

GexCon US

DUST EXPLOSION

CONSULTING



GEXCON SERVICES:

- Explosion Consulting
- Dust Explosion Consulting
- Large Loss Investigations
- Atmospheric Dispersion Consulting
- LNG Consulting
- Offshore Explosion Safety

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Dust explosions are a major concern in the process industry. The GexCon team has performed research and consulting in the field of dust explosions for decades. After establishing a dust explosion laboratory in the 1970s, we have performed numerous large-scale dust explosion tests and developed the dust explosion CFD modeling tool DESC (based on FLACS).

GexCon offers a range of services including dedicated dust explosion training courses, dust characterization testing, large-scale tests, risk assessments of powder handling facilities, and detailed CFD-modeling for a more accurate assessment of consequences.

Explosion testing

- Dust explosion properties: K_{st}, P_{max}, ignition energy, ignition temperature, lower explosion limit, limiting oxygen concentration
- Dust layer ignition and potential for bulk storage self heating
- Equipment for use in hazardous areas and for protective systems

Dust explosion training courses

- Dust explosions, accidents, dust properties, ignition sources
- ATEX directives, NFPA guidelines and risk assessments

Risk assessments in powder

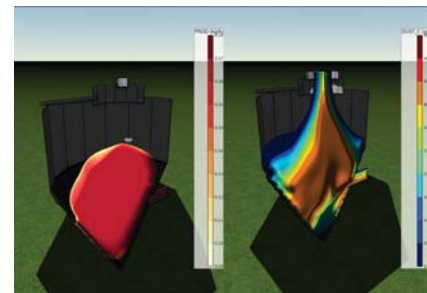
- Systematic risk assessment to evaluate hazards and minimize risk
- Hazardous area classification, ignition sources, explosion venting, explosion suppression, explosion containment

CFD modeling of detailed layout and venting

- Conditions beyond the scope of NFPA-68 (scale, L/D, multivessel, congestion, duct)
- Evaluate realistic process conditions, instead of simple cases assuming the whole volume is unrealistically filled with dust

Accident Investigation

- Cause and origin determination
- FLACS & DESC models powerful in reconstruction of incidents
- Evaluate and help prevent future accidents



DESC EXPLOSION MODELING



COMBUSTIBLE DUST TESTING



TESTING OF PROTECTIVE SYSTEMS



20m³ ROLLER MILL TEST 2009