

ATEX 137 - Explosion Properties of SABIC® LLDPE

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® LLDPE

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 *	10 g/m ³

Remarks

- LLDPE 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.
- LLDPE 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

All information supplied by or on behalf of any of the SABIC Europe companies in relation to its products, whether in the nature of data, recommendations or otherwise, is supported by research and believed reliable, but the relevant SABIC Europe company assumes no liability whatsoever in respect of application, processing or use made of the afore-mentioned information or products, or any consequence thereof. The user undertakes all liability in respect of the application, processing or use of the afore-mentioned information or product, whose quality and other properties he shall verify, or any consequence thereof. No liability whatsoever shall attach to any of the SABIC Europe companies for any infringement of the rights owned or controlled by a third party in intellectual, industrial or other property by reason of the application, processing or use of the afore-mentioned information or products by the user.