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Health and Safety Committee

NEW OSHA Web Tools for Identifying Safer Chemical Alternatives

The H&S Committee thanks Monona Rossol for highlighting these resources in the November 2013 Vol. 27, No. 11 issue of ACTS FACTS. Check out Arts, Crafts and Theater Safety at www.artsandcraftstheatersafety.org and consider subscribing to its monthly newsletter for important information on worker health and safety!

Reducing or eliminating the hazards of your conservation chemicals at the source requires safer alternatives for the chemicals you use at work. To best protect your health, your conservation workplace needs a process for selecting chemicals and processes on the basis of their hazards and performance per your treatment standards.

One key tool is the **Job Hazard Analysis (JHA)**, a technique that focuses on the relationship between the worker, the task, the tools, the hazardous materials used, and the work environment, including engineering controls already in place. It usually is the responsibility of the supervisor to initiate a JHA review of the processes she or he manages. However, the job-specific JHA itself is developed together between the supervisor and the persons conducting the task. This relationship ensures that all hazards are identified and mitigated in a practical and efficient way before the task begins. Both the employee and the supervisor “own” this JHA and need to be pro-active in periodically reviewing the JHA for effectiveness and making changes to improve the task safety.

Committee member and Safety Professional J. R. Smith will be offering JHA tutorials at the 2014 AIC Conference. In the meantime, check out the OSHA how-to-do a-JHA Publication: <https://www.osha.gov/Publications/osha3071.html>.

Two new OSHA resources will help you start the JHA process with tools and methods for comparative chemical hazard assessments:

Transitioning to Safer Chemicals: A toolkit for employers and workers.

https://www.osha.gov/dsg/safer_chemicals/index.html
OSHA has developed this step-by-step toolkit to provide employers and workers with information, methods, tools, and guidance on using informed substitution in the workplace. It offers links to a number of charts comparing chemical alternatives safe for human health or the environment. This toolkit claims to be applicable to all types of businesses and workplaces. It is extensive but if you set aside some time with your co-workers to go through the steps, you should come away with useful suggestions for safer substitutes and with questions about how your processes might be changed to reduce hazards.

Permissible Exposure Limits – Annotated Tables

<https://www.osha.gov/dsg/annotated-pels/>
[Edited from the OSHA website] OSHA recognizes that many of its approximately 400 permissible exposure limits (PELs) are outdated and inadequate for ensuring protection of worker health, based in part on scientific data and medical monitoring experiences. Most of OSHA’s PELs were issued shortly after adoption of the Occupational Safety and Health (OSH) Act in 1970, and have not been updated since that time. Indeed, OSHA’s Hazard Communication standard (29CFR1910.1200) requires that safety data sheets list not only the relevant OSHA PEL, but also the American Conference of Governmental Industrial Hygienists Threshold Limit Values (ACGIH TLV) and any other exposure limit used or recommended by the chemical manufacturer, importer, or employer preparing the safety data sheet.

To provide employers, workers, and other interested parties with a list of alternate occupational exposure limits (OELs) that may serve to better protect workers, OSHA presents annotated PELs tables including a side-by-side comparison with the California/OSHA PELs, the NIOSH Recommended Exposure Limits (RELs), and the ACGIH TLVs.

Important Explanations of these Standard-Setting Organizations!

Cal/OSHA, NIOSH, and ACGIH have OELs in addition to those listed in the annotated tables. The annotated tables contain links to the complete OEL lists from Cal/OSHA and NIOSH. ACGIH values are not publicly available but must be purchased from them. The tables list air concentration limits, but do not include notations for skin absorption or sensitization. For the most current OELs and information on notations such as skin absorption, users should consult complete listings and explanations from Cal/OSHA, NIOSH, and ACGIH that can be found in detail on <https://www.osha.gov/dsg/annotated-pels/>.

These decision-making tools can be of great use to conservators trying to find safer chemical alternatives. Keep in mind, though, that much of the safety related to a chemical’s use is exactly that:

- HOW are you using/handling that chemical?
 - Under a fume hood?
 - With proper gloves (which may need to be a different material now that you have changed chemicals)?
 - With proper spill control materials nearby?
- And, never forget the importance of periodic observations of worker practices and re-evaluations of tasks and materials to improve the effectiveness of your safety program!

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Have a question about health and safety in your conservation work? Send it to us at [HealthandSafety \[at\] conservation-us.org](mailto:HealthandSafety@conservation-us.org).