



Lupolen 4552D black

Compounded Polyolefin

Product Description

Lupolen 4552D black is a UV and thermal stabilised high-density polyethylene with a multi-modal molecular weight distribution designed for extrusion. *Lupolen 4552D black* is produced with the advanced *Hostalen* technology which provides the material with excellent mechanical and physical properties. The excellent dispersion of the fine particle sized carbon black ensures the material has excellent weathering resistance.

Lupolen 4552D black fulfils the requirements of DIN 30670, NFA 49710, CAN, CSA-Z245.21-M98 and prEN 10285 when used in combination with the maleic-anhydrided grafted adhesives *Lucalen G3710E P* and a compatible fusion-bonded epoxy powder.

Lupolen 4552D black is recommended as the topcoat layer in 3LPE pipe coating applications and is suitable for severe laying conditions even at elevated temperatures. *Lupolen 4552D black* can be used up to 85°C service temperature of the pipeline when used in combination with the maleic-anhydride grafted adhesives *Lucalen G3710E* or *Lucalen G3710E P* and a compatible fusion-bonded epoxy powder.

This grade is available in black, in pellet form.

Product Characteristics

Status	Commercial: Active
Test Method used	ISO
Availability	Europe, North America, Asia-Pacific, Australia/NZ, Africa-Middle East, Latin America
Processing Methods	Extrusion Coating
Features	Bacteria Resistant, Good Chemical Resistance, Good Creep Resistance , High Density, High ESCR (Environmental Stress Cracking Resistance), Fungus Resistant, Good Impact Resistance , Ozone Resistant, Good UV Resistance, Low to No Water Absorption , Good Weather Resistance
Typical Customer Applications	Pipe Coating

Typical Properties	Method	Value	Unit
Physical			
Density	ISO 1183	≥ 930	g/cm ³
<i>Note:</i> Base polymer		0.956	g/cm ³
<i>Note:</i> Compound			
Melt flow rate (MFR)	ISO 1133		
(190°C/2.16kg)		0.42	g/10 min
(190°C/5.0kg)		1.7	g/10 min
Bulk density (23°C)	ISO 60	>0.5	g/cm ³
Mechanical			
Tensile Modulus (23 °C, v = 1 mm/min)	ISO 527-1, -2	900	MPa
Tensile Stress at Yield (23 °C, v = 50 mm/min)	ISO 527-1, -2	23	MPa
Tensile Strain at Break	ISO 527-1, -2	700	%

ESCR (ASTM-Fo)	ASTM D 1693/IEC 538	>2000	h
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Impact

Notched izod impact strength (- 20 °C)	ISO 180	≥ 3	kJ/m ²
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Hardness

Shore hardness D	ISO 868/ASTM D 2240	60	
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Thermal

Melting temperature		130	°C
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Note: ISO 3146

Brittleness Temperature	ASTM D 746	< -70	°C
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Vicat softening temperature A/50	ISO 306	124	°C
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Oxidation induction time (OIT) (200°C)	ISO 11357-6 / EN 728	>30	min
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Oxidation induction time (OIT) (210°C)	ISO 11357-6 / EN 728	≥ 30	min
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Oxidation induction time (OIT) (220°C)	ISO 11357-6 / EN 728	≥ 20	min
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Electrical

Specific volume resistivity	ASTM D 257/IEC 93	10E16	
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Additional Information

Carbon black content	ISO 6964	2.2	%
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Moisture content		0.035	%
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Note: Test method: DIN EN ISO 15512

Additional Properties

Processing:

Recommended melt temperatures: 190-260 °C.

Unless specifically indicated, the grade mentioned is not suitable for applications in the pharmaceutical/medical sector.

Notes

Typical properties; not to be construed as specifications.