

# Combustible Dust Safety

*This information for this Everyday Safety Tailgate Talk was sourced from information provided by the Occupational Safety and Health Administration*

Combustible dusts are fine particles that present an explosion hazard when suspended in air in certain conditions. A dust explosion can be catastrophic and cause employee deaths, injuries and the destruction of entire buildings. In many combustible dust incidents, employers and employees were unaware that a hazard even existed. It is important to determine if your organization has this hazard, and if you do, you must take action now to prevent tragic consequences.

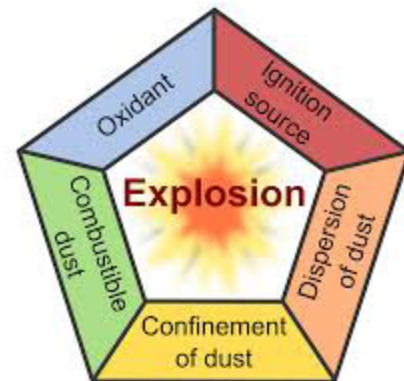
**Capture** dust before it escapes into a work area by using properly designed, installed, approved and maintained dust collection systems.

**Contain** dust within equipment, systems or rooms that are built and operated to safely handle combustible dust.

**Clean** work areas, overhead surfaces and concealed spaces frequently and thoroughly using safe housekeeping methods to remove combustible dusts not captured or contained.

## Dust Control Recommendations

- Implement a hazardous dust inspection, testing, housekeeping, and control program;
- Use proper dust collection systems and filters;
- Minimize the escape of dust from process equipment or ventilation systems;
- Use surfaces that minimize dust accumulation and facilitate cleaning;
- Inspect for dust residues in open and hidden areas at regular intervals;
- If ignition sources are present, use cleaning methods that do not generate dust clouds;
- Use only vacuum cleaners approved for dust collection; and
- Locate relief valves away from dust deposits.



### **Ignition Control Recommendations**

- Use appropriate electrical equipment and wiring methods;
- Control static electricity, including bonding of equipment to ground;
- Control smoking, open flames, and sparks;
- Control mechanical sparks and friction;
- Use separator devices to remove foreign materials capable of igniting combustibles from process materials;
- Separate heated surfaces from dusts;
- Separate heating systems from dusts;
- Select and use industrial trucks properly;
- Use cartridge-activated tools properly; and
- Use an equipment preventive maintenance program.

### **Injury and Damage Control Methods**

- Separation of the hazard (isolate with distance);
- Segregation of the hazard (isolate with a barrier);
- Deflagration isolation/venting;
- Pressure relief venting for equipment;
- Direct vents away from work areas;
- Specialized fire suppression systems;
- Explosion protection systems.

### **Action Item:**

To identify factors that may contribute to a explosion, OSHA recommends a thorough hazard assessment of:

- All materials handled;
- All operations conducted, including by-products;
- All spaces (including hidden ones); and
- All potential ignition sources.

### **Related Topics:**

- Fire Safety

### **Resources and References:**

Firefighting Precautions at Facilities with Combustible Dust OSHA Publication 3644-04-2013 (April 2013).

[https://www.osha.gov/Publications/OSHA\\_3674.pdf](https://www.osha.gov/Publications/OSHA_3674.pdf)

Hazard Alert: Combustible Dust Explosions OSHA Fact Sheet, (March 2008), 2 pages.

[https://www.osha.gov/Publications/OSHA\\_3644.pdf](https://www.osha.gov/Publications/OSHA_3644.pdf)

Combustible Dust in Industry: Preventing and Mitigating the Effects of Fire and Explosion OSHA Safety and Health Information Bulletin (SHIB) 07-31-2005, (July 31, 2005).

<https://www.osha.gov/dts/shib/shib073105.html>

Hazard Communication Guidance for Combustible Dusts OSHA Publication 3371-08, (2009)

<https://www.osha.gov/Publications/3371combustible-dust.html>

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[https://www.osha.gov/dte/grant\\_materials/material\\_listing\\_topic.html#c](https://www.osha.gov/dte/grant_materials/material_listing_topic.html#c)

