

Contributors



Ryan Parton

Ryan is a Courtenay-based writer who has covered a variety of topics for *WorkSafe Magazine*, including hearing safety, asbestos, and confined spaces. In this issue he covers the sawmill industry and the dangers of combustible dust (page 7).



Kathy Eccles

Kathy has been a long-time writer for WorkSafeBC. Working out of her home office on Vancouver Island, she still enjoys tackling health and safety topics. In this issue, she visited a forward-thinking autobody shop that takes a family approach to protecting its workers from sensitizers (page 12).



Gail Johnson

A health-conscious certified group-fitness instructor, Gail has written about everything from occupational asthma to new treatments for burn victims. In this issue, she covers the science of nanomaterials (page 14).



Jackie Wong

Jackie is a journalist and workshop facilitator in Vancouver. Her writing on race, urban health, and social justice has been published in magazines across North America. It was inspiring for her to step inside the minds of B.C. high schoolers while writing about the annual student video contest (page 21).

Ask an officer

Reducing the risk of combustible dust



Steve Tye

Occupational hygiene officer

Region: Richmond

Years on the job: 35

This month, WorkSafeBC occupational hygiene officer Steve Tye answers questions about the often overlooked hazard of combustible dust. Industry sectors that typically generate combustible dust — such as bakeries, metal foundries, and sawmill operations — need to recognize and control these risks, in order to prevent devastating workplace incidents.

Q. What is combustible dust and could it be in my workplace?

A. Combustible dust is a finely divided solid material that presents a fire or explosion hazard when dispersed and ignited in air. Wood dust is an obvious one, but there are many, many others, including:

- Agricultural products such as grain, sugar, cornstarch, flour, rice, and powdered milk
- Metals such as magnesium, aluminum, and zinc
- Materials such as plastics, textiles, rubbers, and various resins

The U.S. Occupational Safety and Health Administration (OSHA) has a helpful poster that lists many of the common sources of combustible dust on their website: www.osha.gov.

Q. How can dusts such as flour be dangerous to my staff?

A. Any workplace that generates or uses dust is potentially at risk. Materials such as flour can burn or explode if the particles in the air are the right size and in the right concentration. Less than a handful of fine dust can be enough to fuel an explosion under the right circumstances. The process happens rapidly and can produce extreme-pressure events that can blow out walls and destroy structures. It can be catastrophic for workers.

A lot of people call combustible dust “a hazard in plain sight.” It’s there, but the hazard is either underestimated or not understood. Serious dust explosions have occurred in many different types of workplaces and industries, including food production, chemical manufacturing, and pharmaceutical manufacturing. The first combustible-dust explosion I worked on was caused by metal dust.

Q. Our crew does housekeeping weekly. Shouldn't that eliminate combustible dust?

A. Not necessarily. In some circumstances, hazardous levels of dust can accumulate rapidly. Weekly cleanup may not be adequate. In addition, how you clean the dust can create an even greater hazard. Brooms or compressed air hoses can stir the dust particles into the air and worsen the situation. Use cleaning techniques that do not increase dust dispersion, such as vacuums that are approved for dust collection.

Q. We can see dust on our equipment. Where else is it commonly found?

A. There are many places people don't tend to look, and as a result there can be significant dust accumulations on or in them. Dust may migrate from its source to any horizontal surface, like pipes, ledges, beams, and light fixtures. Things that are at eye level or below are usually well attended to. But remember to look up. You may also have to take a flashlight and look in less obvious areas. In a multi-level workplace, dust can fall through cracks in the floor and accumulate on the ledges or fixtures below.

Q. What should I include in a combustible-dust program for my workplace?

A. Start with a risk assessment for fire and explosion. What activities produce combustible dust? Where can dust build up and become a fuel source? What are the possible ignition sources? Look for things like the potential for a spark, static electricity, or heat from a motor, or an overheated bearing on conveyors or similar equipment.

If you have any concerns that your dust may be combustible, have it tested by an accredited laboratory with the capability to test combustible dust.

Once you have identified the hazards, take steps to control them. The backbone of prevention is regular

cleanup and maintenance to keep your workplace as dust-free as possible. Here are some points to cover in your program:

- Control the dust at its source with a dust collection system that is properly designed, engineered, and built to a recognized standard. The National Fire Protection Association standards at www.nfpa.org provide relevant guidance.
- Safely clean all surfaces that accumulate dust regularly.
- Regularly check and maintain your equipment to minimize the risk of creating unintended ignition sources.
- Educate and train workers on the hazards of combustible dust, and supervise them to ensure they follow cleaning schedules and safe work procedures.
- Audit your program to ensure it's effective.

Q. Where can I get more information?

- A.** The following resources can help you:
- The Manufacturing Safety Alliance of B.C. offers free online training for managers and employers at www.safetyalliancebc.ca.
 - The Canadian Centre for Occupational Health and Safety has a fact sheet for common questions on combustible dust at www.ccohs.ca.
 - The U.S. Chemical Safety Board has a video on preventing devastating explosions caused by non-wood combustible dust at www.csb.gov.
 - Our website worksafebc.com also has many helpful resources, including guides and videos, hazard alerts and bulletins, and crew talks and toolbox meeting guides. Find them by searching for "combustible dust."

Looking for answers to your specific health and safety questions? Send them to us at worksafemagazine@worksafebc.com, and we'll consider them for our next Ask an Officer feature. ☺

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