OSHA Revises Its Hazard Communication Standard to Implement GHS

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Warnings about chemical hazards will never be the same. The Occupational Safety and Health Administration just drastically changed its hazard communication standard, which has been in effect for nearly 30 years. It did so to embrace a standardized approach developed through the United Nations known as the Globally Harmonized System. This amended standard, published March 26, 2012, means that virtually all the labels and material safety data sheets prepared over those three decades need to be revised by June 1, 2015. The biggest challenge will be to reevaluate the hazards of every hazardous chemical using a rigorous classification scheme. This client alert analyzes the key changes in the OSHA rule.

Background on the HCS and GHS

OSHA first adopted the hazard communication standard (HCS) in 1983. This standard, innovative for the time, gave chemical manufacturers extensive flexibility in identifying and characterizing hazards on labels and material safety data sheets (MSDSs).

The 1983 HCS set a floor of hazardous chemicals for which warnings were required, but applied to any hazardous substance or mixture (with a few exceptions, such as for hazardous waste). It set a simple trigger for warning: a single valid study showing an effect would require a warning, at least on the MSDS. It identified minimum elements that must appear on a label and an MSDS, but its performance-oriented provisions did not restrict what a chemical manufacturer preparing them must say about those elements. The HCS adopted simple concentration thresholds for hazardous components of mixtures, mandating lower concentrations where available data indicated the need. The result was a tremendous increase in information about hazardous chemicals available to downstream employers and their employees, but also much dissimilarity in what was said by different chemical manufacturers for similar products.

Since 1983, OSHA has broadened the scope of industrial sectors to which the HCS applies and tinkered with aspects of it, but retained the essential structure. Its fundamental conception, unchanged in the new rule, is to have those at the top of the supply chain, who select the chemicals that go into a product and presumably know most about the hazards of those chemicals, identify those hazards using available information. These chemical manufacturers include importers, the first players in the supply chain for imported chemicals subject to OSHA jurisdiction. Chemical manufacturers summarize those hazards and provide precautionary information on product labels and MSDSs. Where chemical identities are trade secrets, they may be withheld, but no hazard or precautionary information may be omitted because of trade secret status. The focus is on hazard, not risk, on the basis that upstream suppliers may know little about the exposure of downstream users to the chemicals. Distributors are required to pass on

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2 The HCS has been amended several times since then. It appears at 29 C.F.R. § 1910.1200 and is incorporated in 29 C.F.R. §§ 1915.1200, 1917.28, 1918.90, and 1926.59. In addition, all states with OSHA-approved state plans have their own versions of the HCS, most virtually identical to the OSHA standard. California has a significantly different version of the HCS, 8 Cal. Code Regs. § 5194, which incorporates aspects of Proposition 65.
labels and MSDSs to their customers. Users of chemicals, whose employees may be exposed to the chemicals in products, are responsible for informing their employees about the hazards and training them how to protect themselves from those hazards in the employer’s particular workplace. Employers also have to label containers of chemicals present in the workplace.

In adopting this scheme in 1983, OSHA acknowledged that there would have been advantages in a standardized system for chemicals moving in international trade, had one then been available.\(^3\)

OSHA was not alone in this view. In 1992, the United Nations Conference on Environment and Development issued a mandate, with U.S. support, calling for development by 2000 of “a globally harmonized hazard classification and compatible labeling system, including material safety data sheets and easily understandable symbols.” OSHA served as the chair of the coordinating group charged with developing that system.

The first version of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS) was published in 2003. International panels of experts continued to make incremental additions and improvements, with the first revised edition published in 2005, the second in 2007, the third in 2009, and the fourth in 2011.\(^4\) Work is expected to continue for years. OSHA will have to issue guidance or conduct rulemaking, as appropriate, to adapt its new rule to future changes.

GHS is based on best practices from several existing systems, including those of the European Union, the United States, Canada, and the United Nations Recommendations on Transport of Dangerous Goods. It includes some of the basic structure of the HCS, including having upstream suppliers evaluate the hazards of their products and convey that information to their downstream customers through labels and safety data sheets (SDSs) (GHS does not use the term “MSDS”). GHS does not include most of the workplace elements included in the HCS, such as hazard communication programs and workplace labeling. It leaves trade secret issues to national authorities rather than set a uniform policy.

The key differences between the original HCS and GHS are the classification system, with criteria for physical, health, and environmental hazards; the use of standardized statements of hazard and precautions; the use of pictograms conveying hazard symbols; and standardized SDS content and format.

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\(^3\) “The development of internationally agreed standards would make possible the broadest recognition of the identified hazards while avoiding the creation of technical barriers to trade and reducing the costs of dissemination of hazard information by elimination of duplicative requirements which could otherwise apply to a chemical in commerce. As noted previously, these regulations will be reviewed on a regular basis with regard to similar requirements which may be evolving in the United States and in foreign countries.” 48 Fed. Reg. 53280, 53287 (Nov. 25, 1983).

\(^4\) The third and fourth revised editions, along with other information about GHS, are available at [http://www.unece.org/trans/danger/publi/ghs/ghs_welcome_e.html](http://www.unece.org/trans/danger/publi/ghs/ghs_welcome_e.html).
In 2009, OSHA proposed to overhaul the HCS to incorporate GHS. The proposal did not include the GHS elements relating to environmental hazards, which fall outside OSHA’s purview. The motive was more than harmonization for purposes of international trade; OSHA believed that hazard communication would be more effective with the GHS elements.

On March 26, 2012, OSHA published a final rule amending the HCS. It reflects the third revised edition, with some additional changes added to the fourth revised edition. The final rule also makes conforming changes in several other OSHA safety and health standards.

**Overview of the Amended HCS**

Much of the text of the former HCS is retained in the revised rule. Some nomenclature has changed (e.g., “safety data sheet” for “material safety data sheet,” “hazard classification” for “hazard determination”), and OSHA made miscellaneous edits throughout.

The criteria for hazard determination (classification) in paragraph (d), the label elements in paragraph (f), and the (M)SDS elements in paragraph (g) have been amended to refer to the new appendices. These replace the fairly simple health hazard definitions in former Appendix A and the hazard determination provisions in former Appendix B. Now Appendix A provides health hazard criteria, Appendix B provides physical hazard criteria, Appendix C provides label elements, and Appendix D provides a mandatory template for SDSs. Appendix E contains the previous guidance on trade secrets. Guidelines for employer compliance (former Appendix E) have been deleted. Appendix F provides guidance on carcinogenicity hazard classifications.

The new rule becomes effective on May 25, 2012. Employees must be trained on the new label elements by December 1, 2013. Otherwise, compliance is due by June 1, 2015 for all elements of the new HCS, with the following exceptions. Distributors may ship products with labels meeting the old rule for six months after that date, until December 1, 2015. Workplace labeling, the employer’s hazard communication program, and training on newly identified hazards must meet the new requirements by June 1, 2016. During the transition period, companies may comply with either the old rule or the new rule or both.

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6 The June 1, 2015 compliance date aligns with the compliance date for mixtures under the European Union’s implementation of GHS, Regulation (EC) No 1272/2008 on classification, labelling and packaging of substances and mixtures (CLP). See CLP Art. 62.

7 Note that in states with state plans, the compliance deadlines may differ from those of OSHA. State plan states are required to revise their versions of the HCS within six months of March 26, 2012.
OSHA has provided some guidance documents for the new rule on its website. These include FAQs, a side-by-side comparison of the old and new rules, a fact sheet, and HCS Quick Cards on SDSs, labels, and pictograms. Additional guidance is under consideration.

**Hazard Classification**

One of the biggest differences introduced in the revised HCS is the requirement for hazard classification, which is addressed in paragraph (d) and Appendices A and B.

The old rule set a floor of hazardous substances, those in the latest edition of the American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Values (TLVs), and carcinogens as determined by the International Agency for Research on Cancer (IARC) in published monographs, the National Toxicology Program (NTP) in its Report on Carcinogens, or OSHA in its health standards. These floors have been deleted.

Chemical manufacturers still have the responsibility to identify the hazards of the chemicals in their products. OSHA did not adopt the procedure in the EU under its CLP regulation where a government agency classifies the hazards of many individual chemicals.

Individual chemicals must be classified as to their physical and health hazards. “Classification” means “to identify the relevant data regarding the hazards of a chemical; review those data to ascertain the hazards associated with the chemical; and decide whether the chemical will be classified as hazardous according to the definition of hazardous chemical in this section. In addition, classification for health and physical hazards include the determination of the degree of hazard, where appropriate, by comparing the data with the criteria for health and physical hazards.” Degrees of hazard are indicated by assignment to various hazard categories within a hazard class (e.g., a Category 3 acute oral toxicity hazard).

The 10 health hazard classes for which the HCS provides classification criteria are acute toxicity, skin corrosion/irritation, serious eye damage/eye irritation, respiratory or skin sensitization, germ cell mutagenicity, carcinogenicity, reproductive toxicity, specific target organ toxicity from a single exposure and from repeated or prolonged exposure, and aspiration hazard.

The 16 physical hazard classes with classification criteria are explosives, flammable gases, flammable aerosols, oxidizing gases, gases under pressure, flammable liquids and solids, self-reactive chemicals, pyrophoric liquids and solids, self-heating chemicals, chemicals which emit flammable gases in contact with water, oxidizing liquids and solids, organic peroxides, and chemicals corrosive to metals.

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9 Most of the classifications in CLP Annex VI are based on earlier classifications under the Dangerous Substances Directive, Directive 67/548/EEC. See CLP Annex VII. Accordingly, a CLP classification may reflect outdated scientific information. Manufacturers may want to consider CLP classifications, but supplement them with their own assessments of the current data.
The classification criteria for flammables differ from those in the old rule.\textsuperscript{10} For example, there is no longer any reference to combustible liquids. Several other OSHA standards used the former HCS criteria for flammability. To ensure consistency, OSHA has adopted conforming changes to those standards.\textsuperscript{11} The HCS flammability criteria now conform to those of the Department of Transportation, which adopted GHS-based criteria years ago.

OSHA had proposed to add requirements not in GHS for “unclassified” hazards, including simple asphyxiants and combustible dust (and apparently pyrophoric gases; OSHA says it inadvertently omitted a definition of that term in the proposal). In the final rule, OSHA calls unclassified hazards “hazards not otherwise classified.” It has added definitions for “simple asphyxiant” and “pyrophoric gas” which serve as classification criteria, although no degrees of hazard are identified. The previous definition of “hazardous chemical” in paragraph (c) has been amended to cover these and other hazards as yet unclassified by GHS. “Hazardous chemical” now means “any chemical which is classified as a physical hazard or a health hazard, a simple asphyxiant, combustible dust, pyrophoric gas, or hazard not otherwise classified.” Most of the substantive HCS requirements apply to hazardous chemicals.

Combustible dust was particularly controversial during the rulemaking and during the review of the draft final standard by the Office of Management and Budget. Combustible dust is the subject of a rulemaking project which OSHA concedes is in the early stages.\textsuperscript{12} OSHA has interpreted the HCS to require warnings for combustible dust since at least 1986.\textsuperscript{13} In the final rule preamble, OSHA notes that it has provided guidance on combustible dust elsewhere,\textsuperscript{14} and that NFPA and others have done so also. The rule requires manufacturers of dust which is combustible as shipped or which could become combustible as used to provide warnings.\textsuperscript{15}

OSHA is continuing to advocate within the GHS decision-making process for adoption of classifications for simple asphyxiants, pyrophoric gases, and combustible dust.

\textsuperscript{10} The preamble to the proposed rule discussed the changes for flammable liquids in detail. See 74 Fed. Reg. 50280, 50416–17 (Sept. 30, 2009).
\textsuperscript{12} The most recent development published in the Federal Register is a 2010 notice of a “combustible dust Web Chat,” 75 Fed. Reg. 32142 (June 7, 2010). OSHA’s most recent Regulatory Agenda (published Jan. 20, 2012) places rulemaking on combustible dust among long-term actions.
\textsuperscript{13} See letter of Patrick R. Tyson, Acting Assistant Secretary of Labor, to Sen. Mattingly (Jan. 16, 1986), http://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=INTERPRETATIONS&p_id=19368 (“manufacturers of nuisance particulate are still required to perform a hazard evaluation and determine whether or not their products present any of the specific hazards covered by the HCS. OSHA has reason to believe that a number of these particulate[s] do present physical hazards, such as the potential for fire and explosion ….”).
\textsuperscript{14} OSHA cites its Combustible Dust National Emphasis Program Directive, CPL 03-00-008 (2008), http://www.osha.gov/OshDoc/Directive_pdf/CPL_03-00-008.pdf. That document defines “combustible dust” as “a combustible particulate solid that presents a fire or deflagration hazard when suspended in air or some other oxidizing medium over a range of concentrations, regardless of particle size or shape.”
\textsuperscript{15} See 77 Fed. Reg. at 17704-06.
Determining the degree of hazard is now part of the hazard classification process. Formerly, a chemical either did or did not have a particular hazard. Now, hazards are categorized by degree of hazard. For example, there are four categories of acutely toxic chemicals, with Category 1 being the most toxic and Category 4 the least.\textsuperscript{16} Carcinogens are to be classified as either Category 1 (known or presumed human carcinogen) or Category 2 (suspected human carcinogens). Where there is enough evidence, Category 1 carcinogens are to be classified as either Category 1A (known to have carcinogenic potential for humans, based largely on human data) or Category 1B (presumed to have carcinogenic potential for humans, based largely on animal data).\textsuperscript{17}

Formerly, a single positive study which was statistically significant and conducted in accordance with established scientific principles was enough to establish a health hazard for HCS purposes. Now, chemical manufacturers are directed to consider the weight of the evidence that is scientifically validated, including both positive and negative studies. However, a single positive study “may” justify classification. As before, no testing is required; only available information must be considered.

With this weight-of-the-evidence standard, characterization of a chemical as a carcinogen by IARC or NTP does not automatically mean that the chemical manufacturer must accept those designations. Instead, it may consider the evidence itself and come to a different conclusion in appropriate cases. For example, IARC and NTP consider all nickel compounds to be carcinogens. With CLP, the EU takes a different approach, assessing individual nickel compounds for carcinogenicity. Under the new rule, it may be possible to conclude that the weight of the evidence for some nickel compounds does not support a conclusion that they are carcinogens. Appendix A states that persons classifying chemicals for carcinogenicity “may treat” IARC and NTP designations “as establishing that a substance is a carcinogen or a potential carcinogen for hazard communication purposes in lieu of applying the criteria described herein.”

Appendix A uses a tiered approach for classifying the health hazards of a mixture. Those hazards are still determined on the basis of test data on the mixture as a whole, if available. Where such data are unavailable, which is usually the case, the old rule mandated that a mixture was considered to have the health hazards of all components present at or above the relevant thresholds (mainly 1%, with 0.1% for carcinogens). This requirement often led to overestimating the hazards by failing to take dilution into account. Under the new rule, bridging principles aim to obtain a more realistic estimate of the mixture’s hazards. Where there are data on ingredients and similar mixtures, the new rule allows extrapolation or bridging of data to classify the mixture. Where such data are not available, the criteria address how to classify mixtures based on thresholds specific to that hazard. Applying the classification criteria for mixtures is a complicated task.

\textsuperscript{16} OSHA did not adopt the GHS provisions for Category 5 for acute oral, dermal, and inhalation toxicity; Category 3 skin corrosion/irritation; and Category 2 for aspiration hazard. Chemical manufacturers may use these omitted categories.

\textsuperscript{17} Appendix F provides approximate equivalences between GHS, IARC, and NTP carcinogen classifications. For example, a GHS Category 2 carcinogen generally corresponds to an IARC Group 2B carcinogen.
For most health hazards, the threshold (called a “cut-off value/concentration limit”) for identifying the relevant ingredients to be considered is 1%. A 0.1% cut-off value/concentration limit is used for carcinogens, respiratory and skin sensitizers, germ cell mutagens, and reproductive toxicants. For some health hazards different cut-off values/concentration limits are used depending on the degree of hazard and other factors, such as pH. For example, for target organ toxicity the cut-off values/concentration limits are 1% for Categories 1 and 2 and 20% for Category 3. Where the classifier has reason to suspect that an ingredient present at less than the standard cut-off value/concentration limit will affect the classification of the mixture, that ingredient must be included in classifying the mixture. In rare cases, OSHA will allow a higher cut-off value/concentration limit.

For acute toxicity, where an ingredient present at ≥ 1% has unknown toxicity, the hazards of the mixture may be calculated using only information on the ingredients for which hazards are known, in which case the label and SDS must state that X% of the mixture consists of an ingredient or ingredients of unknown toxicity.\(^\text{18}\)

**Labels**

Another big change to the HCS is the new requirements for labels, which are addressed in paragraph (f) and Appendix C. Formerly, a label had to include the identity of the hazardous chemical, “appropriate hazard warnings,” and the name and address of a responsible party. Now the label must include the product identifier, a signal word, standardized hazard statements, one or more pictograms, standardized precautionary statements, and the name, address, and telephone number of a responsible party. The selection of the specific label elements for a chemical depends on the classification of the chemical.

As before, the label must include the name of the chemical (which may be the product name). GHS also calls for disclosure of all ingredients that contribute to any of several health hazards or, at the choice of the national authority, disclosure of all ingredients. For workplace chemicals (those within OSHA’s jurisdiction), GHS allows the national authority to give suppliers discretion to disclose ingredient identities only on the SDS. OSHA has chosen not to require ingredient identities to appear on labels.

Only two signal words appear in GHS and thus in this rule: “Danger” and “Warning.” “Caution” is not allowed. EPA requires use of “Caution” on some pesticide labels, but the HCS labeling requirements do not apply to pesticides.

Appendix C contains standardized hazard statements for 29 physical and health hazards from GHS. Selection of particular statements depends on the hazard classification. For example, Category 1 and 2 acute oral hazards use signal word “Danger” and hazard statement “Fatal if swallowed;” Category 3 acute oral hazards use signal word “Danger” and hazard statement “Toxic if swallowed;” and Category 4 acute oral hazards use signal word “Warning” and hazard statement “Harmful if swallowed.”

\(^{18}\) 77 Fed. Reg. at 17793, 17826, 17884.
As noted above, where an ingredient with unknown acute toxicity is used in a mixture at a concentration ≥ 1%, and the mixture is not classified based on testing of the mixture as a whole, a statement that X% of the mixture consists of ingredient(s) of unknown acute toxicity is required on the label.

The proposed rule would have required descriptions of unclassified hazards on the label. The final rule drops that general requirement, so no label statement is required for hazards not otherwise classified except where OSHA has prescribed label statements. OSHA has prescribed the signal word, hazard statement, and pictogram for three hazards not otherwise classified, simple asphyxiants, pyrophoric gases, and combustible dust. For example, combustible dust takes signal word “Warning” and hazard statement “May form combustible dust concentrations in air.” Those products that are shipped in dust form and present a combustible dust hazard in that form when used downstream must label the containers for that hazard. Those that are shipped in a form that is not yet a dust must provide a label to customers at the time of initial shipment if, under normal conditions of use, the chemicals are processed in a downstream workplace in such a way that they present a combustible dust hazard. Also, workplace labeling is required where combustible dust hazards are present.¹⁹

GHS has nine pictograms. OSHA has adopted eight of these, omitting the pictogram for environmental hazards.²⁰ Each of these pictograms consists of a symbol in black on a white background within a red square frame set on a point (i.e., a red diamond). The specific pictograms on a label are to be determined based on the hazard classification of the particular chemical. For example, Category 1 through 3 acute oral toxins take the skull-and-crossbones pictogram, while Category 4 acute oral toxins take the exclamation point pictogram. No pictogram is required for the hazard of combustible dust. A commenter noted that the pictograms are not self-explanatory; OSHA requires employees to be trained on them by December 1, 2013.

The frame for the pictogram must be red. GHS gives national authorities discretion to allow a black border instead of red for products that are not exported, but OSHA decided that a red frame would help call attention to the pictogram. Thus, red frames are required, and all labels must be printed on color printers. OSHA estimates that the costs to purchase upgraded label printing equipment and supplies or to purchase pre-printed color labels to meet this requirement will be $24.1 million.

¹⁹ See 77 Fed. Reg. at 17883.
²⁰ The OSHA pictograms are captioned flame (to signify flammables, pyrophorics, self-heating, emits flammable gas, self-reactives, and organic peroxides); flame over circle (to signify oxidizers); exclamation mark (to signify irritant (skin and eye), skin sensitizer, acute toxicity (harmful), narcotic effects, and respiratory tract irritant); exploding bomb (to signify explosives, self-reactives, and organic peroxides); corrosion (to signify skin corrosion/burns, eye damage, and corrosive to metals); gas cylinder (for gases under pressure); health hazard (to signify carcinogen, mutagenicity, reproductive toxicity, respiratory sensitizer, target organ toxicity, and aspiration toxicity); and skull and crossbones (to signify acute toxicity (fatal or toxic)).
GHS notes that precautionary statements have not been harmonized, but OSHA requires their use anyway. Selection of particular statements is based on the hazard classification. Precautionary statements fall into one of four categories: prevention, response, storage, and disposal. Key statements must be in bold print. Given that only a limited number of precautionary statements are provided for a vast number of potential circumstances, the listed statements include indications where information is to be added or deleted as appropriate.

Note that the new rule requires the telephone number of a responsible party to appear on the label. Under the old rule, the telephone number only had to appear on the MSDS.

Supplementary information on the label is limited to when it provides further detail and does not contradict or cast doubt on the validity of the standardized hazard information.

The labeling of small packages was an issue. GHS allows national authorities to omit information from the labels of small packages where the volume of the hazardous component is low or there is no likelihood of harm to health. OSHA decided not to adopt a small package exception. Instead, OSHA will continue its previous practice of allowing “practical accommodations,” such as tags or markings, where the containers do not accommodate a regular label, and will consider whether additional guidance is necessary.21

GHS calls for labels to be updated “promptly” when new information is obtained. The old rule had a provision requiring labels to be updated within three months after obtaining significant new information, but OSHA has stayed that requirement for years. In the new rule, labels must be updated within six months of acquiring significant new information. If a chemical is not currently being produced or imported, the label must be updated before the chemical is shipped again.

Safety Data Sheets

SDSs are addressed in paragraph (g) and Appendix D. SDS requirements apply to chemicals with classified hazards and to those with a hazard not otherwise classified.

The new rule requires use of the 16-section SDS which has been in increasingly common usage since the original publication of ANSI Z400.1 in 1993.22 Due to jurisdictional limitations, OSHA encourages but does not require the use of section 12, ecological information; section 13, disposal considerations; section 14, transport information; and section 15, regulatory information. SDSs must include those headings in order, however.

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21 See 77 Fed. Reg. at 17727.
22 The 16 sections are: section 1, identification; section 2, hazard(s) identification; section 3, composition/information on ingredients; section 4, first-aid statements; section 5, fire-fighting measures; section 6, accidental release measures; section 7, handling and storage; section 8, exposure controls/personal protection; section 9, physical and chemical properties; section 10, stability and reactivity; section 11, toxicological information; section 12, ecological information; section 13, disposal considerations; section 14, transport information; section 15, regulatory information; and section 16, other information, including date of preparation or last revision.
In section 1, identification, new data elements include recommended uses and restrictions on use, and an emergency telephone number (in addition to the telephone number of the responsible party).

In section 2, hazard(s) identification, the hazard classifications must appear, along with a signal word, hazard statement, and precautionary statement, and pictogram. The pictogram may appear in black and white, so, unlike the label, the SDS need not be in color. Where an ingredient with unknown acute toxicity is used in a mixture at a concentration ≥ 1%, and the mixture is not classified based on testing of the mixture as a whole, a statement that X% of the mixture consists of ingredient(s) of unknown acute toxicity is required in section 2.

The section 2 requirements have particular relevance for pesticide manufacturers, since their SDSs under the new rule may be inconsistent with their EPA-accepted labels under the Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA). For example, EPA requires the use of “Caution” as a signal word in some circumstances. The FIFRA label is carefully negotiated with EPA, and those label statements may differ somewhat from the SDS statements required by the new rule. EPA has not yet taken significant steps to harmonize its FIFRA requirements with GHS. OSHA acknowledged comments on this point. Nevertheless, it found no preemption of its HCS requirements by FIFRA, and it decided not to exempt pesticides from the SDS requirements. Based on meetings with EPA, OSHA predicted that EPA will issue guidance, such as a Pesticide Registration Notice, on how to develop an SDS under the new HCS that does not conflict with the pesticide label.23

In section 3, composition/information on ingredients, a new data element for mixtures is “the concentration (exact percentage)” of all ingredients which are classified as health hazards. Where there is batch-to-batch variability, a concentration range may be used instead. Concentration information may be claimed confidential under the trade secret provisions of paragraph (i).

For section 8, exposure controls/personal protection, OSHA had proposed to delete the explicit requirement to report the ACGIH TLVs of ingredients and only require the OSHA permissible exposure limit plus other occupational exposure limits recommended by the chemical manufacturer. In the final rule, OSHA has retained the explicit requirement to include the ACGIH TLVs, despite arguments under the Information Quality Act and the Administrative Procedure Act.24

Section 9, physical and chemical properties, specifies 18 properties to be addressed, and section 10, stability and reactivity, specifies 6 characteristics to be addressed. If no information is available for a particular item, that must be indicated.

24 See 77 Fed. Reg. at 17731-34.
Section 11, toxicological information, adds a requirement for numerical measures of toxicity (such as acute toxicity estimates, e.g., LD$_{50}$s).

As under the old rule, SDSs under the new rule must be updated within three months of obtaining significant new information, or before shipping them if currently not being produced or imported.

Conclusion

The original HCS significantly increased the amount of information available to downstream customers and their employees, but providing that information required a substantial effort by chemical manufacturers. Similarly, adapting to the new HCS will require chemical manufacturers to devote substantial resources. Those that have already developed classifications, labels, and SDSs for their products under CLP and REACH will find the challenges considerably less, although some review will be needed to address OSHA-specific requirements.

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