Using SDSs in the Real World Trenches

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Agenda

- GHS/HAZCOM – objectives
- Regulatory Conflicts
- SDS requirement vs. material use
- Under valuing or over valuing data
- Can you burn water?
- Accuracy
- What's Next

GHS/HAZCOM Objectives

- To enhance the protection of human health and the environment by providing an internationally comprehensible system for hazard communication
- To provide a recognized framework for countries without an existing system
- To reduce the need for testing and evaluation of chemicals; and
- To facilitate international trade in chemicals whose hazards have been properly assessed and identified on an international basis

  - Source: https://unece.org/sites/default/files/2024-03/2024_purpose_e.pdf

Regulatory Requirements SDS

(not HAZCOM)

- The GHS was adopted in 2002 at the World Summit on Sustainable Development (Johannesburg)
- The GHS covers
  - Transportation
  - Pesticides
  - Occupational Safety and Health
  - Waste Characterization
  - Prevention of Accidents
- Allows countries to choose building blocks according to need

A

Regulatory Conflicts

Who takes precedence?

- OSHA
- EPA
- DOT
- ECHA
- REACH
- Other

B

Regulatory Requirements SDS

(HAZCOM)

- The Occupational Safety and Health Administration (OSHA) adopted the GHS for the Hazard Communication Standard 29CFR1910.1200 in 2012.
- OSHA did not adopt all of the GHS
- OSHA added requirements
- Biological hazards are not covered

Regulatory Requirements SDS

(HAZCOM)

- Biological hazards may have SDSs created but are not required by HAZCOM
- Pesticides may or may not require a SDS depending upon when they were approved or had approval updated
- HAZCOM requires the classification of hazards of all chemicals.
- SDSs are only required for hazardous chemicals.

B

Regulatory Requirements SDS

(HAZCOM)

- HAZCOM does not apply to;
  - Hazardous Waste
  - Tobacco
  - Wood products
  - CPSC articles
  - Food/alcoholic beverages
  - FDA regulated material
  - Cosmetics
  - Nuisance particulates or ionizing radiation

B

Regulatory Requirements SDS

(Pesticides)

HAZCOM & Pesticides;

- This PR Notice updates and clarifies EPA's determination in PR Notice 92-41 that a Material Safety Data Sheet (MSDS) (also referred to as a Safety Data Sheet (SDS)) that accompanies a pesticide product is considered part of the pesticide's labeling but may accompany a pesticide product without notification to or approval by the Agency, ***provided such labeling is consistent*** with the 40 CFR Part 156 labeling requirements.

B

Regulatory Requirements SDS

(Pesticides)

HAZCOM & Pesticides;

- EPA regards SDSs for pesticides to be labeling when they accompany the pesticide. PR Notice 92-4 (October 1992) explains EPA's policy to allow SDSs to accompany pesticides so long as they do not obscure or conflict with the labeling approved by EPA. Should an SDS conflict with the approved labeling, it could be misleading to users of the pesticide and therefore cause the pesticide to be considered misbranded and unlawful for sale or distribution.

B

SDSs & EPCRA

- EPCRA uses SDSs to determine the nature of the chemical as hazardous or not.
- EPCRA does not regulate SDS generation.
- EPCRA requires SDSs to go to the LEPC & SERC.
- EPCRA requires a chemical inventory

B

Regulatory Requirements SDS

(DOT)

HAZCOM & DOT;

- OSHA pictograms do not replace the diamond-shaped labels that the U.S. Department of Transportation (DOT) requires for the transport of chemicals, including chemical drums, chemical totes, tanks or other containers. Those labels must be on the external part of a shipped container and must meet the DOT requirements set forth in 49 CFR 172, Subpart E. If a label has a DOT transport pictogram, Appendix C.2.3.3 of the HCS states that the corresponding HCS pictogram shall not appear.

B

Regulatory Requirements SDS

(DOT)

HAZCOM & DOT;

- If the carrier is asking you for an SDS for your hazardous materials/dangerous goods shipment, it does not mean that you have to comply. ***The SDS is in no way considered to be a dangerous goods shipping document*** and is never required in the shipping process by any mode. However, carriers are generally private companies and can ask for anything they want as a matter of their company policy.

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Consumer Products

- Exempt from both EPCRA and HAZCOM

SDS Requirements vs. Material Use

E.G. Pharmaceuticals

Pharmaceuticals

HAZCOM does not apply to:

- Any drug, as that term is defined in the Federal Food, Drug, and Cosmetic Act (21 U.S.C. 301 et seq.), when it is in solid, final form for direct administration to the patient (e.g., tablets or pills); drugs which are packaged by the chemical manufacturer for sale to consumers in a retail establishment (e.g., over-the-counter drugs); and drugs intended for personal consumption by employees while in the workplace (e.g., first aid supplies);

B

Pharmaceuticals

- FDA submission data can be confusing as it is pharmacological data and toxicological data.
- A sealed prepackaged powder drug that is not intended to be repackaged or administered to a patient by a worker (e.g., nurse), but is intended to be opened only by the patient and self-administered, would be exempt…
- Powder drugs, including lyophilized powders for injection, that need to be reconstituted by a worker (e.g., nurse or pharmacist) are not in final form and do not fall under the 29 CFR § 1910.1200(b)(6)(vii) exemption, and thus, are covered…

B

Pharmaceuticals

- …the pharmacist/pharmacy technician who counts pills, tablets, or capsules in preparation for packaging are handling the drugs in a matter that would potentially result in exposure to hazardous dust from crumbled pills, tablets, or capsules.
- Repackaging of pills, capsules, or tablets is a process that is considered manufacturing, and therefore covered…
- Manufacturing of pharmaceuticals are covered.

B

Pharmaceuticals

FOUNDATION CONSUMER BRANDS

SAFETY I

Section 3: Composition/ Information on Ingredients			
Chemical Name	**Synonym**	**CAS#**	**Percent**
Benzocaine	Ethyl-4-aminobenzoate	94-09-7	20
Benzyl Alcohol		100-51-6	<1.0
Polyethylene glycol		25322-68-3	*
Propylene glycol		57-55-6	*
*Proprietary			

For a full list of components see product insert.

B

Over or Under Rating the Hazard

B

SDS Accuracy

- What do you do if the SDS says it is extremely hazardous or requires a higher level of PPE than is practical?
- What do you do if the SDS says it is not hazardous when it is?

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Does this have all the hazards

Univar Solutions

Safety Data Sheet
CAUSTIC SODA 25%

Version 1.2 Revision Date: 08/02/2021

SECTION 1. IDENTIFICATION

Product name : CAUSTIC SODA 25%

Synonyms : Sodium Hydroxide

Recommended use of the chemical and restrictions on use

Recommended use : Industrial chemical

Restricted Uses : No data available

Manufacturer or supplier's details

Company : Univar Solutions Canada Ltd.
Address 9800 Van Horne Way
Richmond, BC V6X1W5
Canada

Caustic Soda

SECTION 2. HAZARD IDENTIFICATION

Is this the only hazard?

Hazardous Classification of the substance or mixture

Corrosive to metals : Category 1

Skin corrosion : Category 1A

Serious eye damage : Category 1

Label elements

Hazard pictograms :

Signal word : Danger

Hazard statements : H290 May be corrosive to metals.
H314 Causes severe skin burns and eye damage.

Precautionary statements : **Prevention:**
P234 Keep only in original packaging.
P264 Wash skin thoroughly after handling.

Acute Toxicity

3.1.2 Classification criteria for substances

3.1.2.1 Substances can be allocated to one of five hazard categories based on acute toxicity by the oral, dermal or inhalation route according to the numeric cut-off criteria as shown in the table below. Acute toxicity values are expressed as (approximate) LD_{50} (oral, dermal) or LC_{50} (inhalation) values or as acute toxicity estimates (ATE). While some *in vivo* methods determine LD_{50}/LC_{50} values directly, other newer *in vivo* methods (e.g. using fewer animals) consider other indicators of acute toxicity, such as significant clinical signs of toxicity, which are used by reference to assign the hazard category. Explanatory notes are shown following Table 3.1.1.

Table 3.1.1: Acute toxicity estimate (ATE) values and criteria for acute toxicity hazard categories

Exposure route	Category 1	Category 2	Category 3	Category 4	Category 5
Oral (mg/kg bodyweight) *See notes (a) and (b)*	ATE ≤ 5	5 < ATE ≤ 50	50 < ATE ≤ 300	300 < ATE ≤ 2000	2000< ATE≤ 5000 *See detailed criteria in Note (g)*
Dermal (mg/kg bodyweight) *See notes (a) and (b)*	ATE ≤ 50	50 < ATE ≤ 200	200 < ATE ≤ 1000	1000 < ATE ≤ 2000	
Gases (ppmV) *See notes (a), (b) and (c)*	ATE ≤ 100	100 < ATE ≤ 500	500 < ATE ≤ 2500	2500 < ATE ≤ 20000	*See detailed criteria in Note (g)*
Vapours (mg/l) *See notes (a), (b), (c), (d) and (e)*	ATE ≤ 0.5	0.5 < ATE ≤ 2.0	2.0 < ATE ≤ 10.0	10.0 < ATE ≤ 20.0	
Dusts and Mists (mg/l) *See notes (a), (b), (c) and (f)*	ATE ≤ 0.05	0.05 < ATE ≤ 0.5	0.5 < ATE ≤ 1.0	1.0 < ATE ≤ 5.0	

Section 11 Toxicological Info.

SECTION 11. TOXICOLOGICAL INFORMATION

Acute toxicity

Components:

1310-73-2:

Acute oral toxicity : LD50 (Rabbit): 325 mg/kg

Skin corrosion/irritation

Components:

1310-73-2:

Species: Rabbit

Result: Causes severe burns.

What about over rating

- Causes undue burden on workers.
- Reduces faith in accuracy.
- Can affect regulatory compliance.

Can you burn water

Can you burn water

Safety Data Sheet: **Crystal Simple Green® Industrial Cleaner & Degreaser**
Version No: 19275-23A Issued: 8 September 2023 Supersedes: 18 October 2021 Prior version no: 19275-21C
Model Code of Practice - Preparation of Safety Data Sheets for Hazardous Chemicals 08/2020

Section 1: IDENTIFICATION: PRODUCT IDENTIFIER & IDENTITY FOR THE CHEMICAL

Product identifier: Crystal Simple Green® Industrial Cleaner & Degreaser
Other means of identification: *Please see section 16*

Section 2: HAZARDS IDENTIFICATION

Classification of the hazardous chemical according to Model Work Health & Safety Regulations:
Not classified as hazardous.

Label Elements:
Signal Word: None **Pictogram:** None

Hazard Statement: None
Precautionary Statement: None

Other hazards with do not result in classification: None known.

Can you burn water

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Product identifier: Crystal Simple Green® Industrial Cleaner & Degreaser
Other means of identification: *Please see section 16*

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS Number	Percent Range
Water	7732-18-5	> 87%*
Ethoxylated Alcohol	68439-46-3	< 5%*
Sodium Citrate	68-04-2	< 5%*
Tetrasodium *N,N*-bis(carboxymethyl)-L-glutamate	51981-21-6	< 1%*
Sodium Carbonate	497-19-8	< 1%*
Citric Acid	77-92-9	< 1%*

Is this flammable?

Can you burn water

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Section 5: FIRE FIGHTING MEASURES

Suitable Extinguishing equipment: *Suitable*- Use dry chemical, CO_2, water spray or "alcohol" foam.
Unsuitable-High volume jet water.

Specific hazards arising from the chemical: *Formulation is non-flammable and will boil until evaporated.*

Special protective equipment and precautions for fire fighters: Keep containers cool with water spray. Firefighters should wear self-contained breathing apparatus and full fire-fighting turn-out gear and eye protection.

See Section 16 for NFPA information

Why do I need CO_2 or Foam?

33 B

Accuracy

How do you treat exposure to soap.

B

My favorite

Safety Data Sheet

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision date: 08.02.2019	*Version: 6.0*	*Print date: 08.02.2019*

SECTION 1: Identification

Product identifier

Trade name/designation:	VWR® SoftCIDE Hand Soap
Product No.:	56614-424
Synonymes:	no data available
CAS No.:	not applicable
Other means of identification:	

Relevant identified uses of the substance or mixture and uses advised against

Recommended Use:	For Further Manufacturing Use Only
Uses advised against:	Not for Human or Animal Drug Use

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Emergency Response

SECTION 4: First aid measures

4.1 General information

IF exposed or if you feel unwell: Call a POISON CENTER or doctor/physician. If unconscious place in recovery position and seek medical advice. Never give anything by mouth to an unconscious person or a person with cramps. Change contaminated, saturated clothing. Do not leave affected person unattended.

After inhalation

Call a POISON CENTER/doctor. Remove casualty to fresh air and keep warm and at rest. If breathing is irregular or stopped, administer artificial respiration.

In case of skin contact

After contact with skin, wash immediately with plenty of water and soap. Remove contaminated, saturated clothing immediately. In case of skin reactions, consult a physician.

After eye contact

In case of contact with eyes flush immediately with plenty of flowing water for 10 to 15 minutes holding eyelids apart and consult an ophthalmologist. Protect uninjured eye. Remove contact lenses, if present and easy to do. Continue rinsing.

In case of ingestion

If accidentally swallowed rinse the mouth with plenty of water (only if the person is conscious) and obtain immediate medical attention. Do NOT induce vomiting. Give nothing to eat or drink.

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SDS Data (GHS vs. IFC)

- Definitions do not necessarily match
- Be careful using rating assigned
- Use raw data
- May need to research outside of SDS
- What about inventories?

Example – Organic Peroxide

ORGANIC PEROXIDE. An organic compound that contains the bivalent -O-O- structure and which may … considered to be a structural derivative of hydrogen … where one or both of the hydrogen atoms have … by an organic radical. Organic peroxide… explosion hazard (*detonation* or *defl*… shock sensitive. They can also de… ble compounds over an exte…

Class I. Describe… *deflagration* …

Class … … burn very … …ity hazard.

… …lations that burn rapidly … …ctivity hazard.

… …hose formulations that burn in the … ordinary combustibles and that pose a … …ctivity hazard.

… V. Describes those formulations that burn with less intensity than ordinary combustibles or do not sustain combustion and that pose no reactivity hazard.

Unclassified detonable. Organic peroxides that are capable of *detonation*. These peroxides pose an extremely high-explosion hazard through rapid explosive decomposition.

Organic peroxide means a liquid or solid organic substance which contains the bivalent -O-O- structure and may be considered a derivative of hydrogen peroxide, where one or both of the hydrogen atoms have been replaced by organic radicals. The term also includes organic peroxide formulations (mixtures);

Example – Oxidizer

OXIDIZER. A material that readily yields oxygen or other oxidizing gas, or that readily reacts to promote or initiate combustion of combustible materials and, if heated or contaminated, can result in vigorous self-sustained decomposition.

Class 4. An oxidizer that can undergo an explosive reac- …

Oxidizing gas means any gas which may, generally by providing oxygen, cause or contribute to the combustion of other material more than air does;

NOTE: "Gases which cause or contribute to the combustion of other material more than air does" means pure gases or gas mixtures with an oxidizing power greater than 23.5% as determined by a method specified in ISO 10156:2017.

Oxidizing liquid means a liquid which, while in itself not necessarily combustible, may, generally by yielding oxygen, cause, or contribute to, the combustion of other material;

Oxidizing solid means a solid which, while in itself not necessarily combustible, may, generally by yielding oxygen, cause, or contribute to, the combustion of other material;

Class 1. An oxidizer that does not moderately increase the burning rate of combustible materials.

Questions

A