OSHA’s Final Rule to Revise HCS: An IH Perspective

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In this interview, Pam Perrich provides her perspective on OSHA’s final rule to revise its Hazard Communication Standard (HCS) and discusses how a revised HCS standard could improve the transportation, handling and use of chemicals worldwide.

IHPS: Please provide a brief description of your professional background and of your position as an industrial hygienist with Naval Hospital Pensacola.

PP: I have been an industrial hygienist for the Navy for 28 years. I am a civil servant, not an active-duty service member.

My 28 years’ experience have been split between Naval Hospital Pensacola in Pensacola, FL, and the Naval Medical Center, Portsmouth, in Portsmouth, VA. My time in Portsmouth was actually sandwiched in between two tours of duty in Pensacola.

Since moving back to Pensacola in 1996, I have managed the Naval Hospital Pensacola’s Industrial Hygiene Department; my staff and I provide comprehensive industrial hygiene support to all Navy and Marine Corps activities in Northwest Florida, Alabama, Mississippi, Louisiana, Tennessee, Indiana and Kentucky. That adds up to about 40,000 people carrying out the Navy’s mission every day. So, ours is always a “fine Navy day.”

IHPS: OSHA has issued a final rule to revise its HCS (29 CFR 1910.1200) to conform to the United Nations’ Globally Harmonized System of Classification and Labeling of Chemicals (GHS). How will this affect SH&E professionals working in the U.S.? How will their practices and methods change?

PP: This is a good thing for all SH&E professionals. We will have more information about the hazardous materials used in the workplace readily available and so will the workers who actually use the hazardous materials.

Training will be required to educate workers about changes to product labels and safety data sheets (SDSs), and each workplace will need to update its material safety data sheets (MSDSs) to the new SDSs.

IHPS: As an industrial hygienist working in the U.S., what benefits do you believe the final rule will provide?

PP: The HCS affects more than 5 million workplaces and 43 million workers in the U.S. Better information to workers will likely result in reduced illnesses and injuries. In fact, OSHA estimates that 521 injuries and 43 fatalities can be avoided each year as a result of the changes to the HCS.

OSHA further estimates that the monetized health and safety benefits of the final rule are $250 million annually and that the annualized cost reductions and productivity gains are $507 million annually. In addition, OSHA anticipates that the final rule will generate substantial (but unquantified) savings from simplified hazard communication training and from expanded opportunities for international trade due to a reduction in trade barriers.

Of course, none of the savings can be realized until the 43 million workers in those 500 million workplaces have been trained on the new SDSs and HCS.

IHPS: Workers, emergency responders and those involved in the preparation of labels, SDSs and hazard communication strategies will need to be trained in the provisions of the final rule. How can employers ensure that the training provided is consistent and effective?

PP: Training is a big piece of the new HCS, and the effective date for completing training is Dec. 1, 2013. There is much to do and not much time in which to do it. To ensure that training is consistent and effective, those responsible for providing training must first educate themselves then...
lay out a plan for training the rest of their workforce. The new SDSs will not come in all at once; they will slowly eek in until, and probably past, the June 2015 deadline.

SH&E professionals have long been tasked with training and know that delivering effective training is not easy. Try to keep the training interactive, engaging and fun. With Baby Boomers working alongside Gen Y-ers and visual learners stuck in a classroom of auditory learners, everyone will not always have fun, but it helps to understand your audience and to adapt the training to fit their needs as much as possible. ASSE has put on some great professional development conference sessions and webinars on educating the adult learner that have really been helpful to me.

Trainers must also know that their message has reached the audience. Whether a written test of knowledge or a demonstration of knowledge, always include some way to know that your training was effective and that workers really know what they need to know to be safe on the job.

**IHPS: What impact will the use of pictograms and signal words on labels have on low-literacy workers in the U.S.?**

**PP:** Pictograms and signal words will be a boon to low-literacy workers. With the training to recognize what the pictograms mean, workers can know at a glance what dangers any hazardous material presents, and knowing what hazards are present is the first step to protecting themselves. The same holds true with signal words. With proper training, even a worker who cannot read the whole hazardous material label or SDS could be taught to recognize the signal words (“danger” or “warning”), which must now be on labels and SDSs. Programs for low-literacy workers will not work if these workers are not identified and specific programs put in place to help them recognize pictogram and signal words.

**IHPS: How will SDSs’ format change?**

**PP:** The content will get longer, and the name will get shorter. Now we have just SDSs, not MSDSs. SDSs will also have a few extra sections for a total of 16 sections. The sections are:

- **Section 1** Identification
- **Section 2** Hazard(s) identification
- **Section 3** Composition/information on ingredients
- **Section 4** First-aid measures
- **Section 5** Firefighting 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
- **Section 16** Other information

Most of these sections are not new; we have always had the information in Section 1-11 on the old MSDSs. New for these sections is the format in which the information is presented and just how much information is presented.

For example, in Section 9 on chemical/physical properties, the format and required information are as follows:

- a) appearance (physical state, color etc.);
- b) odor;
- c) odor threshold;
- d) pH;
- e) melting point/freezing point;
- f) initial boiling point and boiling range;
- g) flash point;
- h) evaporation rate;
- i) flammability (solid, gas);
- j) upper/lower flammability or explosive limits;
- k) vapor pressure;
- l) vapor density;
- m) relative density;
- n) solubility(ies);
- o) partition coefficient:
- p) octanol/water;
- q) autoignition temperature;
- r) decomposition temperature;
- s) viscosity.

This is more information than was ever available on most MSDSs, and it will be great for SH&E professionals to have this information at their disposal.

The biggest change is the requirement for pictograms and signal words on SDSs and on hazardous material labels. Pictograms are words that illustrate a product’s hazard. We see them in common use today. Everyone recognizes a flame as the illustration of something flammable or the skull and crossbones symbol as something...
really dangerous. SDSs under the new HCS use these pictograms to illustrate the hazards. Here are some examples of the pictograms:

Sections 12 to 15 are completely new, but OSHA considers them non-mandatory and will not enforce compliance with those sections.

Hazard classification must be on the SDS and on the label. The manufacturer or importer of each hazardous material must determine the hazard classes and the category of each class.

This includes its physical hazard:
• explosives;
• flammable gases;
• flammable aerosols;
• oxidizing gases;
• gases under pressure;
• flammable liquids;
• flammable solids;
• self-reactive substances;
• pyrophoric liquids;
• pyrophoric solids;
• self-heating substances;
• substances, which, in contact with water, emit flammable gases;
• oxidizing liquids;
• oxidizing solids;
• organic peroxides;
• corrosive to metals.

Its health hazard:
• acute toxicity;
• skin corrosion/irritation;
• serious eye damage/eye irritation;
• respiratory or skin sensitization;
• germ cell mutagenicity;
• carcinogenicity;
• reproductive toxicity;
• target organ systemic toxicity, single exposure;
• target organ systemic toxicity, repeated exposure;
• aspiration toxicity.

And its environmental hazard:
• hazardous to the aquatic environment;
• acute aquatic toxicity;
• chronic aquatic toxicity;
• bioaccumulation potential;
• rapid degradability.

Signal words are not that new, but under the revised HCS, they are limited to just two: DANGER (the more severe hazard) and WARNING (the less severe hazard). One of these words, as appropriate, must also be on the SDS and on the product label.

So as you can see, big changes have occurred to SDSs and to product labels. We will see a new SDS for every hazardous material in the workplace and a new label on every container of hazardous material.

**IHPS: Does the final rule make any provisions for control banding? Why or why not?**

**PP:** Control banding was not included in the HCS. Both ASSE and NIOSH submitted comments to OSHA in support of control banding being included in the revised HCS, but in the end, OSHA did not include it for two primary reasons. First, OSHA believes that control banding is still somewhat evolving and that it is not itself harmonized. Second, OSHA also felt that it was not in keeping with its edict to limit changes to the HCS to those required to align with GHS and to be as consistent as possible with GHS’s provisions. OSHA supports the concept of control banding but says “. . . it is premature to consider the approach as a mandatory requirement and part of the revised HCS” (from the Federal Register, page 309).

**IHPS: ACGIH’s threshold limit values (TLVs) will now need to be referenced on SDSs. Based on your experience as an industrial hygienist, how helpful will it be to have TLVs listed on safety data sheets from now on?**

**PP:** As an industrial hygienist, it will be very helpful to have TLVs on the safety data sheets. Even if you do not use TLVs as your company’s occupational exposure limits, it is great to be able to compare the TLV to OSHA’s permissible exposure limits (PELs). SH&E professionals know PELs are quite dated and in need of a revision; most are based on the 1968 TLVs. It makes sense to look at other exposure standards besides just PELs when assessing your workforce’s occupational health. TLVs are a great tool to go with PELs.

**IHPS: In what ways will a revised HCS standard improve transportation, handling and use of chemicals worldwide?**

**PP:** It will make it safer! No longer will we use two labeling schemes—everyone will use the same system. Everything will have the same labels, warnings and other placards, and quite frankly, the new scheme is much clearer. I have often seen semi-trucks on the highway carrying a tank car or have been stopped at a railroad crossing and have seen a tank car with only a number to identify what is in the car. The new HCS eliminates all of that. With a signal word, hazard classification and pictogram, everyone will know what is in those cars.

**IHPS: What should consumers be aware of in light of this final rule?**

**PP:** Consumers need to be educated about GHS too. They will soon see pictograms and signal words on some consumer products, like bleach, oven cleaner and drain cleaner. The Consumer Products Safety Commission is working to enact certain sections of the GHS though the HCS itself does not apply to them or to consumer products.

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