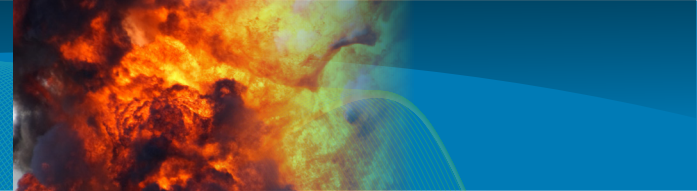


# Safety Facts: Combustible Dust\*



**Combustible dust** is a solid material composed of distinct particles or pieces which presents a fire hazard when suspended in air or some other oxidizing medium over a range of concentrations.

Combustible dust is an overlooked hazard that has the potential to cause serious injuries and catastrophic loss of facilities. Recent incidents include loss of life and facilities at both Babine Forest products, Burns Lake, and Lakeland Mills in Prince George, BC. These incidents can be avoided with training in identifying the hazard and removing it before it reaches unsafe levels.

Not all combustible dust incidents result in structural collapse. Combustible dust is also responsible for many smaller flash fires that result in burn injuries and downtime. The key is understanding the hazard so that it can be safely handled without incident.

## Characteristics of combustible dust

Combustible dust must be a material that is ignitable. Most organic products less than 500 microns (size of a grain of table salt) will be flammable and explosive.

The only sure way to confirm that a material is not combustible is through laboratory testing.

A combustible dust **fire** must have:

- Oxygen (air)
- Ignition (heat)
- Combustible dust (fuel)

A combustible dust fireball (**deflagration**) needs the above plus:

- Dispersion of the fuel particles

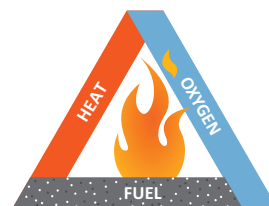
A combustible dust **explosion** requires everything above and:

- Confinement

## Preventative next steps

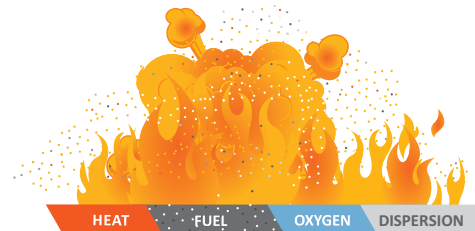
- Understand what materials in your process are combustible and which produce dust
- Determine if there are areas where dusts accumulate. Is it because of location (ceiling rafters) or process (leaking pipes)?

- Determine if your dust collection system is working as designed
- Implement a regular inspection and cleaning program to keep accumulated dust below hazardous levels
- Address combustible dust hazards on your workplace inspection checklist
- Ensure workers are trained to recognize hazardous levels of combustible dust
- Ensure workers are trained on the safe ways to clean areas with combustible dust accumulations
- Train workers on hot work procedures to ensure they do not create combustible dust fires.



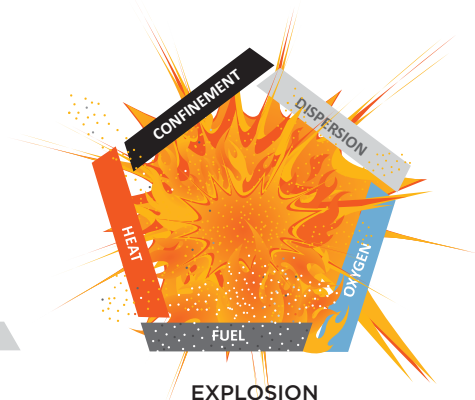
FIRE

Fuel + O<sub>2</sub> + Heat/Ignition



DEFLAGRATION

Fire + Dispersion



EXPLOSION

Deflagration + Containment



**For additional resources visit:**

Manufacturing Safety Alliance of BC: [safetyalliancebc.ca](http://safetyalliancebc.ca)

