



COMBUSTIBLE DUST

A dust is a fine powder of a combustible material, for example, flour, sugar cane dust, coal dust, metal dust, organic powder dust, fabric dust, wood dust etc.

When these particles become suspended in air or an oxygen rich environment, perfect conditions are created for a dust explosion. For a dust explosion to occur the upper explosive limit must be reached i.e. the concentration of dust to air ratio, which will result in combustion.

Once these flammable conditions find an ignition source, a dust explosion will occur.

In our factories the potential sources of ignition are static, hot work, friction, electric arc and self-ignition.

Why does the dust catch fire?

The surface area of the dust particle is large compare to the weight of the particle. These particles require less energy than the solid material to catch fire, for example, Aluminum in its solid state will not catch fire when exposed to an ignition source, however aluminum dust will catch fire.

When the dust is ignited in a confined space it usually results in catastrophic damage to the equipment and buildings.

How do we prevent explosive dust explosions?

As with the fire triangle, we have to remove one of the three, combustible material, oxygen or ignition source.

The following are options to eliminate dust explosions:

- Improve ventilation/extraction
- Wetting of area
- Inerting environment with gas.
- Good housekeeping
- Regular plant audits

Please visit the link below to view the dust explosion video in a sugar mill case study

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DUST EXPLOSION

“It can cost you your entire business operation”

“if you think its too much work to manage process safety, wait till you have an incident!”



News from around the world

Just for the FUN of it

Oil Tank Explosion

LIBERTY COUNTY, Texas (KPRC) - 4 February 2019, an oil tank explosion caused a huge fire and sent a plume of dark smoke over part of Liberty County.

Little is left of the tanks following the fires.

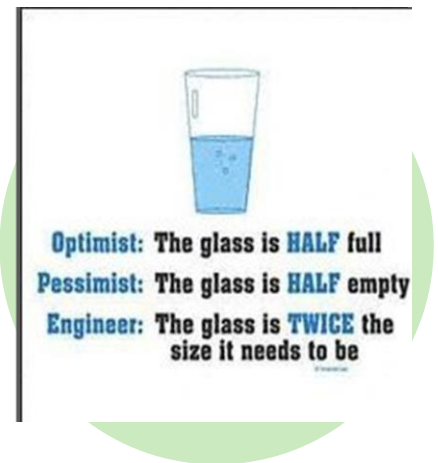
The incident was reported about 11 a.m. along County Road 2018 near Daisetta.

Several fire departments responded to the scene, some still remained even after the flames were extinguished.

A shelter-in-place order was issued for residents near the site. Shelter-in-place is the instruction given in an emergency where hazardous materials may have been released into the atmosphere. This precaution aims to keep people safe while remaining indoors.

Ammonia Gas Leak

LAUREL, MS (WDAM) - Workers at Wayne Farms in Laurel had to be evacuated from the facility after an equipment failure led to an ammonia leak late Sunday night, according to Jones County EMA Executive Director Paul Sheffield. Sheffield said medical teams were called to the processing facility to check out workers who may have been exposed to the hazardous gas. According to Sheffield, Wayne Farms followed proper safety protocol after the equipment failure. He said officials were going through the facility around midnight to make sure it was safe for workers to re-enter the building. Sheffield said a portion of Interstate 59 near the facility was shut down for 30 to 40 minutes during the initial response to the gas leak. All lanes of the interstate have since reopened. He added no homes were affected by the release.



Services offered:
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