

## ATEX 137 - Explosion Properties of SABIC® LDPE

*This information presents only the results and recommendation of the explosion hazards of dust and not the presence of combustible gas and hybride mixtures. All data are typical values. Please consult an expert for specific safety advice.*

### Dust explosion properties of SABIC® LDPE

Particle size granulate	3 to 4 mm
Moisture content	< 0.5 (m/m)%
Minimum Ignition Energy (VDI 2263, <63 µm)	> 10 mJ
Minimum Ignition Temperature (VDI 2263) *	420 °C
Volume Resistivity (ASTM D257)	> 3E15 Ω.m (Bad conductor)
Explosibility class *	St. 1
Maximum Explosion Overpressure*	9 bar
Lower Explosion Limit *	60 g/m <sup>3</sup>

### Remarks

- LDPE dust is capable of causing dust explosions.
- Electrostatic charging of the material is possible knowing that the resistivity is > 3E15 Ω.m which means that the material acts as an insulator.
- In situations where dust/air mixtures may evolve, the resistivity and MIE are such that a static discharge can cause an explosion. Therefore, inerting or other suitable preventive measures are called for in all locations where a potential source of ignition (e.g. static discharge or friction sparks) is present.
- LDPE melts before ignition of the dust layer can occur. However hot surfaces which could come into contact with dust should not exceed 280°C in order to avoid direct ignition of a dust cloud.

### Reference:

\*) BIA report 12/97, Brenn- und Explosionskenngrößen von Stauben, Beck, H.; N. Glienke and C. Möhlmann, ISBN 3-88383-468-8

E. van't Oost, Vastleggen van stofparameters LDPE, LLDPE, HDPE, HDPE en PP tbv ATEX 137, Resolve DSM Research

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