

**U.S. Chemical Safety and
Hazard Investigation Board**

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Carolyn W. Merritt
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Dear State Fire Marshal:

Because companies within your state may have operations that involve the use of plastic or other combustible dusts, I urge you to consider this message carefully. I am writing to fire officials who have jurisdiction over companies that may face a serious risk of **dust explosions** and I ask your help in disseminating this information to those fire officials with this responsibility, or whose responsibility it is to protect such facilities.

The U.S. Chemical Safety and Hazard Investigation Board (CSB) recently investigated two tragic combustible dust explosions. In January 2003, a massive explosion destroyed a facility that manufactured rubber products for the pharmaceutical industry in North Carolina, killing six employees and injuring 38. Less than a month later, an explosion ripped through a facility making insulation materials in Kentucky, killing seven workers and injuring 37. The financial losses are in the hundreds of millions of dollars, and extensive liability litigation is underway.

The CSB found that both explosions resulted from the accumulation of combustible plastic dusts through inadequate housekeeping and other factors. Even seemingly "small" dust accumulations--less than 1/32 of an inch over a modest and sometimes hidden area--can be extremely dangerous under the right circumstances. Neither of these facilities was in compliance with fire codes that address the prevention of combustible dust explosions.

Companies under your jurisdiction that use or create powdered or dusty plastic or other combustible materials may be facing similar dust explosion hazards. The information in the enclosed investigation digest and resource list could help you better understand these hazards and assist these companies to avoid a similar tragedy.

I urge you to evaluate whether these facilities may face similar dust explosion risks, and to take appropriate steps if necessary. I'd also like to encourage you to distribute these materials to affected companies and public authorities. Please feel free to distribute the attached digest to any interested parties. We can also make printed copies available.

The CSB is an independent Federal non-regulatory agency whose mission is to investigate industrial chemical accidents and recommend corrective measures to prevent their recurrence.

If you have any questions or need additional information or copies of these materials, please me at (202) 261-7673.

Sincerely,

A handwritten signature in black ink that reads "Jordan Barab". The signature is written in a cursive style with a horizontal line at the end.

Jordan Barab
Recommendations Manager

SOME RESOURCES FOR THE PREVENTION OF DUST EXPLOSIONS

CHEMICAL SAFETY BOARD

West Pharmaceutical Investigation Report:

http://www.csb.gov/completed_investigations/docs/CSB_WestReport.pdf

CTA Acoustics Investigation Report:

http://www.csb.gov/completed_investigations/docs/CSBFinalReportCTA.pdf

OTHER ORGANIZATIONS

National Fire Protection Association: www.nfpa.org (NFPA 654, *Standard for the Prevention of Fire and Dust Explosions from the Manufacturing, Processing, and Handling of Combustible Particulate Solids* is available free for download)

International Code Council: <http://www.iccsafe.org>

Combustible Dust Poses a Dangerous, Explosive Threat in the Workplace, North Carolina Department of Labor: <http://www.dol.state.nc.us/osh/etta/CombDust.pdf>

Dust explosions in the food industry, Health and Safety Executive, Great Britain: <http://www.hse.gov.uk/pubns/fis02.pdf>

Reducing the risk of fire or explosion during the manufacture of fibre-reinforced plastic (FRP) products, Health and Safety Executive, Great Britain: <http://www.hse.gov.uk/pubns/pps15.pdf>

Safe handling of combustible dusts: precautions against explosions Health and Safety Executive, Great Britain <http://www.hse.gov.uk/press/2003/e03221.htm>

Wood dust: hazards and precautions, Health and Safety Executive, Great Britain: <http://www.hse.gov.uk/pubns/wis1.pdf>