

DUST EXPLOSIONS

As mentioned in the Editorial, we are introducing summaries of current articles from the technical press that we believe would be of interest. The internet links are also provided for readers who want more details. Below is the first of such articles. Tay Cheng Pheng is the contributor.

"Understand the hazards associated with Hazardous Combustible Dusts"

Combustible dust explosions have resulted in many catastrophic accidents in the past and have caused the loss of many lives and serious injuries.

Combustible dusts are fine particles such as organic or metal dusts, finely ground into very small particles, fibers, fines, chips, chunks, flakes, or a mixture thereof, with diameters of less than 420 microns.

There are five elements necessary for a dust explosion to occur, i.e. combustible dust, an ignition source, oxygen in the air, dispersion of enough concentrated dust particles, and confinement of the dust cloud.

To better understand the nature of hazardous combustible dust and learn how to prevent dust explosions, you can refer to "*Hazard Communication Guidance for Combustible Dusts*," published by the Occupational Safety and Health Administration (OSHA). The document describes how to identify and control hazardous dusts, how to prepare material safety data sheets and product labels, and how to train workers to detect and control hazardous chemicals. The guide can be found at: <http://www.osha.gov/Publications/3371combustible-dust.pdf>.

On the same subject, the Chemical Safety Board (CSB) in the US released a safety video on combustible dusts entitled "*Combustible Dust: An Insidious Hazard*."

The video includes computer animations of three dust explosions that were investigated by CSB. It also dissects the anatomy of an explosion. A clear message is that employers can prevent combustible dust explosions by following standards promulgated by the National Fire Protection Association(NFPA). The video is available at <http://www.csb.gov/videoroom/detail.aspx?VID=30>.

These documents are useful reference resources to help prevent potentially catastrophic dust explosions.