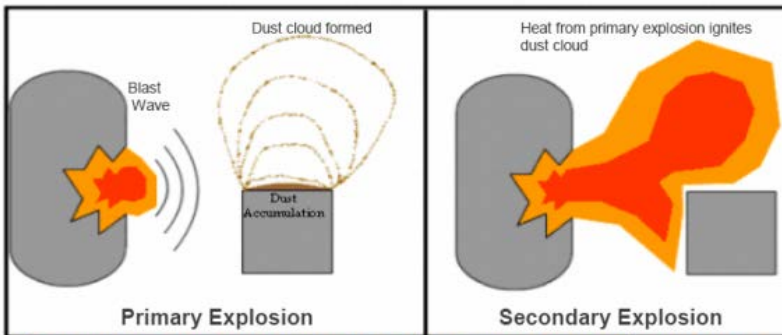




PROCESS SAFETY-The Imperial Sugar Dust Explosion

When products such as wood, rubber, plastics, chemicals, metals, and food products pass through machinery, they generate fine dust particles that become explosive when dispersed in a confined space. An explosion that takes place in an unvented enclosure can quickly become catastrophic, especially if combustible dust has accumulated in other areas of the facility. Shockwaves from the initial explosion can dislodge accumulated dust, and the fireball can ignite it, triggering a chain reaction of secondary explosions. Secondary explosions can be more powerful and destructive than primary explosions because of the increased concentration and quantity of airborne particles. The 2008 Imperial Sugar plant combustible dust explosion was an industrial accident that changed the conversation about worker safety and created a need for updated legislation. The explosion fatally injured 14 workers, severely injured many more, and destroyed most of the factory building.



Mechanism behind a propagating combustible dust explosion (Credit: OSHA)

Housekeeping is more than “pretty” - it’s about safety

Did you know?

- Accumulated materials, from your process and also packaging materials (plastic, paper/ cardboard, wood), become fuel in the event of a fire or explosion. Minimizing it through housekeeping is essential.
- Safety systems such as fire protection may not be designed for extra fuel, including dust or other spilled materials.
- Housekeeping is more than removing spills; other clutter such as unused equipment and packaging need to be properly stored.

Dust explosions have occurred in many different types of workplaces and industries, including:

- Grain elevators,
- Food production,
- Chemical manufacturing
- Woodworking facilities,
- Metal processing
- Recycling facilities (e.g. , paper, plastics, metals), and
- Coal-fired power plants.



Imperial Sugar Plant, 2008

Please Send your answers by email to:

hse@aimsgt.com

The best safety management tool for minimizing accident is to:

- Screen candidates and hire only safe workers
- Have a written comprehensive management plan
- Use only certified equipment’s
- Ensure good housekeeping

prepared By: Sadik pm

Last Month HSE Quiz

Answer: Option C

✓ Mohammed PK

✓ Jhansi Chava

Congratulations!

