NAPIM
Avoiding Hazcom GHS Paralysis – A Roadmap to a Successful Program
Part 2
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Overview

- How to Develop a Plan of Attack
- What to do when you have an old MSDS but not the new SDS
- How to verify classifications
- Strategies for moving forward
- Do you need a consultant?
- Trade Secrets
- What is OSHA's Enforcement Policy
- Future Change

How to Develop a Plan of Attack

- Organize your products into groups of similar products
- Put the formulas into a spreadsheet or database where you can search them and manipulate the information
- Do you have a SDS/MSDS for every ingredient
- Fill in the gaps
- You can rely on the non-haz status from old MSDS until you get updated information – Generally what was not hazardous before will still be non-hazardous (there will be exceptions)

RM #	Formula %	Description	MSDS Y/N
1	13	Styrene Acrylic Emulsion	
2	2	Matting Agent	
3	0.2	Defoamer	
4	10	Water	
5	35	Styrene Acrylic Emulsion	
6	2.6	Glycol Ether EB	
7	21.9	Styrene Acrylic Emulsion	
8	5.5	Surfactant	
9	0.1	Defoamer	
10	8.5	Wax Emulsion	
11	1.2	Wax Emulsion	

Breakdown the Formula

- Review each raw material to determine the components
- Add them and the CAS to the Spreadsheet
- RM 1 is a Styrene Acrylic Emulsion at 13%

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RM #	Formula %	Description	Component	Classification
1	13	Styrene Acrylic Emulsion	99.9% Not Listed, 0.1% Ammonia 1336-21-6	Not Hazardous
2	2	Matting Agent		
3	0.2	Defoamer		
4	10	Water		
5	35	Styrene Acrylic Emulsion		
6	2.6	Glycol Ether EB		
7	21.9	Styrene Acrylic Emulsion		
8	5.5	Surfactant		
9	0.1	Defoamer		
10	8.5	Wax Emulsion		
11	1.2	Wax Emulsion		

Breakdown the Formula

- RM 2 is a Matting Agent present at 2%
- GHS SDS
- 100% Amorphous Silica
- Classified as Eye 2A and STOT SE 3 (resp irrit)

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RM #	Formula %	Description	Component	Classification
1	13	Styrene Acrylic Emulsion	99.9% Not Listed, 0.1% Ammonia 1336-21-6	Not Hazardous
2	2	Matting Agent	Amorphous Silica 7631-86-9 100%	Eye 2A, STOT SE 3 (resp)
3	0.2	Defoamer		
4	10	Water		
5	35	Styrene Acrylic Emulsion		
6	2.6	Glycol Ether EB		
7	21.9	Styrene Acrylic Emulsion		
8	5.5	Surfactant		
9	0.1	Defoamer		
10	8.5	Wax Emulsion		
11	1.2	Wax Emulsion		

Breakdown the Formula

- RM 3 is a Defoamer at 0.2%
- MSDS
- >75% Hydrotreated Paraffinic Distillate 64742-54-7
- Based on SDS, Possible eye and skin irritant
- From ECHA Registration – not hazardous

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ECHA Classification

- General Information
  - Identification
  - Compositions
- Classification and Labelling
  - GHS
    - Other Lubricant Base Oils (Annex VI)
    - CLP 1. Other Lubricant Base Oils (IP 346 < 3%; > 20.5 mm2/s @ 40°C)
    - CLP 2. Other Lubricant Base Oils (IP 346 < 3%; ≤ 20.5 mm2/s @ 40°C)
    - CLP 3. Other Lubricant Base Oils (IP 346 ≥ 3%; > 20.5 mm2/s @ 40°C)
    - CLP 4. Other Lubricant Base Oils (IP 346 ≥ 3%; ≤ 20.5 mm2/s @ 40°C)
  - DSD - DPD
- Manufacture, Use & Exposure
- PBT assessment
- Physical and chemical properties
- Environmental fate and pathways
- Ecotoxicological Information
- Toxicological information
- Guidance on safe use
- Reference substances

General Information

Not classified	✓
Implementation	other: EU in combination with self classification
State / form of the substance	liquid
Remarks	Oil Industry Notes (OIN) In addition to the notes given in Annex VI, the following notes have been applied: OIN 8 - The EC CLP classifications as Suspected of damaging the unborn child (H361d) and Causes damage to organs through prolonged or repeated exposure by skin (H372) need not apply if the substance is not classified as carcinogenic.

Classification

Physical hazards

Exposives	conclusive but not sufficient for classification
Flammable gases	conclusive but not sufficient for classification
Flammable aerosols	conclusive but not sufficient for classification
Oxidizing gases	conclusive but not sufficient for classification
Gases under pressure	conclusive but not sufficient for classification
Flammable liquids	conclusive but not sufficient for classification
Flammable solids	conclusive but not sufficient for classification
Self-reactive substances and mixtures	conclusive but not sufficient for classification
Pyrophoric liquids	conclusive but not sufficient for classification
Pyrophoric solids	conclusive but not sufficient for classification
Self-heating substances and mixtures	conclusive but not sufficient for classification
Substances and mixtures which in contact with water emits flammable	conclusive but not sufficient for classification

RM #	Formula %	Description	Component	Classification
1	13	Styrene Acrylic Emulsion	99.9% Not Listed, 0.1% Ammonia 1336-21-6	Not Hazardous
2	2	Matting Agent	Amorphous Silica 7631-86-9 100%	Eye 2A, STOT SE 3 (resp)
3	0.2	Defoamer	Hydrotreated paraffinic distillate 64742-54-7	Not Hazardous
4	10	Water		Not Hazardous
5	35	Styrene Acrylic Emulsion		
6	2.6	Glycol Ether EB		
7	21.9	Styrene Acrylic Emulsion		
8	5.5	Surfactant		
9	0.1	Defoamer		
10	8.5	Wax Emulsion		
11	1.2	Wax Emulsion		

Breakdown the Formula

- RM 5 is a Styrene Acrylic Emulsion at 35%
- MSDS
- Water 45-55%, Ammonium Salt of modified acrylic copolymers, polypropyleneglycol 25322-69-4, Ammonia <0.1%
- Based on SDS, Not Hazardous

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RM #	Formula %	Description	Component	Classification
1	13	Styrene Acrylic Emulsion	99.9% Not Listed, 0.1% Ammonia 1336-21-6	Not Hazardous
2	2	Matting Agent	Amorphous Silica 7631-86-9 100%	Eye 2A, STOT SE 3 (resp)
3	0.2	Defoamer	Hydrotreated paraffinic distillate 64742-54-7	Not Hazardous
4	10	Water		Not Hazardous
5	35	Styrene Acrylic Emulsion		Not Hazardous
6	2.6	Glycol Ether EB		
7	21.9	Styrene Acrylic Emulsion		
8	5.5	Surfactant		
9	0.1	Defoamer		
10	8.5	Wax Emulsion		
11	1.2	Wax Emulsion		

Breakdown the Formula

- RM 6 is Glycol Ether EB at 2.6%
- MSDS
- 2-Butoxyethanol 111-76-2
- Scary MSDS / ECHA Classification
  - Acute Tox 4 (all routes)
    - Oral rat LD50: 650-1746 mg/kg
    - Dermal rabbit LD50: 320 mg/kg,
    - Inhalation rat LC50: estimated LD50 of 3.7mg/l/1 hr (755ppm), 486 ppm/4hrs (2.2 mg/L)
  - Skin Irrit 2
  - Eye Irrit 2A

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RM #	Formula %	Description	Component	Classification
1	13	Styrene Acrylic Emulsion	99.9% Not Listed, 0.1% Ammonia 1336-21-6	Not Hazardous
2	2	Matting Agent	Amorphous Silica 7631-86-9 100%	Eye 2A, STOT SE 3 (resp)
3	0.2	Defoamer	Hydrotreated paraffinic distillate 64742-54-7	Not Hazardous
4	10	Water		Not Hazardous
5	35	Styrene Acrylic Emulsion		Not Hazardous
6	2.6	Glycol Ether EB	2-Butoxyethanol 111-76-2	Acute Tox 4, Eye 2A, Skin 2
7	21.9	Styrene Acrylic Emulsion		
8	5.5	Surfactant		
9	0.1	Defoamer		
10	8.5	Wax Emulsion		
11	1.2	Wax Emulsion		

Breakdown the Formula

- RM 7 is another Styrene Acrylate Emulsion at 21.9%
  - MSDS – Not Hazardous

- RM 8 is a Surfactant – Dioctyl Sodium Succinate
  - Very old MSDS CAS 577-11-7
  - ECHA Classification
    - Skin 2, Eye 1

- RM 9 is a Defoamer at 0.1%
  - Not relevant, since not send or CMR

RM #	Formula %	Description	Component	Classification
1	13	Styrene Acrylic Emulsion	99.9% Not Listed, 0.1% Ammonia 1336-21-6	Not Hazardous
2	2	Matting Agent	Amorphous Silica 7631-86-9 100%	Eye 2A, STOT SE 3 (resp)
3	0.2	Defoamer	Hydrotreated paraffinic distillate 64742-54-7	Not Hazardous
4	10	Water		Not Hazardous
5	35	Styrene Acrylic Emulsion		Not Hazardous
6	2.6	Glycol Ether EB	2-Butoxyethanol 111-76-2	Acute Tox 4, Eye 2A, Skin 2
7	21.9	Styrene Acrylic Emulsion		Not Hazardous
8	5.5	Surfactant	Docusate Sodium 577-11-7	Eye 1, Skin 2
9	0.1	Defoamer		Not Relevant
10	8.5	Wax Emulsion		
11	1.2	Wax Emulsion		

Breakdown the Formula

- RM 10 is a wax emulsion at 8.5%
  - Contains Glutaraldehyde and Sodium Metabisulfite each 0.1-1% = 0.085% in product – not relevant
  - MSDS – Not Hazardous

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- RM 11 is another Wax Emulsion
  - MSDS – Not Hazardous

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RM #	Formula %	Description	Component	Classification
1	13	Styrene Acrylic Emulsion	99.9% Not Listed, 0.1% Ammonia 1336-21-6	Not Hazardous
2	2	Matting Agent	Amorphous Silica 7631-86-9 100%	Eye 2A, STOT SE 3 (resp)
3	0.2	Defoamer	Hydrotreated paraffinic distillate 64742-54-7	Not Hazardous
4	10	Water		Not Hazardous
5	35	Styrene Acrylic Emulsion		Not Hazardous
6	2.6	Glycol Ether EB	2-Butoxyethanol 111-76-2	Acute Tox 4, Eye 2A, Skin 2
7	21.9	Styrene Acrylic Emulsion		Not Hazardous
8	5.5	Surfactant	Docusate Sodium 577-11-7	Eye 1, Skin 2
9	0.1	Defoamer		Not Relevant
10	8.5	Wax Emulsion	Glutaraldehyde 0.087%	Not Hazardous
11	1.2	Wax Emulsion		Not Hazardous

Overall Classification

- Eye 1 = 5.5%
- Eye 2A = 4.6
- STOT SE 3 = 2%
- Skin 2 = 8.1%
- Acute Toxicity

$$\frac{100}{ATE_{mix}} = \sum_{n=i} \frac{C_i}{ATE_i}$$

Oral 2.6/650 = 25,000 mg/kg

Dermal 2.6 / 320 = 12,500 mg/kg

Inhal 2.6/2.2 = 84.7 mg/L

Criteria for Acute Toxicity

Acute Toxicity	Cat. 1	Cat. 2	Cat. 3	Cat. 4	Cat. 5 (not Hazcom 2012)
Oral (mg/kg)	≤5	>5 - ≤50	>50 - ≤300	>300 - ≤2000	Criteria: ≤5000 • ≤5000 • Anticipated significant effects in human • Any mortality at class 4 • Significant clinical signs at class 4 • Indications from other studies
Dermal (mg/kg)	≤50	>50 - ≤200	>200- ≤1000	>1000- ≤2000	
Gases (ppm)	≤100	>100 - ≤500	>500- ≤2500	>2500- ≤20000	
Vapours (mg/l)	≤0.5	>0.5- ≤2.0	>2 - ≤10	>10 - ≤20	
Dust and mists (mg/l)	≤0.05	>0.05- ≤0.5	>0.5- ≤1.0	>1.0 - ≤5	

Skin Corrosion/Irritation – Mixtures Additivity

Table A.2.3: Concentration of ingredients of a mixture classified as skin Category 1 or 2 that would trigger classification of the mixture as hazardous to skin (Category 1 or 2)

Sum of ingredients classified as:	Concentration triggering classification of a mixture as:	
	Skin corrosive	Skin irritant
	Category 1	Category 2
Skin Category 1	≥ 5%	≥ 1% but < 5%
Skin Category 2		≥ 10%
(10 × Skin Category 1) + Skin Category 2		≥ 10%

Eye Damage/Irritation – Mixtures Additivity

Sum of ingredients classified as:	Concentration triggering classification of a mixture as:	
	Serious eye damage	Eye Irritation
	Category 1	Category 2/2A
Skin Category 1 + Eye Category 1	≥ 3%	≥ 1% but < 3%
Eye Category 2		≥ 10%
10 x (Skin Category 1 + Eye Category 1) + Eye Category 2		≥ 10%

Note: A mixture can be classified as 2B if all relevant ingredients are classified as 2B (NEW)

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STOT SE Category 3

- Respiratory Irritation
  - Based mainly on human experience, supported by objective measurements, should be typical in exposed population – not sensitive individuals
- Narcotic Effects
  - CNS Depression, transient, animals or humans
- Mixtures
  - Same criteria as substances
  - Suggested cut-off value 20%
  - Respiratory irritation and narcotic effects classified separately
  - Ingredients additive unless evidence they are not.

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Overall Classification/Label

GHS Classification: Eye Damage Category 1

Label Elements

Danger

Causes serious eye damage.

Wear eye protection/face protection. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER or doctor.

SDS

- Add Classification and Labeling to Section 2
- Section 3
  - Ingredients to list (Health Hazards present above cut-off concentrations)
  - 2-Butoxyethanol 111-76-2 2.6%
  - Docusate Sodium 577-11-7 5.5%
  - All others optional – may include "Non-Hazardous Resin and Wax Emulsions"

How to Verify Classifications

- Look for all sources of classifications
  - Check for REACH Registrations
  - Check e-Chem Portal
  - Google other supplier US and EU SDS
- Benefit of Being Proactive
  - Your supplier may be wrong – we are all new at this
  - Over-classification makes your products look bad
  - Under-classification may be a compliance or liability issue

Can I Count on the EU Classifications?

- Not Always
  - OSHA expects us to follow IARC and NTP Classifications for Carcinogens

  IARC List
  http://monographs.iarc.fr/ENG/Classification/index.php

  NTP List
  http://ntp.niehs.nih.gov/pubhealth/roc/roc13/index.html
  - In general use the self-classifications
  - Be careful with the C&L Inventory Classifications

How can I tell if my SDS Complies

- Let's look at some that do not.

SECTION 2. HAZARDS IDENTIFICATION

WARNING!

EXPOSURE PREVENTION: PREVENT DISPERSION OF MISTS OR DUST!

RISK STATEMENTS:

R36/37/38	Irritating to eyes, respiratory system and skin.
R65	Harmful: may cause lung damage if swallowed.

SAFETY STATEMENTS:

S2	Keep out of the reach of children.
S23	Do not breathe gas, fumes, vapor, or spray.
S24	Avoid contact with skin.
S62	If swallowed, do not induce vomiting; seek medical advice immediately and show this container or label.

SEE SECTIONS 8, 11 & 12 FOR TOXICOLOGICAL INFORMATION.

Classification

Aspiration toxicity	Category 1
Flammable aerosols	Category 2

GHS Label elements, including precautionary statements

Emergency Overview

DANGER

Hazard Statements
May be fatal if swallowed and enters airways
Flammable aerosol

Appearance Clear **Physical state** Aerosol **Odor** Solvent

Precautionary Statements - Prevention
Obtain special instructions before use
Do not handle until all safety precautions have been read and understood
Use personal protective equipment as required
Keep away from heat/sparks/open flames/hot surfaces. — No smoking
Do not spray on an open flame or other ignition source
Pressurized container: Do not pierce or burn, even after use

Precautionary Statements - Response
If exposed or concerned: Get medical advice/attention
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
Do NOT induce vomiting

Precautionary Statements - Storage
Store locked up
Protect from sunlight. Do not expose to temperatures exceeding 50 °C/122 °F

Precautionary Statements - Disposal
Dispose of contents/container to an approved waste disposal plant

EMERGENCY PHONE NUMBER: ..... (205) 555-1212

PRODUCT NAME: ..... Acetone

CHEMICAL FAMILY: .....

CAS NUMBER: 67-64-1

SECTION II - HAZARDOUS IDENTIFICATION

GHS CLASSIFICATION:

Classification	
Flammable Liquids	Category 2
Acute Toxicity, Oral	Category 4
Skin Corrosion/Irritation	Category 3
Serious Eye Damage/Eye Irritation	Category 2A
Serious Eye Damage/Eye Irritation	Category 2B

DANGER!

GHS LABEL:

Hazard Statements

H225	Highly flammable liquid and vapor
H302	Harmful if swallowed
H316	Causes mild skin irritation
H319	Causes serious eye irritation
H320	Causes eye irritation

Strategies for Moving Forward

- Doing Nothing is Not an Option
- Start with 1 or 2 Simple Formulations
- Prioritize by sales volumes
  - Customers will demand compliant SDS on time
- Put off products that sell rarely – you can do them after June 1 (before you fill an order)
- Products containing components you have no classifications for and cannot get – document and put aside until you get the information
- Update lists frequently – set a goal (1 SDS/day/week)

Do You Need Help?

- Consultants can help but most are very busy
- Consultants can be expensive but can get you started
- Consider have some "model" SDS done to get you started.
- Consider having raw material/substance classifications done
- Even administrative help can make a big difference

What About Trade Secrets

- OSHA's Policies have not changed
- Specific Chemical and Exact Percentage can be claimed trade secret
- Read the OSHA Standard – paragraph (i)
  - Must be able to support that the information is a trade secret
  - Must disclose all hazardous properties and effects
  - Must indicate that information is being withheld as a trade secret
  - Must make information available as required in regulation

What if I Cannot Meet June 1

- OSHA has issued an enforcement memo
- Compliance officers will not enforce if
  - Information from upstream RM supplier is not available
  - Mfg. has exercised "reasonable diligence and good faith" in attempting to obtain needed classification information
  - Will allow reasonable time to come into compliance
  - IF COMPLIANT WITH HAZCOM 1994

Supplier Obligations

- Upstream suppliers must send Hazcom 2012 SDS to customers when available
  - With next shipment
  - Immediately on request
- Failure to do so will be referred for enforcement

Reasonable Diligence / Good Faith

- Manufacturer must show substantial efforts to
  - Obtain classification/SDS from supplier
  - Find information themselves
  - Classify themselves based on data
- Documentation

  (a) Develop and document process used to gather information from upstream suppliers and the status of such efforts;

  (b) Develop and document efforts to find hazard information from alternative sources

  (c) Provide written account of efforts (dates, copies etc.)

  (d) Provide written account of continued dialogue with its distributors informing them why it has been unable to comply with HCS 2012; and,

  (e) Develop the course of action it will follow to make the necessary changes to SDSs and labels.

Compliance Extension

- Manufacturer/Importer must update SDS and labels within 6 months of receiving the needed information
- Citations may be issued after that time
- Distributors must also document their efforts to obtain compliant SDS and label and on a cases-by-case basis may ship 1994 labeled product until December 1, 2017 (SDS send immediately after receipt)
- Policy will not extend more than 2 years

Customer Demand

- The biggest driver for compliance will be customers
- May refuse products with old labels after 6/1/15
- May demand compliant SDS for sale
- Communicate with customers

Future Change

- When you get new SDS, you will have to review your classifications and affects on SDS and labels
- SDS must be updated in 3 months after significant new information
- Labels updated within 6 months
- Change will continue or accelerate
  - REACH last registration date 6/1/2018
  - Korea, China and Taiwan have mini-REACH
  - TSCA Reform
- SDS work is never finished

Other Issues

- Some manufacturers holding new SDS/labels to avoid looking bad.
- What to do with inventory in-house after June 1 and new SDS and labels are available?
- Communicating change to your customers
  - Communicate big changes before the SDS arrives
  - Encourage them to inform themselves and workers

Canada WHMIS 2015

- Hazardous Products Regulations Published February 11, 2015
- Effective Immediately
- Transition period ends for manufacturers June 1, 2017
- Transition period ends for distributors June 1, 2018
- Transition period ends for employers December 1, 2017

		Manufacturers and Importers	Distributors	Employer
Phase 1	From February 11, 2015 until Phase 2	WHMIS 1988 or WHMIS 2015	WHMIS 1988 or WHMIS 2015	WHMIS 1988 or WHMIS 2015*
Phase 2	From June 1, 2017 until Phase 3	WHMIS 2015	WHMIS 1988 or WHMIS 2015	WHMIS 1988 or WHMIS 2015*
Phase 3	From June 1, 2018 to Completion	WHMIS 2015	WHMIS 2015	WHMIS 1988 or WHMIS 2015*
Completion	December 1, 2018	WHMIS 2015	WHMIS 2015	WHMIS 2015*

Overview of HPR

- Adopts Rev 5 of the GHS (other than aerosols)
- Very similar to US adoption
- Additional Hazards Covered
  - Biohazardous
  - PHNOC and HHNOC
- Labeling
  - Refers to the GHS Annex 3 for label elements except Canada specific hazards

Overview of HPR

- SDS Format same as US/GHS
- Information in Sections 12-15 will not be enforced
- Labels and SDS must be bilingual
- Regulation contains small container exemptions
- For more information
- http://www.hc-sc.gc.ca/ewh-semt/occup-travail/whmis-simdut/ghs-sgh/classification/hazardous-products-produits-dangereux/index-eng.php

Canada Trade Secrets

- To avoid disclosure of the identity of a hazardous ingredient – must file for exemption
- Must submit claim form, SDS and fee
- Canada requires the actual concentration or concentration range for hazardous ingredients
- Can add the concentration to a CBI claim now
- Section 3 disclosure requires disclosure of components that are
  - Health Hazards
  - Present above the concentration limit or
  - Present in a concentration that results in classification

Thank You

Questions?

Contact: d.deeds@ih-sc.com

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