

Complying with GHS NSC Utilities Division

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Agenda



1. Overview

2. Status Update

3. Economic Analysis

**4. Downstream Market
Concerns**

5. Operational Readiness

6. Questions

Globally harmonized system of Classification and Labelling of Chemicals

- A common approach to defining and classifying hazards of chemical substances and mixtures, and conveying information about those hazards on labels and Safety Data Sheets (SDS)
- Criteria for hazard classification and hazard communication (Labels and SDSs) are harmonized and standardized.
- One system for workers, consumers, transport workers, and emergency responders.
- Provides the underlying infrastructure for establishment of national, comprehensive chemical safety programs.

Current Status

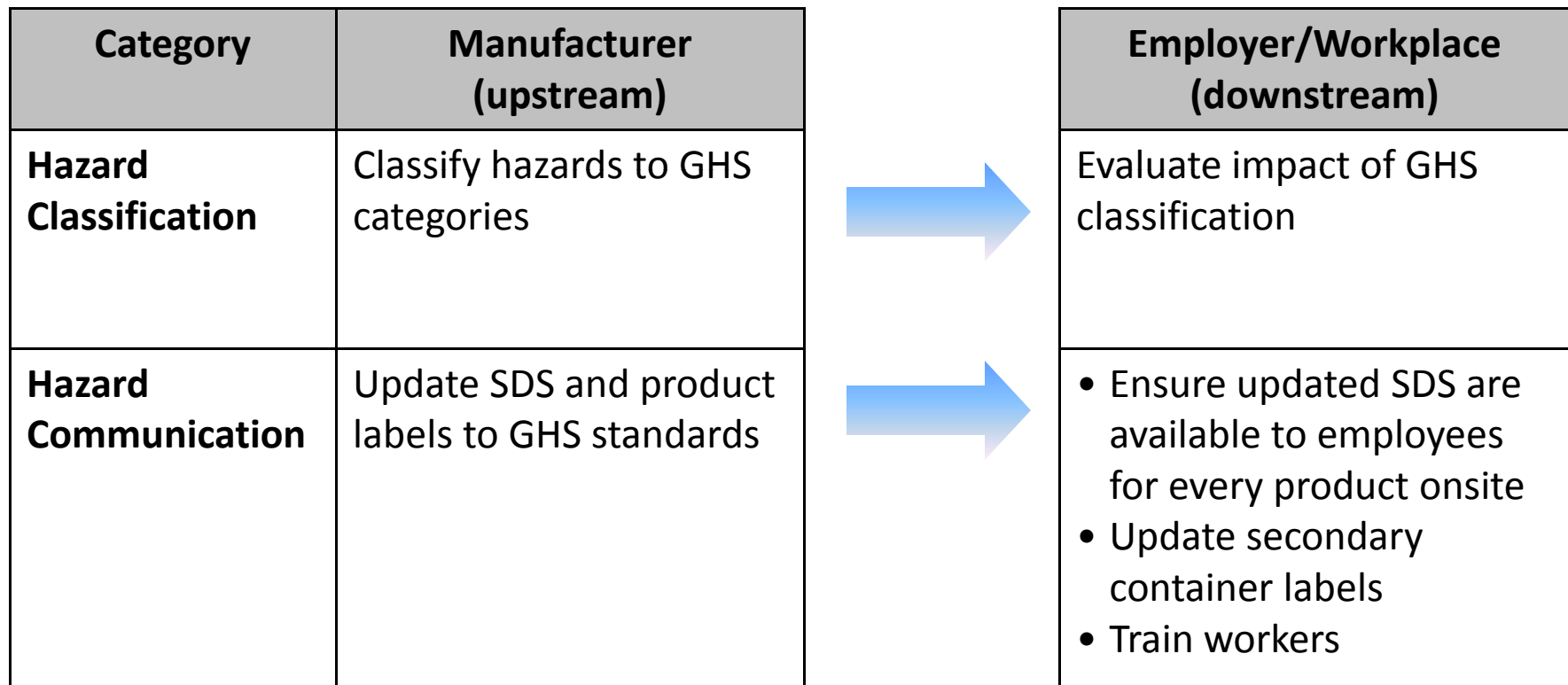


- October 25, 2011, OSHA sent its final rule on GHS to the Office of Management and Budget (OMB). OMB had 90 days to review and finalize with the option to extend (up to 30 days).
- Late 2011, publication was expected in the CFR in early 2012.
- January 24, 2012, OMB extended its review period for OSHA's GHS final rule. The OMB extension of review is a one-time basis for no more than 30 days. The OMB also has the option of returning the final rule to OSHA for reconsideration during the review.
- Full implementation of the OSHA-GHS, it will be the 3 years and one month (from the date of promulgation)

GHS Authoring Costs: OSHA vs. Industry Analysis

- OSHA's Estimated Metrics
 - \$100 million in labor cost to revise 400,000 (OSHA concedes that it may be as high as 800,000) affected MSDS to GHS format
 - An average time of 5.14 hours to update each document
 - \$47 per hour labor rate
 - This translates into roughly \$250 per MSDS
- Industry Estimates
 - Consumer & industrial paints – 7 hours per SDS at cost of \$750 minimum
 - Global chemical mfr – approx 8-20 hours per SDS at cost of \$400-1,000
 - Paint and coatings formulator – 5 hours at cost of \$300-1,000
 - Global petrochemical mfr - 6 hours at cost of \$375
- A Tale of Two Estimates
 - OSHA: 400K MSDS / 5.14 hours per doc / \$250 per MSDS / estimated total cost \$100M
 - Mfgs: >400K MSDS / 9.2 hours per doc / >\$600 per MSDS / estimated total cost \$250M

GHS Adoption Responsibilities



GHS classification Impacts Downstream

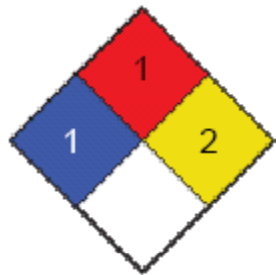


Category	Impact	Action
Raw Material Classification	Finished goods may become more/less hazardous to manufacturer , store, use, transport, and dispose of. This is the GREAT X-FACTOR that is seldom raised.	<ul style="list-style-type: none"> • Reclassified hazards could have significant workplace safety impacts,– especially when hazards increase (e.g. CMR) • Evaluation system for identification of less hazardous use chemicals and consumables may need to be developed
Regulatory Reporting	Hazard re-classifications will impact regulatory reporting responsibilities – A new ‘carcinogen’ may create reporting requirements at a state or federal level that did not previously exist.	Access to revised regulatory lists will be critical to capture all impacts. Analysis of revised lists with product level ingredients (CAS# and % range) will be of significant value.
Waste Disposal	Product reclassified as more hazardous	Waste holders /generators may need to consider the concentrations of any newly re-classified dangerous substances for use, storage and disposal
Purchasing	Product classification impacts purchasing decisions as it impacts storage, PPE, disposal, finished goods, and training requirements, amongst others.	<ul style="list-style-type: none"> • Ability to analyze alternative, less hazardous products may need to be applied to vendor and product selection s • Assess quantity limitations that may drive compliance requirements • GHS information can be funneled into the emerging sustainability and green purchasing strategies to help companies buy less toxic and harmful products
Training & Awareness	GHS classification is very different to current methods used within each country.	Stakeholder awareness and training is necessary to educate employees and other downstream users to understand new information, and impacts.

Update Labels to GHS



"A" Components for Pressure Pour



4 - Severe
3 - Serious
2 - Moderate
1 - Slight
0 - Minimal

Health	2*
Flammability	1
Reactivity	1
PPE	B

Refer to (M)SDS for more details

"A" Components for Pressure Pour

SKU: 123, Shaw Group ID#: 34567



Danger

Heating may cause a fire.
Combustible liquid.
May cause damage to organs through prolonged or repeated exposure.
Harms public health and the environment by destroying ozone in the upper atmosphere.
May cause damage to organs through prolonged or repeated exposure by skin contact.
Contains epoxy constituents. May produce an allergic reaction.

If medical advice is needed, have product container or label at hand.
Keep out of reach of children.
Read label before use.
Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Keep away from heat/sparks/open flames/hot surfaces. — No smoking

Supplemental Label Information
For further information on this product, see Safety Data Sheet.

Contains
Isocyanic acid, polymethylenepolyphenylene ester >>Benzene, 1,1'-methylenebis[4-isocyanato-

Dow Chemical
1881 West Oak Parkway, Marietta, Georgia, 30062-221, United States
Phone: 800366-4740

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Current OSHA Template

- Identity of hazardous chemical
- Hazard warnings
- Contact information for manufacturer/importer/responsible party.

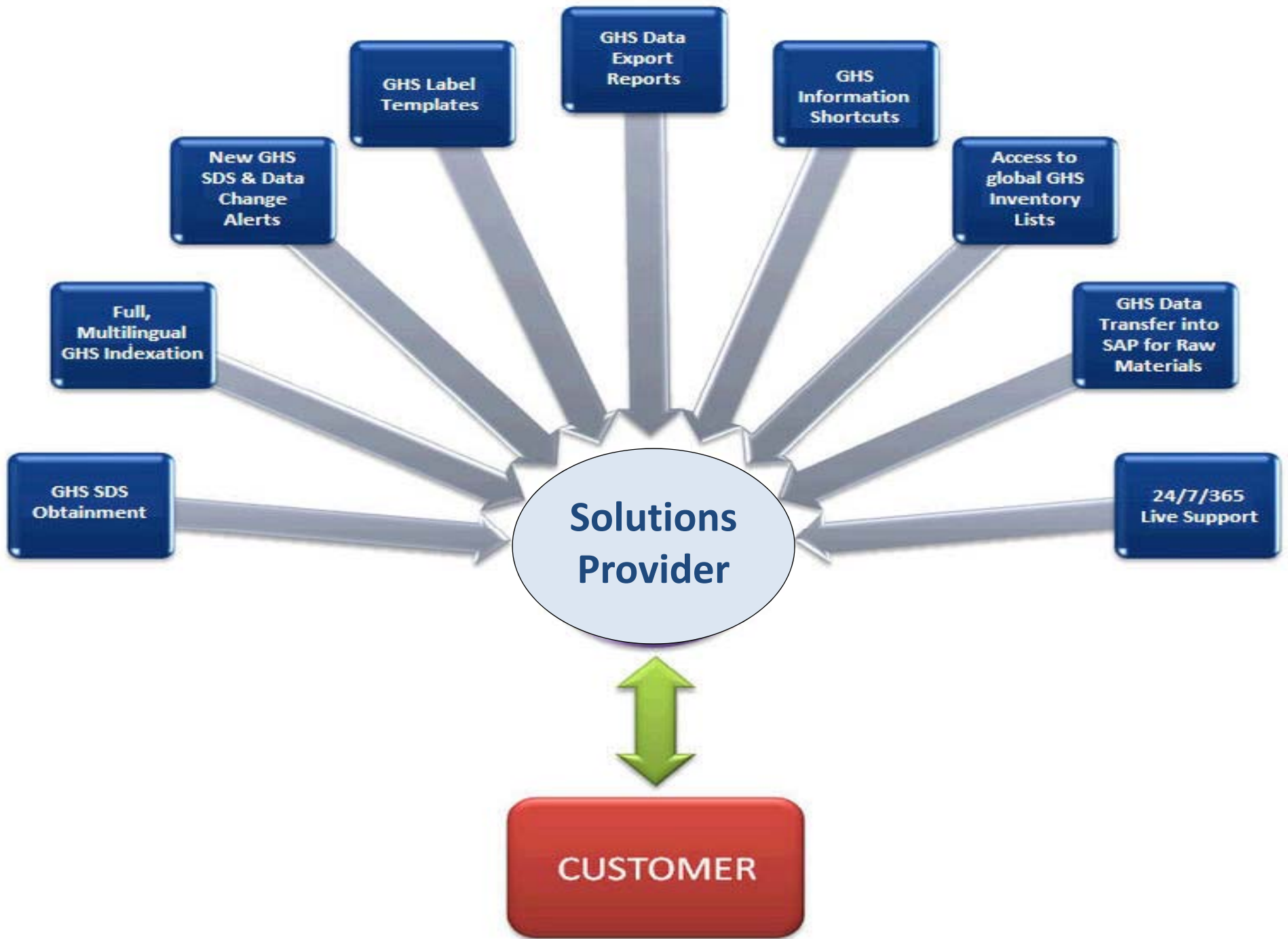
GHS Template

- Product Identifier
- Pictograms
- Signal word
- Precautionary Statements
- Hazardous Statements
- Supplemental Information
- Supplier Identification

- **GHS Adoption Awareness & Timing:**
 - OSHA’s proposed 3-year adoption period will create a number of downstream challenges with regard to
 - Employee training
 - Document management
 - Data management
 - EH&S systems/process upgrades
 - Suppliers will not all update SDS at the same time or on time
 - 3E estimates a workload spike at the beginning (early adopters) and end (stragglers) with a handful of organizations missing the deadline

- **Cost/Resources: Money, time, and tools**
 - “Do I even know what products I have on site?” ...absent an accurate chemical inventory list, it will be difficult to assess GHS impacts
 - Increased updating effort and tracking volume of inbound SDS
 - Hazard reclassification challenges
 - Some products that currently do not require an MSDS now, may in the future
 - Increased hazards may result in increased compliance requirements
 - Hazard reclassification analysis tools
 - Immediate notification of products with revised hazards
 - Electronic integration with revised regulations, at an ingredient level
 - Immediate and accurate regulatory impact analysis at ingredient, product, site inventory levels, with all applicable revised regs
 - Where/how to store, manage and retrieve GHS documents and data as it arrives

- **Actions: “.....And now what, and with what?”**
 - Outline your compliance framework NOW, predetermining
 - Roles and responsibilities at a corporate, site, field level
 - # of employees to be trained / estimated training hours required
 - # of work sites impacted
 - # of plant managers and safety professionals involved / estimated time requirement
 - # of product MSDS to be revised
 - Develop a capacity plan to address the transition and all required changes
 - Conduct a resource assessment
 - Develop a draft training plan
 - Analyze required infrastructure revisions and upgrades
 - Expanded data fields
 - GHS symbols/pictograms
 - New label templates for internal containers
 - Analyze required internal process changes
 - Evaluate impact of GHS re-classification
 - Analyze and confirm vendor capabilities to improve compliance



Questions?