



Combustible Dust Management

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Managing the hazards associated with handling combustible dusts requires an understanding of dust characteristics coupled with a thorough knowledge of evolving combustible dust management standards and practices.

ioKinetic has the tools to help you:

- Characterize your dust
- Conduct process hazard analyses
- Develop programs (e.g., management of change)
- Design dust deflagration vents

ioKinetic consultants can help develop your program from the ground up or address specific aspects of combustible dust hazard management.

Dust Testing

The list of available dust characterization tests is extensive.

Before you invest time and money into conducting tests, let our consultants help you define which tests are important and relevant to your application. Once this determination is made, ioKinetic can conduct the tests at their ISO accredited testing facility.

Dust Hazards Analysis

Analyzing your processes can take many forms. From initial assessments to detailed hazard analyses our consultants can help you move into compliance with the new requirements for a dust hazards analysis in NFPA 652, incorporating requirements of all applicable codes and standards from OSHA, NFPA, ASTM, etc.

Program Development

The field of combustible dust management is evolving. Codes and standards from government and industry groups are changing at a rapid pace. Our consultants apply their hard-earned experience in process safety management to the similar application of combustible dust management. Matching this with our continual effort to stay abreast of recent best practices, we can help you navigate this complicated and changing area.

Deflagration Vent Sizing

ioKinetic has the capability to design dust deflagration vents using both the shortcut methods in NFPA 68 or dynamic modeling (for those systems outside the parameters of NFPA 68).

Key Services Available

Dust Characterization Testing & Analysis

Initial assessment

Dust hazards analysis (DHA)

Emergency relief systems evaluation

Deflagration vent sizing

NFPA 654 compliance audit

Employee training

Design standard development

Software solutions for DHAs, management of change, and data management

Incident investigation



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Software

In addition to consulting services, we offer several software solutions to help you address the ongoing requirements of managing combustible dusts. Process Safety Office™ simplifies the compliance process with components for dust hazards analysis, auditing, explosion vent design. Process Safety Enterprise® helps manage the myriad of programs and processes needed for effective combustible dust management.

Training and Publications

ioKinetic offers both open-enrollment and on-site customizable training courses on combustible dust good engineering practices, leading DHAs and conducting dust deflagration calculations. Please contact us for further details.

ioKinetic has the experience and expertise to help you manage your combustible dust hazards. Our services cover all aspects of combustible dust hazard management, from initial assessments to complete program development, and everything in between. These services are supported by characterization testing, process hazard analysis, vent sizing calculations, and knowledge of recognized and generally accepted good engineering practices (RAGAGEPs).

Types of Combustible Dusts

Metal dusts such as aluminum and magnesium

Organic dusts such as sugar, flour, starch, paper, and dried blood

Plastic dusts and additives

Wood dusts

Coal and other carbonaceous dusts

Bio-solid dusts

Textile dusts

Other dusts such as chemical, pharmaceutical, and tobacco

Testing and Analysis

- Explosion Severity Test (K_{St} , P_{max} , dP_{max}/dt)
- Minimum Ignition Energy (MIE)
- Minimum Auto-Ignition Temperature (MAIT) of Dust Cloud in Air
- Minimum Explosible Concentration (MEC) of Dust in Air
- Limiting Oxygen Concentration (LOC) Test
- Hot-Surface Ignition Temperature (HSIT) of Dust Layer
- Volume Resistivity and Measured Charge Relaxation Time
- Electrostatic Charging (Chargeability) Test
- Chemical Reactivity/Calorimetry Testing

