IS YOUR DUST COMBUSTIBLE?

When looking to protect against a dust explosion, it is critical to know the Kst value of your material. Kst is the dust deflagration index, and it measures the relative explosion severity compared to other dusts. This is a relative index, however, and any material with a Kst value greater than zero is considered to be at risk of an explosion. Other than silicon or sand, every kind of dust is potentially combustible to some degree.

Examples of Kst Values for Different Tyoe of Dusts

Dust explosion class*	Kst(bar.m/s)*	Characteristic*	Typical material*
St 0	0	No explosion	Silica
St 1	>0 and ≤200	Weak explosion	Powdered milk, charcoal, sulfur, sugar, zinc
St 2	>200 and ≤300	Strong explosion	Cellulose, wood flour, polymethyl acrylate
St 3	>300	Very strong explosion	Anthraquinone, aluminum, magnesium

The actual class is sample specific and will depend on varying characteristics of the material such as particle size or moisture. Source: http://www.osha.gov/Publications/3371combustible-dust.pdf **OSHA CPL 03-00-008 - Combustible Dust National Emphasis Program. **NFPA 68, Standard on Explosion Prevention by Deflagration Venting.*

Kst Values for Common Dusts:
Any value greater than zero is a potential explosion risk

Dust	Kst Value	Characteristic	Dust	Kst Value	Characteristic
Activated carbon	44	Weak Explosion	Paper tissue dust	52	Weak Explosion
Aluminum grit	100	Weak Explosion	Para formaldehyde	178	Weak Explosion
Aluminum powder	400	Very Strong Explosion	Peat	178	Weak Explosion
Asphalt	117	Weak Explosion	Pectin	162	Weak Explosion
Barley grain dust	240	Strong Explosion	Phenolic resin	129	Weak Explosion
Bronze	31	Weak Explosion	Polyester	85	Weak Explosion
Brown coal	123	Weak Explosion	Polyethylene	134	Weak Explosion
Calcium stearate	132	Weak Explosion	Polyurethane	156	Weak Explosion
Cellulose pulp	62	Weak Explosion	Rice Starch	190	Weak Explosion
Cellulose	229	Strong Explosion	Silicon	126	Weak Explosion
Corn	75	Weak Explosion	Soap	111	Weak Explosion
Charcoal	117	Weak Explosion	Sodium ascorbate	119	Weak Explosion
Cotton	24	Weak Explosion	Sodium stearate	123	Weak Explosion
Dextrin	106	Weak Explosion	Soot	26	Weak Explosion
Egg White	38	Weak Explosion	Soybean flour	110	Weak Explosion
Epoxy powder	125	Weak Explosion	Starch, corn	202	Strong Explosion
Epoxy resin	129	Weak Explosion	Sugar	138	Weak Explosion
Flour, Bakers 4.3% Moist	112	Weak Explosion	Sulfur	151	Weak Explosion
Lead stearate	152	Weak Explosion	Tobacco	12	Weak Explosion
Magnesium	508	Very Strong Explosion	Toner	145	Weak Explosion
Malt dust	122	Weak Explosion	Wood Dust	102	Weak Explosion
Melamine resin	110	Weak Explosion	Wood Flour	205	Strong Explosion
Methyl cellulose	209	Strong Explosion	Zinc	176	Weak Explosion
Milk powder	90	Weak Explosion			

Call us today for an evaluation of your dust. 800-264-8958