
# Getting a Grip on Chemical Inventory: The New World of GHS

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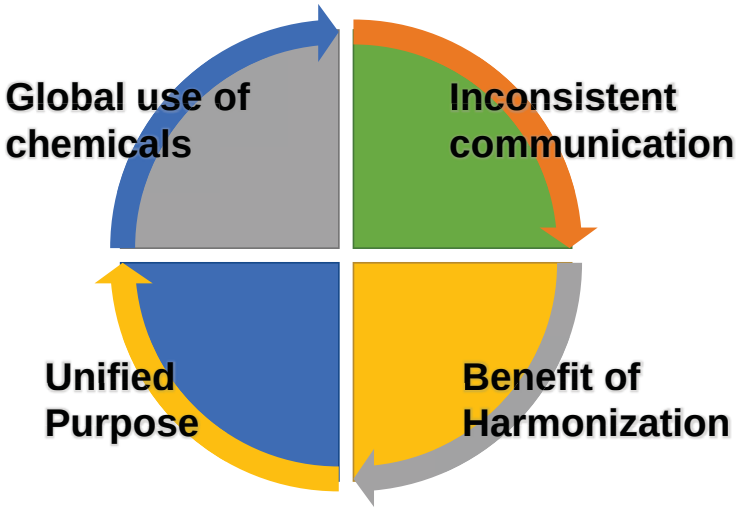
## GHS: The Big Picture

# Why Was GHS Adopted?

## Regulatory Scope Before GHS

## The Pre-GHS Landscape



# The Pre-GHS Landscape

**Acetone: one chemical, many ways to communicate the hazards**

**OSHA 1994**

**Section 2. Hazards Identification**

| | | |
|---|---|---|
| **Physical state** | : | Liquid. |
| **Odor** | : | Pungent. |
| **OSHA/HCS status** | : | This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200). |
| **Emergency overview** | : | DANGER! EXTREMELY FLAMMABLE LIQUID AND VAPOR. HARMFUL IF INHALED OR SWALLOWED. CAUSES RESPIRATORY TRACT, EYE AND SKIN IRRITATION. CAUSES DAMAGE TO THE FOLLOWING ORGANS: RESPIRATORY TRACT, SKIN, CENTRAL NERVOUS SYSTEM, EYE, LENS OR CORNEA. VAPOR MAY CAUSE FLASH FIRE. Do not ingest. Avoid contact with skin and clothing. Avoid breathing vapor or mist. Keep away from heat, sparks and flame. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling. |
| **Routes of entry** | : | Dermal contact. Eye contact. Inhalation. Ingestion. |
| **Potential acute health effects** | | |
| **Eyes** | : | Irritating to eyes. |
| **Skin** | : | Irritating to skin. |
| **Inhalation** | : | Toxic by inhalation. Irritating to respiratory system. |
| **Ingestion** | : | Toxic if swallowed. |
| **Carcinogenic effects** | : | No known significant effects or critical hazards. |
| **Mutagenic effects** | : | No known significant effects or critical hazards. |
| **Teratogenicity / Reproductive toxicity** | : | No known significant effects or critical hazards. |
| **Medical conditions aggravated by over-exposure** | : | Repeated skin exposure can produce local skin destruction or dermatitis. Repeated or prolonged exposure to the substance can produce lung damage. Repeated or prolonged contact with spray or mist may produce chronic eye irritation and severe skin irritation. Repeated or prolonged exposure to the substance can produce target organs damage. |

**WHMIS 1988**

**WHMIS Classification / Symbol:**

B-2: Flammable Liquid

D-2B: Toxic (eye irritant)

**EU DSD**

**EU regulations**

**Hazard symbol/symbols** :

**Risk phrases** : R11- Highly flammable.
R36- Irritating to eyes.

**Safety phrases** : S2- Keep out of the reach of children.
S9- Keep container in a well-ventilated place.
S16- Keep away from sources of ignition - No smoking.
S26- In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.

# What Is GHS?

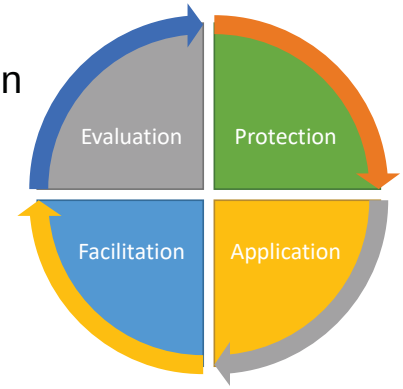
## The Plan for Transition

# What GHS Is…

**The Basics**

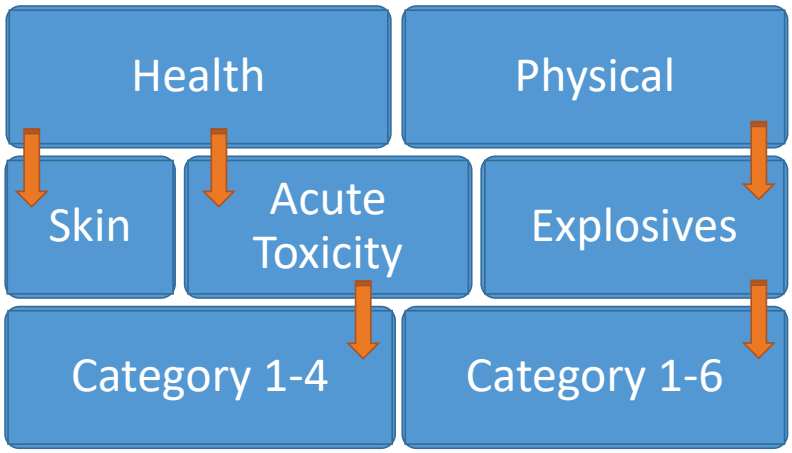
- Developed by the United Nations
- Based on existing systems (US, EU, Canada and UN TDG)
- First edition published 2003
- Includes classification criteria and hazard communication elements
- Many anticipated benefits

GHS
The Globally Harmonized System of Classification and Labeling of Chemicals




# Building Blocks of GHS

Hazard Classes and Categories are the building blocks of GHS and each competent agency adopts the blocks that are applicable to them.

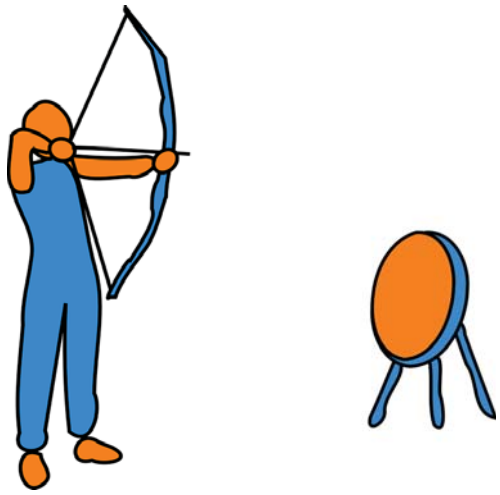


# What GHS Is Not…

**Mandatory**

**Complete**

**Static**



## What Happened?

### U.S. and Global Adoption and Disharmony

# What Happened: GHS Adoption

## U.S. Adoption – OSHA 2012

### Existing Elements

- Most hazards retained
- MSDS becomes SDS

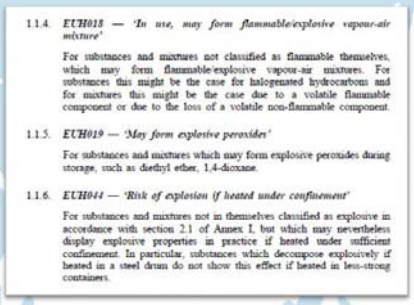
### New Elements

- More specific SDS & label content required
- Prescribed HazCom elements
- New Hazard classes
- Some Non-GHS elements

# What Happened: GHS Adoption

## Global Disharmony: Communication

WHMIS 2015 Pictograms



1.1.4. *EUH018 — 'In use, may form flammable/explosive vapour-air mixture'*

For substances and mixtures not classified as flammable themselves, which may form flammable/explosive vapour-air mixtures. For substances this might be the case for halogenated hydrocarbons and for mixtures this might be the case due to a volatile flammable component or due to the loss of a volatile non-flammable component.

1.1.5. *EUH019 — 'May form explosive peroxides'*

For substances and mixtures which may form explosive peroxides during storage, such as diethyl ether, 1,4-dioxane.

1.1.6. *EUH044 — 'Risk of explosion if heated under confinement'*

For substances and mixtures not in themselves classified as explosive in accordance with section 2.1 of Annex I, but which may nevertheless display explosive properties in practice if heated under sufficient confinement. In particular, substances which decompose explosively if heated in a steel drum do not show this effect if heated in less-strong containers.

EU CLP – EUH Phrases

# What Happened: GHS Adoption

## Global Disharmony: Criteria

**OSHA 2012**

| Ingredients classified as: | Cut-off values/concentration limits triggering classification of a mixture as: Category 1 reproductive toxicant | Category 2 reproductive toxicant | Additional category for effects on or via lactation |
|---|---|---|---|
| Category 1 reproductive toxicant | ≥0.1% | | |
| Category 2 reproductive toxicant | | ≥ 0.1 % | |
| Additional category for effects on or via lactation | | | ≥ 0.1 % |

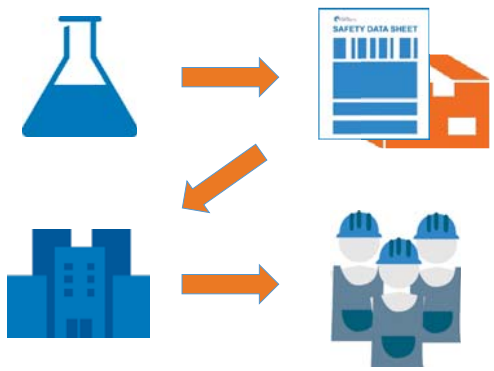
**EU CLP**

| Ingredient classified as: | Generic concentration limits triggering classification of a mixture as: Category 1 reproductive toxicant: Category 1A | Category 1B | Category 2 reproductive toxicant | Additional category for effects on or via lactation |
|---|---|---|---|---|
| Category 1A reproductive toxicant | ≥ 0,3 % [Note 1] | | | |
| Category 1B reproductive toxicant | | ≥ 0,3 % [Note 1] | | |
| Category 2 reproductive toxicant | | | ≥ 3,0 % [Note 1] | |
| Additional category for effects on or via lactation | | | | ≥ 0,3 % [Note 1] |

# What Happened: GHS Adoption

## Business Impact

- Manufacturers/Distributors/Suppliers:
  - Authoring SDSs for all products
  - New labels
- Employers
  - New SDSs for all products used
  - Training employees
  - Workplace labeling requirements



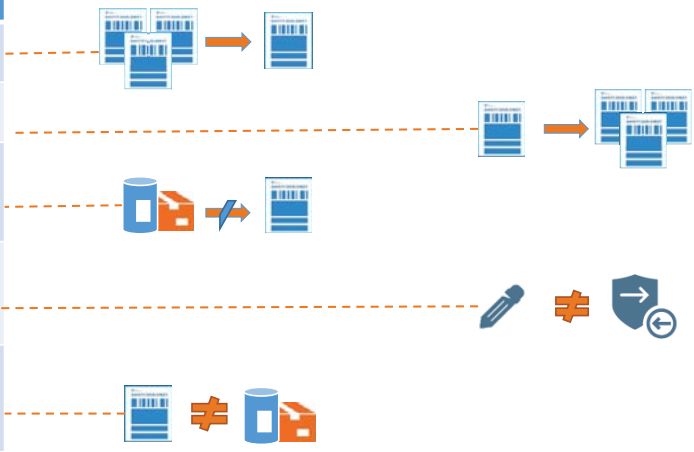
# What *Really* Happened?

## The Real-World Business Impact


# What *Really* Happened?

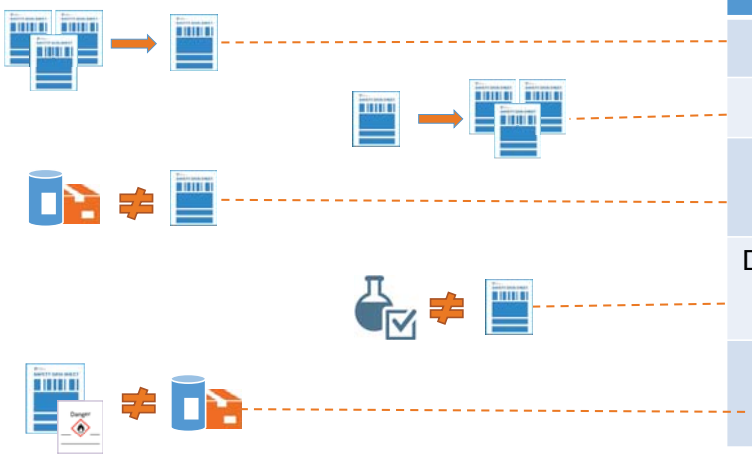

## Business and Transition: MSDS to SDS

| Vendor Business Decision |
| --- |
| Save Money - Combine SDSs |
| Products now on separate SDSs |
| New system – missing product codes; data not migrated in time; |
| Authoring SDSs not considered document management |
| Authoring independent of product packaging |



# What *Really* Happened?

## Business and Transition: MSDS to SDS

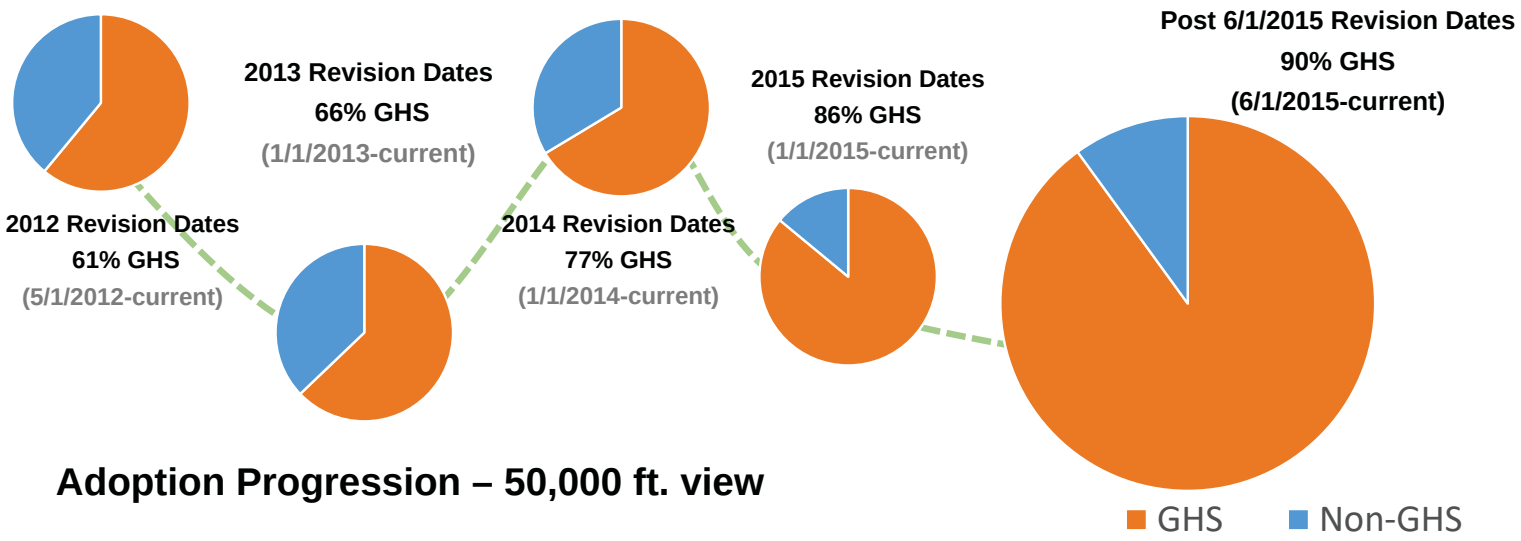


| Employer |
| --- |
| 3 MSDSs become 1 SDS |
| 1 MSDS becomes 10 SDSs |
| Material Identification on SDS vs MSDS different |
| Differences in how the information relates to the SDS |
| Gaps in label generation and practical application |

# MSDS to SDS Reality

## Can 100% Be Expected?

# GHS Impact: The Reality




**Adoption Progression – 50,000 ft. view**

# GHS Impact: The Reality

**Total Facility A:**

| | |
|---|---|
| Total Records | 1303 |
| GHS SDS Records | 841 |
| % of facility SDSs that are GHS SDSs | **65%** |

**Records w/ Revision Date older 5/1/2012:**

| | |
|---|---|
| Total Records older than 5/1 | 104 |
| Total SDS Records | 1303 |
| % of facility SDSs older than 5/1/2012 | **8%** |

**Records w/ Revision Date 6/1/2015 and newer:**
*(Post OSHA & EU CLP Deadline)*

| | |
|---|---|
| Total Records 6/1/2015 and newer | 575 |
| Total SDS Records | 1303 |
| % of facility SDSs 6/1/2015 and newer | **44%** |

**Total Facility B:**

| | |
|---|---|
| Total Records | 904 |
| GHS SDS Records | 212 |
| % of facility SDSs that are GHS SDSs | **23%** |

**Records w/ Revision Date older 5/1/2012:**

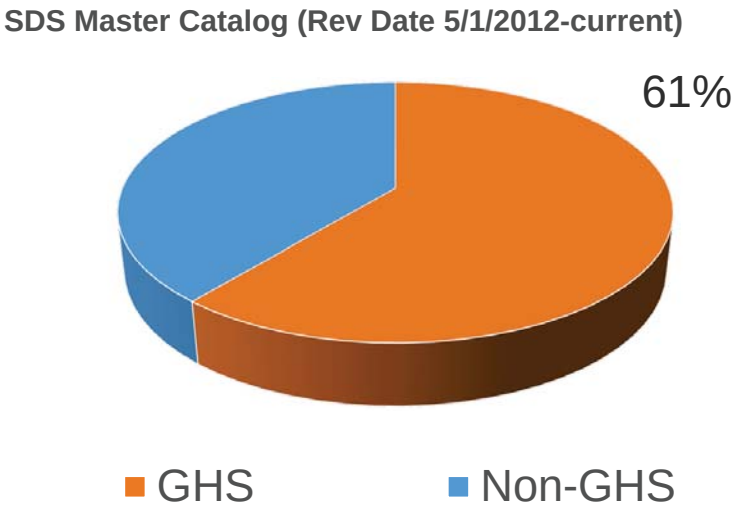
| | |
|---|---|
| Total Records older than 5/1 | 483 |
| Total SDS Records | 904 |
| % of facility SDSs older than 5/1/2012 | **53%** |

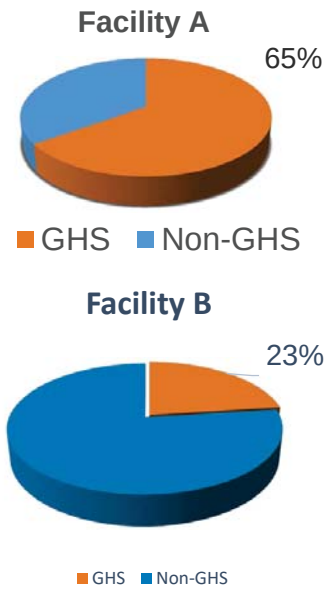
**Records w/ Revision Date 6/1/2015 and newer:**
*(Post OSHA & EU CLP Deadline)*

| | |
|---|---|
| Total Records 6/1/2015 and newer | 77 |
| Total SDS Records | 904 |
| % of facility SDSs 6/1/2015 and newer | **9%** |

# GHS Impact: The Reality

## GHS Documents: Facility vs. Master Catalog




# The Transition Continues

## Maintaining Compliance

# GHS: Next Steps

## Common Questions

**Why are our documents not GHS-compliant?**

Manufacturer/Distributor business decisions; outdated products or mismatched SDSs

**What are these new hazards on our raw materials?**

New GHS hazards and threshold changes

**Does the title “Safety Data Sheet” mean a document is updated?**

No

**3 SDSs for the same raw material have different information. Why?**

Same substance may have different classifications across agencies or distributors.

# GHS: Next Steps

## How can workplaces drive compliance?

### Take Inventory


- Tidy up
- Label or bar code materials
- Planning
- Create chemical areas
- Be thorough/Be detailed
- Audit as you go
- Consider inventory software
- Develop a routine inventory schedule

# GHS: Next Steps

**Action Your Inventory**

- Plan and budget for resources to use inventory information
- Acquire GHS SDSs for existing products
- Identify and acquire new product SDSs
- Identify and archive old product SDSs/MSDSs
- Assign/remove existing chemicals from chemical areas


# GHS: Next Steps


**Incorporate approval processes**


**Review records and audit hazards**


**Educate and train**

# GHS: Looking Forward

- Intervals of revisions
- OSHA begins rule-making process

# Resources

**UN GHS Purple Book**

**OSHA HCS 2012**

**OSHA Fall 2016 regulatory agenda item**

**SiteHawk Resources**: Whitepaper - “8 Tips to Get a Grip on Your Chemical Inventory” & “5 W’s of Chemical Inventory” infographic. Sign up during the session. Free copies of the whitepaper can also be accessed at SiteHawk’s website.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# Q&A

# Thank you !


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