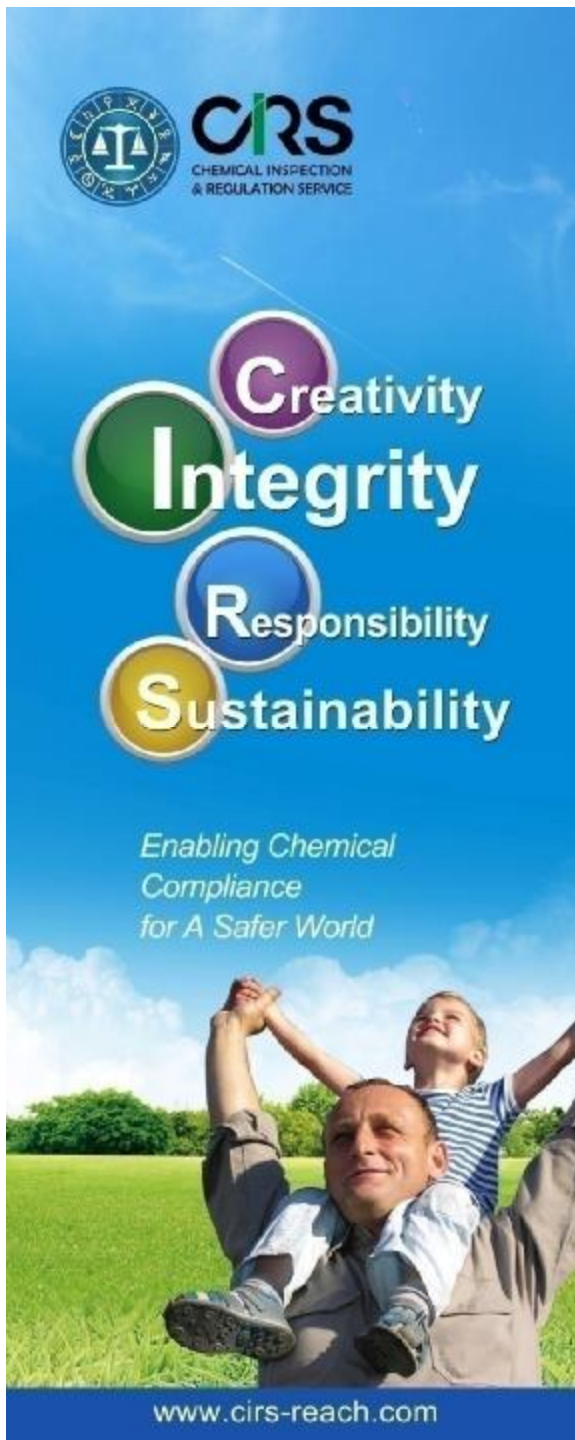
EU

http://echa.europa.eu/documents/10162/13562/clp_labelling_en.pdf

China

http://www.cirs-reach.com/China_Chemical_Regulation/GB_15258_2009_General_Rules_for_Preparation_of_Precautionary_Label%20for_Chemicals.html

Special thanks to Dr Michele R. Sullivan
for her help with this presentation.



Thank You!

谢谢！