



Our Neighborhoods

Citizens, government and industry working to promote public understanding and involvement in chemical risk management

Explosive Dust: An Industry Hazard

As reported by correspondent Scott Pelley on CBS's *60 Minutes*, devastating factory dust explosions are becoming more and more prevalent. Since 1980, there have been over 350 factory dust explosions in the U.S., killing 133 people and injuring countless others. To date, there are at least 30,000 factories in the U.S. that are vulnerable to dust explosions. Vulnerable facilities include: wood processing and storage; grain elevators, bins and silos; flour and feed mills; metal powder manufacturing; chemical; plastics, starch, or candy producers; spice, sugar and cocoa production and storage; coal handling or processing; and pharmaceutical plants. The general consensus among industry professionals is that a lack of hazard recognition by companies and inspectors is undermining the few standards currently in place to prevent dust explosions.

According to the U.S. Chemical Safety and Hazard Investigation Board (CSB), five simultaneous conditions are required to cause a dust explosion: 1) combustible dust; 2) an oxidizer (air); 3) dispersion of dust; 4) a confined environment; and 5) an ignition source. The Occupational Safety and Health Administration (OSHA) 29 CFR 1910.1200 requires employers to provide information to their employees about the materials they are working with. Material Safety Data Sheets (MSDSs) are the form commonly adopted by companies to comply with this standard. Information contained in MSDSs should include potential health, safety, and environmental hazards, safe handling practices, and applicable regulatory information. However, the current OSHA regulations for MSDSs do not specifically address combustible dust. Consequently, many employees are not aware of the dangers to which they are exposed.

So what can be done to prevent dust explosions? The National Fire Protection

Association (NFPA) 654 standard recommends the following steps in order to minimize the hazard:

- Minimize surfaces where dust can accumulate;
- Frequently clean packaging areas to prevent dust from accumulating and becoming airborne; and
- Use dust-cleaning methods and tools that do not stir up clouds of dust.

Many dust explosions, such as the one in 2003 at West Pharmaceutical Services in Kinston, NC, that killed six people, are caused by the accumulation of dust in hidden areas such as above the suspended ceiling tiles. Fire code officials and insurance inspectors had inspected the West Pharmaceutical Services facility during the month prior to the explosion. However, neither group was sufficiently aware of combustible dust hazards to detect any potential problems. An investigation conducted by Carolyn Merritt of the CSB concluded that "OSHA had no effective regulation on its books to deal with explosive dust and inspectors routinely overlooked the potential hazard."

During a hearing with more than 20 experts in various fields conducted by the CSB in June 2005, Ms. Merritt declared that chemical dust explosions in the U.S. are still a "serious industrial safety problem and must be addressed."



On January 29, 2003, a dust explosion occurred at the West Pharmaceutical Services rubber-manufacturing plant in Kinston, NC, killing six employees and injuring 38.



Company Contacts

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Please call these
Alliance for Chemical Safety
industry contacts if you have questions
about chemicals in your neighborhood.

Free Household Hazardous Waste Dropoff Program

The Hamilton County Solid Waste Management District is sponsoring a free household hazardous waste collection program for Hamilton County residents through November 22 at Environmental Enterprise facilities located at:

- ▶ 4650 Spring Grove Ave
- ▶ 10163 Cincinnati-Dayton Road.

Hours are Tuesdays from 2-6 p.m., Wednesdays from 2-6 p.m., and Saturdays from 9 a.m. - 1 p.m. The facilities will be closed on August 30.

The District **will** accept the following items: paint, pesticides, fertilizers, solvents, lawn or pool chemicals, cleaners, batteries, prescription drugs, fire extinguishers, propane tanks, mercury, fluorescent bulbs, driveway sealer, gasoline, antifreeze, and motor oil.

The program **will not** accept radioactive materials, medical waste, explosives/ammunition, gun powder, heating oil tanks, tires, yard waste, unmarked cylinders, garbage, roofing materials, appliances, computers/electronics and fuel tanks.

For more information and details on computer recycling, call 513-946-7700 or visit www.hamiltoncountyrecycles.org.



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2008 Alliance Steering Team

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Emergency Response: Dale Farmer, Ohio EPA

Membership: Rob Paxton, Shepherd Chemical

Citizen Representatives: Marjorie Evert and Jack Loper

Treasurer: Bob Sharkey, Quest Diagnostics

Secretary: Open

If you are interested in participating on the Steering Team in any of the open positions, please contact Kim Lahman, ACS Coordinator, at (513) 612-3074.

Free Fluorescent Bulb Recycling

The Home Depot has announced that it will recycle energy-efficient, compact fluorescent bulbs (CFLs) for free at all of its nearly 2,000 stores across the U.S.

CFLs use up to 75% less energy and last 10 times longer than traditional incandescent light bulbs. However, proper disposal of the bulbs is important because they contain small amounts of mercury (less than 5 milligrams apiece). No mercury is released when CFL bulbs are in use and intact.

Our Neighborhoods Newsletter

This newsletter is a publication of the Alliance for Chemical Safety (ACS), a Greater Cincinnati non-profit organization dedicated to promoting chemical safety. ACS sponsors monthly public meetings on the third Wednesday of each month. Please visit our web site at www.acs-online.org or call us at (513) 612-3074 for meeting locations and times.

Read me for neighborhood news on chemical safety!

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