

We are



Hello,

October 2020

Process Safety Dispatch

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Manually Transferring Powders: Explosion Risk Explained



Operators add small quantities of powders to process vessels in many different ways. Pouring from bags or drums, scooping, tipping... ; they use plastic drums, fiberboard drums, metal drums... ; they have plastic liners and bags, paper bags and hybrid bags... All of this is commonplace stuff in the process industries; in chemicals, food and beverage, pharmaceutical, flavor and fragrance, plastics and resins and many more.

In this article, we describe one specific case of an **explosion** caused when an **operator, adding powder to a vessel from a sack, was badly burned**. We then generalize the lessons learned to help **YOU** avoid fires and explosions caused by static electricity during the addition of powders to process vessels at **YOUR** facility.

First the case study....

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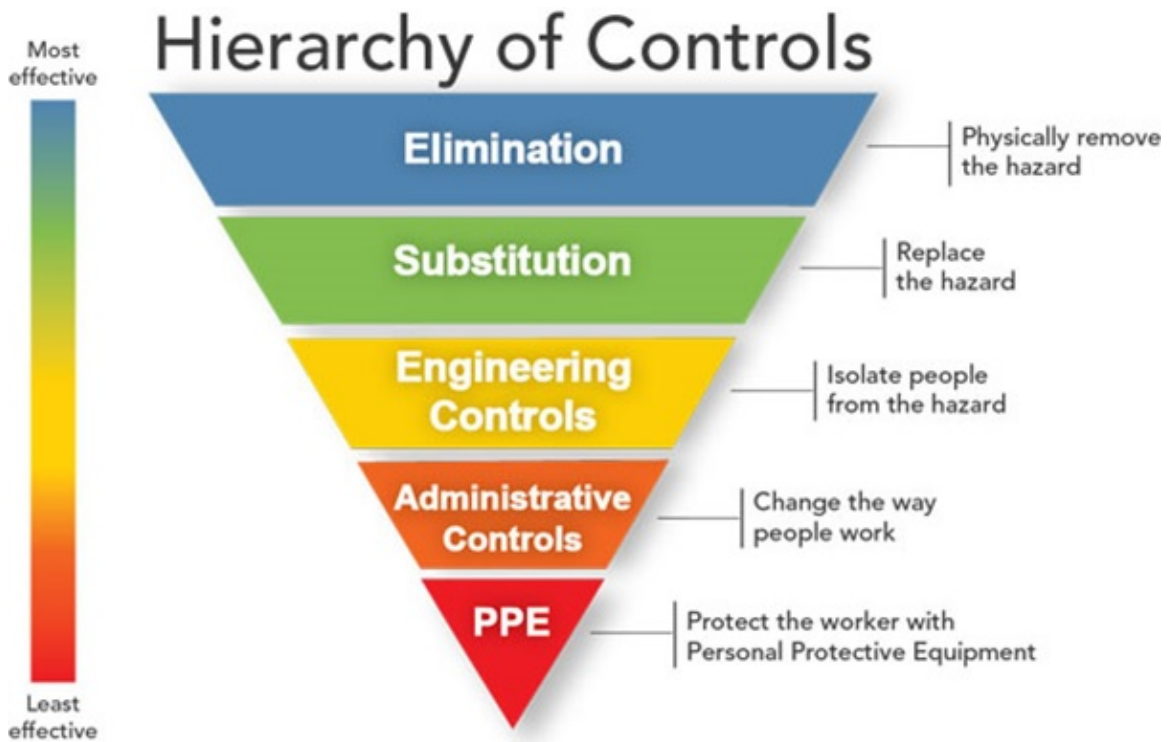
- Dust Explosion Prevention & Mitigation
- Control of Static Electricity
- Hazardous (Electrical) Area Classification
- Process Hazard Analysis
- Process Safety Management
- Fire and Explosion Hazard Assessment
- Incident Investigation
- Organizational Process Safety Competency Assessment

[Specialist Laboratory Testing](#)

- Combustible Dust Testing
- Electrostatic Testing
- Self-Heating / Thermal Instability Testing
- Flammability Testing of Gases & Vapors



Hierarchy of Controls in Process Safety



Process safety focuses on preventing fires, explosions, and accidental chemical releases in process facilities that handle hazardous materials. Occupational safety and health primarily cover the management of personal safety. Sometimes, these two fields of industrial safety can learn from each other. In this piece we look at the principles of 'Hierarchy of Control' as laid out by NIOSH [ref 1] and see how these principles can be applied to process safety – specifically to the field of explosion prevention and protection.

Process Safety is all about protecting people, plant, the environment, and your business from the consequence of 'loss of containment'. We are always careful in our process hazard analysis work at Stonehouse to establish why a particular operation can be considered to be safe. If it is not, then we determine what changes are needed to achieve an acceptable level of safety. We term this process 'establishing a 'Basis of Safety''.

So, let's consider why a particular industrial process can be considered to be safe...

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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 [\[watch\]](#)

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