

Technical Information



ATEX 137 - Explosion Properties of SABIC® PP

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® PP

Particle size granulate	3 to 4 mm
Moisture content	< 0.5 (m/m)%
Minimum Ignition Energy (VDI 2263, <125 µm)	> 300 mJ
Minimum Ignition Temperature (VDI 2263) *	410 °C
Volume Resistivity (ASTM D257)	> 1E15 Ω.m (bad conductor)
Explosibility class *	St. 1
Maximum Explosion Overpressure*	9 bar
Lower Explosion Limit *	Unknown

Remarks

- There is no immediate danger of ignition by static discharge or mechanical sparks due to the relatively high Minimum Ignition Energy and Minimum Ignition Temperature provided that:
 - o All conductive components must be earthed,
 - o Non-conductive components that are connected to the conductive components must have a breakdown voltage of less than 4 KV or must be at least 8mm thick
- Electrostatic charging of the material is possible knowing that the resistivity is very high 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.
- PP melts before ignition of the dust layer can occur. However hot surfaces which could come into contact with dust should not exceed 270°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

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