

# Determination of Dust Explosion Characteristics



Research Centre  
for applied System Safety  
and Industrial Medicine

# You would like to determine dust explosion characteristics at FSA GMBH?

## Yes, here you are!

We prepared a short check, or QA list to help you before you decide to send us your products, that means your samples.

1. How many products (samples) would you like to be tested?  
Normally for one sample it takes about a week.
2. What is the name of the product (sample)? What are the main components of it? Are there dangerous substances, e.g. hazardous to health, toxic, carcinogen, water polluting etc. in the product?  
It will be highly appreciated that you kindly send us the **safety datasheet in german language** (GefStoffV §5) of the product **first**. Before your product could be preceded, we will proof the datasheet first. In our laboratory we can only handle uncritical substances (e.g. foodstuff). These products which have critical and dangerous substances will not be tested. For the reason we keep the right to refuse a product which contains dangerous substances for examination.
3. We investigate fire and explosion (combustible) characteristics of dust layers and dispersed dust in accordance with German national and European standards.
4. Before determination tests will be carried out the product (sample) will be prepared according to German and European standards with following procedure:
  - a. the product will be sieved (possible particle size < 63 µm for tests with dispersed dust and particle size < 250 µm for tests with deposited dust) and will be dried in an Oven;
  - b. Depending on the fineness of the product, 5 kg of one product should be enough for the standard tests;
  - c. If there is an extraordinarily high effort needed to clean test's apparatus after the tests, the cost will be considered;
  - d. After investigation we will send a report with the results to you.
  - e. We also need the tax-number of your company for the invoice and both the report and the invoice will be sent to your company later.
  - f. The rest of a sample will be kept in a storage room after investigation for two years and after two years it will be sent to the professional waste disposal. If stated before the rest of the sample will be sent back to you and the return cost will be considered.



## Price list for determination of dust explosion characteristics

### Sample preparation

	Amount	EUR (Netto)
Particle size analysis	50 g	250,00 €
Determination of moisture content	10 g	150,00 €

### Standard Determinations

#### Dust layer tests (particle size < 250 µm)

Combustion test at room temperature (BZ)	300 ml	150,00 €
Minimum ignition temperature of a dust layer of 5 mm thickness (glowing temperature)	500 ml	450,00 €

#### Dispersed dust tests (particle size < 63 µm)

Maximum explosion overpressure $p_{max}$	20 l – sphere	1-2 kg	1.600,00 €
Maximum pressure rise $(dp/dt)_{max}$			
KSt-value ( $K_{ST}$ )			
Lower explosion limit (LEL)		500 g	900,00 €
Minimum ignition temperature of dust cloud (BAM-Oven)		100 ml	500,00 €
Minimum ignition energy (MIE)		500 g	1.900,00 €
<b>Special price incl. sample preparation for standard determinations</b>		<b>ca. 5 kg</b>	<b>5.700,00 €</b>



## Specific determinations

Dust layer tests (particle size < 250 µm)	Amount	EUR (Netto)
Combustion test at higher temperature (BZ)	300 ml	250,00 €
Self-ignition temperature pro volume	3-5 kg	1.500,00 €
Bulk density	1 kg	450,00 €
Resistance of bulk material	1 kg	550,00 €
Burning pyrolysis gases Schwelgase	500 ml	550,00 €

## Dispersed dust tests (particle size < 63 µm)

Explosibility (modified Hartmann tube) (DA)	500 g	800,00 €
Explosibility 20 l-sphere	500 g	1.000,00 €
Determination of the dustiness of bulk materials DIN 2263/9	15 kg	2.000,00 €
Determinations in 1m <sup>3</sup> -vessle		on request

Other specific determinations (e.g. metal dusts +50 %)	on request
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## Any other costs which may arise

Cleaning	on request
Waste disposal depending on quantity and chemical properties according to German environmental laws	on request
Delivery charges if the rest of a sample needs to be returned	on request

Prices are not including 19% taxes.



## Request form for sample determination

### Mandatory information

customer:

Address:

Contact:

Tel.:

E-Mail:

Name of sample:

Main content:

Hazardous substances:  YES  NO

Safety data sheet included:  YES  NO hand in later

Which kind of determinations you would like to have?

### Optional information

Date of sampling:

Place of sampling:

Reason for the investigation:

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