



The Commonwealth of Massachusetts
Executive Office of Public Safety and Security
Department of Fire Services



CHARLES D. BAKER
GOVERNOR

KARYN E. POLITO
LT. GOVERNOR

DANIEL BENNETT
SECRETARY

P.O. Box 1025 ~ State Road

Stow, Massachusetts 01775

(978) 567~3100 Fax: (978) 567~3121

www.mass.gov/dfs

PETER J. OSTROSKY
STATE FIRE MARSHAL

TO: Heads of Fire Departments

FROM: Peter J. Ostroskey
State Fire Marshal

DATE: April 4, 2016

RE: **Colored Powder**

In June 2015, colored powder was determined to be the cause of a flash fire in Taiwan injuring nearly 500 people. Following this incident, the use of colored powder has been scrutinized. The primary ingredient of most colored powders is corn starch, which is a combustible dust. When dispersed in sufficient concentrations and ignited, they can create flash fires in open areas or dust explosions in confined areas. In Massachusetts, 527 CMR 1.00, the Comprehensive Fire Safety Code, regulates the use of combustible dust within a building, but does not have provisions for the common use of combustible powders outdoors in the popular “color runs”.

Within a building, 527 CMR 1.00: 40.1 requires equipment, processes, and operations that involve the manufacture, processing, blending, repackaging, or handling of combustible particulate solids or combustible dusts regardless of concentration or particle size to comply with Chapter 40 and various applicable combustible dust standards. 780 CMR, the Massachusetts State Building Code, also has provisions for hazardous materials storage and use.

Outside of a building, 527 CMR 1.00 and 780 CMR have a limited scope. Based on the circumstances of the Taiwan incident, fire officials should specifically ask event planners if colored powders will be used and consider the following when working with them for events involving the use of colored powders:

- Do not allow the use of colored powders in enclosed spaces. Enclosed spaces can include tents, empty pools, or small enclosed stadiums. The enclosure of a space can contain the colored powder in a concentration that could generate a dust cloud.
- Do not allow the presence of nearby ignition sources. Since colored powders are combustible, limiting smoking areas, stage lighting and other electrical or gas-powered

equipment to a powder-free zone will reduce the possible exposure of combustible dust to a source of ignition.

- Do not allow the projection of colored powders over a crowd through cannons or other powered means. Using a cannon or other powered (electrically or pneumatically) device to spread the colored powders increases the risk of suspending the powder in the air in a concentration susceptible to combustion.
- Request and review Safety Data Sheets (SDSs) for the specific powder that will be used in the event. Request all data related to the explosibility and combustibility of the powder
- Where possible, use powders that contain non-combustible additives, such as sodium bicarbonate, that may reduce the hazard.

Further assistance is always available from the Division of Fire Safety on this and similar issues. If you have further questions, please contact the Code Compliance Help Desk at (978)567-3375.