

We are



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Process Safety Dispatch

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Safety Feature: Self-Heating Hazards of Powders

"In simple terms, when the rate of heat generation exceeds the rate of heat loss, temperatures can rise and accelerate fast. If left unchecked, this can result in smoldering, fire and sometimes explosion."

When powders are heated, subtle sources of ignition can present themselves that are associated with the heating process - and perhaps the inherent instability of the powder being heated. Self-heating occurs when the powder temperature is raised to a level at which the rate of heat liberated by the exothermic reaction exceeds the rate of heat lost to surroundings. This can result in... [Continue reading](#)



Recent two-day customized Combustible Dust Safety Workshop held at Stonehouse Process Safety offices. We provide customized in-house training, public courses, webinars and mentoring programs for all skill levels. [Learn more](#)

Cases in the News: Grain Fire at Malt Facility

In October 2018 in the small market town of Stowmarket in the United Kingdom, nine fire engines and crew were called to a malting plant when a vigilant worker noticed that a grain intake screw conveyor appeared warmer than usual; he also thought he might be smelling burning. The source of the burning was traced to a screw conveyor, and fire crew worked to extinguish the fire. A spokesperson for the company, which exports malt and malt extract around the world, said "We are thankful to the fire service for their timely response. The exemplary vigilance of our operator and assistance from the fire service ensured this was a minor incident." [Source: East Anglian Daily Times]

Stonehouse Commentary

The humble screw conveyor is staple equipment for moving bulk product from A to B. Use it well and wisely and you have plant that not only will move grain or powdered materials through your facility, but it can also be designed to act as a choke in your dust explosion protection and isolation system – to stop a dust explosion propagating from one part of plant to another. But get it wrong and the screw conveyor can become a source of ignition in itself, creating heat or mechanical or electrical sparks from overheated bearings or equipment. If not shut down, the screw conveyor can also facilitate the transfer of smoldering material to downstream equipment such as hoppers and silos, with serious risk of dust explosion. Bearing design, maintenance and monitoring as well as proper bonding and grounding all affect the risk associated with screw conveyors.

The incident described above had limited impact due to a vigilant employee. Others have been less fortunate with smoldering material being conveyed downstream, only to initiate serious explosions, destroy plant and equipment and cause loss of life. Dust Hazard Assessment (DHA) provides a route to identifying and assessing hazards - and of mitigating the hazards.

Free On Demand Webinars

[Combustible Dust Hazards: Assessment, Prevention and Protection Including the Requirements of NFPA 652 \[watch\]](#)

[Electrostatic Hazards in Processing Industry: The Nature of the Problem and Practical Measures for its Control \[watch\]](#)

[Fire and Explosion Hazards: How to Identify and Control Them in Your Process \[watch\]](#)

---- *Mark your Calendar* ----

2019 Full Day Training Courses

Combustible Dust Hazards: Assessment, Prevention and Protection Including the Requirements of NFPA 652 [Learn more](#)

Wednesday, March 13, 2019
Location: New Brunswick, NJ

Electrostatic Hazards in Processing Industry: The Nature of the Problem and Practical Measures for its Control [Learn more](#)

Thursday, March 14, 2019
Location: New Brunswick, NJ

Fire and Explosion Hazards: How to Identify and Control Them in Your Process [Learn more](#)

Friday, March 15, 2019
Location: New Brunswick, NJ

Stonehouse Process Safety provides expert process safety consulting, testing, training, and litigation support services in the specialist areas of dust flash fires & explosions, gas & vapor flammability, electrostatic hazards, and thermal decomposition. Headquartered in Princeton, NJ, Stonehouse serves clients in the pharmaceutical, chemical, food, legal/insurance, metals, plastics, rubber and other process manufacturing industries.

www.stonehousesafety.com

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