

Computers

by Michael J. Blotzer, MS, CIH, CSP

Taking Control

What do you do to protect workers from hazardous materials that have no existing exposure limits? Control Banding offers a simplified technique for establishing controls that both safety and health professionals and company managers can utilize.

Protecting workers against exposure to hazardous materials isn't easy. Only a small fraction of the estimated 650,000 chemicals have exposure guidelines or regulatory exposure limits. Many regulatory exposure limits are so old they may not protect worker health.

Then there's the problem of reaching small- and medium-sized companies. Even if every chemical had a protective exposure limit, few small- and medium-sized businesses have the expertise to evaluate employee exposure and establish appropriate controls. While enlightened employers realize effective health and safety programs enhance the bottom line, too few small employers make this connection. They see little incentive to invest in an occupational hygienist.

These are not new problems. They've been with us for decades. However, help may finally be on the way.

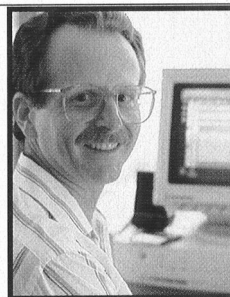
The United Kingdom's Health and Safety Executive (HSE, www.hse.gov.uk) and the International Labor Organization (www.ilo.org) are taking an innovative approach to worker protection – control banding.

Control banding uses a simplified risk assessment to identify appropriate controls for protecting workers from hazardous materials. It's a risk assessment that does not require an occupational health and safety professional; a risk assessment designed for the small business owner, line supervisor or employee.

Three rating factors lie at the heart of a control banding risk assessment – the

chemical's hazard group, the amount used and the material's ability to become airborne.

A chemical's hazard group, designated by the letters A through E, is based on the chemical's health effects. Hazard group A, the least hazardous, includes simple irritants or chemicals with limited acute toxicity. At the other extreme is Group E, the most dangerous chemicals, like known carcinogens or respiratory sensitizers.



A chemical's quantity rating is either small, medium or large. "Small" applies to chemicals used in milliliter or gram quantities. "Medium" applies to kilograms and liters of material. If the operation involves tons or cubic meters of material, it qualifies as "large."

A liquid's ability to become airborne is based on its boiling point. Liquids with boiling points below 50 C are rated "high." A liquid with a boiling point above 150 C qualifies as "low." Liquids with boiling points in between are "medium."

These three factors – the hazard group, amount used and ability to become airborne – determine one of four levels of control required for worker protection (Figure 1):

1. General ventilation and good work practices
 2. Engineering controls
 3. Process containment
 4. Special, seek professional help
- Detailed control guidance sheets help the employer implement specific controls associated with each band.

Control banding is gaining momen-

Amount used	Low dustiness or volatility	Medium volatility	Medium dustiness	High dustiness or volatility
Hazard group A				
Small	1	1	1	1
Medium	1	1	1	2
Large	1	1	2	2
Hazard group B				
Small	1	1	1	1
Medium	1	2	2	2
Large	1	2	3	3
Hazard group C				
Small	1	2	1	2
Medium	2	3	3	3
Large	2	4	4	4
Hazard group D				
Small	2	3	2	3
Medium	3	4	4	4
Large	3	4	4	4
Hazard group E				
For all hazard group E, substances, choose control approach 4				

Figure 1. A control banding assessment uses a chemical's hazard group, the amount used and ability to become airborne to determine one of four levels of control.

tum. The HSE's control banding Web site, "COSHH Essentials" (www.coshh-essentials.org.uk), helps small to medium businesses comply with the British Control of Substances Hazardous to Health (COSHH) regulations. A COSHH Essentials control banding assessment takes only a few minutes using just seven Web pages (Figure 2).

The ILO sees control banding as a way to protect worker health and safety in developing countries (www.ilo.org/public/english/protection/safework

[/ctrl_banding](http://www.ilo.org/public/english/protection/safework/ctrl_banding)). Employers in developing countries may not have Internet access. So the ILO's Chemical Control Toolkit (www.ilo.org/public/english/protection/safework/ctrl_banding) uses a one-page work sheet to guide the employer through an assessment.

Germany's GTZ (Gesellschaft für Technische Zusammenarbeit) integrated the Chemical Control Toolkit in their Chemical Safety Pilot Project (www.gtz.de/chs/englisch/index.htm). Funded by the Federal German Ministry for Economic Cooperation and Development, the GTZ Chemical Safety Pilot Project focuses on improving chemical safety and sustainability in emerging countries. Designed for the Third World, GTZ's Chemical Management Guide (www.gtz.de/chs/dload/ChemGuide.zip) should be required reading for employers in developed countries.

The International Program on Chemical Safety (IPCS, www.who.int/pcs) recently announced its global implementation strategy and research agenda to create a Control Banding Occupational Risk Management Toolbox (www.ilo.org/public/english/protection/safework/ctrl_banding/strategy.pdf). The American Industrial

Hygiene Association (AIHA) and the National Institute for Occupational Safety and Health (NIOSH) serve on the IPCS International Technical Group driving this effort.

NIOSH is studying the application of control banding in U. S. industry (www.aiha.org/aihce04/handouts/rt223niemeier.pdf). The goal is to determine the effectiveness of control banding in different applications.

Every health and safety professional should have a basic understanding of control banding. The ILO SafeWork Chemical Control Banding Web site is the best place to come up to speed. First, review the ILO Chemical Control Toolkit PowerPoint presentation. Next, read the 17-page toolkit. Both documents are excellent control banding primers. Now visit the COSHH Essentials Web site and try your hand at a Web-based control banding assessment.

Globally Harmonized System for Hazard Classification and Labelling

Standard hazard rating systems simplify the control banding assessment. The COSHH Essentials system uses Eu-

ropean Union R-Phrases (www.bio.hw.ac.uk/edintox/RISKP.HTM). The ILO Toolkit uses either R-Phrases or the new Globally Harmonized System for Hazard Classification and Labeling (GHS) system.

The GHS is an international standard designed to replace existing hazard communication systems for worker, environmental, transportation and consumer safety (www.unecce.org/trans/danger/publi/ghs/officialtext.html). Adopted by the United Nations in December 2002, the GHS is scheduled to be implemented world-wide by 2008.

The unified GHS hazard classification system eliminates conflicting hazard classification criteria in existing governmental regulations. The GHS improves communication of chemical hazards while streamlining regulatory requirements. It is hoped that this reduced regulatory burden will promote international commerce.

Security Update

A new Trojan Horse infecting Web sites, *JS.Scob.Trojan*, surfaced in June. Infected sites permit thieves to record keystrokes from Microsoft Internet Explorer users. By recording keystrokes,

Figure 2. COSHH Essentials provides an easy-to-use Web-based control banding risk assessment.

the thieves can collect user passwords, credit card and Social Security numbers, and other personal information. The Trojan does not affect Macintosh and Linux users.

The Trojan takes advantage of a serious flaw in Microsoft Internet Explorer reported by the United States Computer Emergency Readiness Team (CERT) (www.kb.cert.org/vuls/id/713878). The CERT reports there is no way users can completely protect themselves from this vulnerability. Because of multiple problems with Internet Explorer, CERT recommends using other, secure Web browsers.

I haven't trusted Microsoft Internet Explorer in years. My wife uses Netscape Navigator (channels.netscape.com/ns/browsers/default.jsp) for Web and e-mail. My college student uses Opera (www.opera.com). I use Mozilla Firefox (www.mozilla.org/products/firefox) on my Windows XP system and Mozilla (www.mozilla.org/products

[/mozilla1.x](http://mozilla1.x)) on my Linux box.

It's nice not having to worry about the Internet Explorer security alert of the month. Not only are these browsers more secure, Opera and Firefox are much faster than Explorer.

So Strange It Must Be True

A sidewalk survey of commuters in London, England found that over 70 percent of people would reveal their computer password for a bar of chocolate (news.bbc.co.uk/go/pr/fr/-/1/hi/technology/3639679.stm).

How secure is your password? Even without trading the key to your account for a sweet treat, you need to make that password hard to crack. "Memorability and Security of Passwords, Some Empirical Results" (www.ftp.cl.cam.ac.uk/ftp/users/rja14/tr500.pdf) reveals that passwords based upon mnemonic codes are as easy to remember as simple passwords but as hard to crack as random passwords.

To construct a strong password, create a simple eight-word sentence. Take the initial or last letters of each word in the sentence for your password. Put some letters in upper case and add at least one number, punctuation or special letter to make the password harder to guess. **CH**

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