

KYLE FLICKER – CASE STUDY IN COMBUSTIBLE DUST HAZARDS Society for Chemical Hazard Communication

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OVERVIEW

- Background
- Combustible dust hazards
- Causes
- Outcome & lessons learned

GOAL

- Foster thought and discussion about combustible dust hazards and safety data sheets
 - Combustible dust continues to be a problem across the country
 - Stakes are high
- Safety is good business
 - All parties are best-served when end users are informed and can work safely
 - Compliant Safety Data Sheets can save lives



KYLE FLICKER



RUBBER ROLLER MANUFACTURER





EXPLOSION



KYLE FLICKER









COMBUSTIBLE DUST

- "Combustible dusts are fine particles that present an explosion hazard when suspended in air under certain conditions."
- "The vast majority of natural and synthetic organic materials, as well as some metals, can form combustible dust."
- "A dust explosion can cause catastrophic loss of life, injuries, and destruction of buildings."

Combustible Dust in Industry: Preventing and Mitigating the Effects of Fire and Explosions, OSHA SHIB, July 31, 2005, updated Nov. 12, 2014, https://www.osha.gov/dts/shib/shib073105.html.

Hazard Communication Guidance for Combustible Dust, OSHA 3371-08 2009, https://www.osha.gov/Publications/ 3371combustible-dust.html.

COMBUSTIBLE DUST

- HAZCOM requires manufacturers to warn downstream employers and users about product hazards
- Includes combustible dust hazards
- SDS and labels

29 C.F.R. §§ 1910.1200(b)(1), (c); Mem. from Thomas Galassi, Dir. of Enforcement Programs, OSHA, to Reg'l Adm'rs, OSHA (Dec. 27, 2013) (providing guidance on classification of combustible dust hazards under HAZCOM).



INFORMATION IMBALANCE

- Even sophisticated companies may be very unsophisticated on combustible dust
- Specific plants may have no experience or expertise
- Individual workers may know nothing about combustible dust hazards or safe working procedures
 - New employees and late shifts

DOWNSTREAM USES

- Manufacturers fail to consider foreseeable downstream uses of their products
- Products with combustible ingredients may be sold in one form and, through processing, generate combustible dust
- Programming of SDS software tools may not account for downstream uses

NO WARNINGS

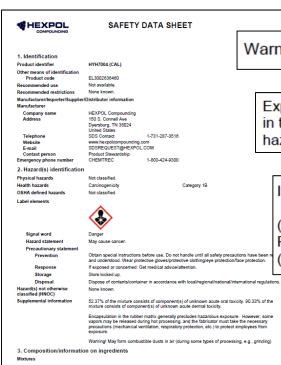
- Rubber manufacturers knew product would be vulcanized and ground
- Knew grinding would generate dust
- Knew products contained combustible ingredients
- No warnings on SDS or labels regarding explosion hazards, engineering controls, work practices, and personal protective equipment



OUTCOME

- Catastrophic injuries
- Litigation
- Possible punitive damages
- Settled with defendants for \$15.5 million

OUTCOME



Material name: HYH7004 (CAL)
EL3002636460 Version #: 03 Revision date: 05-16-2018 Issue date: 07-08-2016

Warning! May form combustible dusts in air (during some types of processing, e.g., grinding)

Explosion hazard: Avoid generating dust; fine dust dispersed in air in sufficient concentrations, and in the presence of an ignition source is a potential dust explosion hazard. During fire, gases hazardous to health may be formed.

If dust is generated during processing, refer to:

- (1) NFPA 654, "Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Solids"
- (2) OSHA 3371-08 2009, "Hazard Communication Guidance for Combustible Dusts"

LESSONS LEARNED

- Chemical manufacturer as expert in its products
- SDS and labels are backbone of hazard communication
- Critical to consider foreseeable downstream uses
- Though not originally be in dust form, chemicals may generate combustible dust through known processing

LESSONS LEARNED

- HAZCOM requires manufacturers to provide information regarding hazards and recommended process controls
- Minimizing the information imbalance is the best way to achieve compliance
- Prevent future catastrophic injuries and loss of life

