

DUSTINESS TESTING

Determining the exposure potential of industrial materials is an important part of characterization and critical to regulatory compliance. Under GHS and CLP rules, dustiness testing is utilized to assure that handling and exposure risks have been evaluated so they can be controlled and minimized wherever needed.

The dustiness testing system we've developed is capable of processing a wide range of industrial materials and provides highly accurate and reproducible data across a range of starting weights. The analysis is performed using a Rotating Drum design (CEN - EN 15051-2) with modifications for industrial materials per the Heubach rotating drum approach (DIN 55992).



Reddwall Solutions Dusting System determines dusting potentials across materials and product classes. It's highly beneficial in evaluating formulation changes and in assessing market opportunities. As engineered, it's capable of testing for both, total (inhalable) and respirable particulate release. It's also completely contained, making it adaptable to testing agent release from both solids and liquids.

Reddwall Solutions is a leading provider of health and safety solutions to industry, commerce and professional bodies. We have a wealth of expertise and experience, enabling us to provide practical solutions to a broad spectrum of workplace needs.

Dustiness is defined as the propensity of materials to produce a particulate aerosol during handling. This release of unwanted dusts affects:

- Worker exposures;
- Ventilation and filtration system demands;
- Material losses and cross-contamination.

The approach we offer was designed in accordance with European Standard EN 15051:2006 "Workplace atmospheres - Measurement of the dustiness of bulk materials - Requirements and reference test methods" with "Heubach" modifications to both system and process. Test results consist of mass fraction values which can be compared to EN15051 classification thresholds for inhalable (total) and respirable dustiness.

Category of Dustiness	Inhalable (Total) Dustiness Mass Fraction (mg/kg)	Respirable Dustiness Mass Fraction (mg/kg)
Very Low	< 300	< 10
Low	300 - 650	10 - 60
Moderate	650 - 3000	60 - 210
High	> 3000	> 210

Dustiness and Risk Assessment

Dustiness evaluations are used within the broad spectrum of material characterization methods to inform risk assessment. As detailed in EN15051, the level of dustiness generally depends on material and process-specific parameters. As part of the dustiness analysis, critical parameters include:

- Particle size distribution by laser diffraction;
- Moisture content.

In addition to dustiness, our proprietary Vacuum Filtered Fractionation (VFF) can be used to isolate and quantify the 10µm and 5µm respirable fractions. Once these residues are obtained, the Crystalline Silica content can be quantified for GHS, HazCom, WHMIS and CLP respirability reporting.

The combination of dustiness testing and VFF characterization offer critical support for engineering designs, process controls and the assessment of health-based risk. Not only is materials characterization an important aspect in determining potential hazards, they are a fundamental requirement for regulatory compliance. Reddwall Solutions has extensive experience in generating the data needed for product characterization and supporting these needs.

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