

Dust explosivity

Air-dust mixtures – a potential hazard?

In contrast to dust deposits, dust clouds may react explosively to an igniting spark due to the extremely large surface area and the mixture formed with air. The known consequences of an explosion – high temperatures and high pressures – often have fatal effects on human life, nature and company facilities. Dust clouds may arise in different operating steps, e.g. during filling and refilling or during micronization.

We are able to clarify conclusively in our test laboratory whether your product has a hazard potential with regard to dust explosions.

A cost-saving method to make a first evaluation concerning the dust explosivity of a product can be achieved with a screening using the modified Hartmann tube. This test is not usable to exclude a dust explosion hazard. However if the result of this test is negative ignition sources with a low ignition energy (e.g. electrostatic charges) have not to be considered anymore.

To completely investigate the possibility of a dust explosion hazard a measurement in the 20 L sphere or in the Godbert-Greenwald oven has to be performed. If this also yields a negative result the danger of a dust explosion for usual operating conditions can be excluded.

In case of an existing dust explosivity further relevant parameters can be determined with additional measurements. Typical parameters are lower explosion limit, limiting oxygen concentration, maximum explosion pressure and maximum pressure rise rate, minimum ignition energy (also possible at higher temperatures and for hybrid mixtures) as well as the minimum ignition temperature.

Based on the determined data we develop together with you the necessary protective measures to ensure a safe operation of your process, your plant.

Interested? Contact us!

Engineering & Consulting
PD PA SE&C EC

team-ec.industry@siemens.com

Tel.: +49 (69) 797-84500

siemens.com/processsafety

Your benefit

- Reliable statements on the hazard potential of your solid
- Sustainable protective concept for the safe operation of your plant

Our service offer

- Investigations according to recognized and standardized methods (VDI, EN, ISO)
- Development of protective concepts
- Preparation of explosion protection documents

