

# ALCUDIA® HDPE 3802-N

High Density (HMW) Polyethylene  
REPSOL

Message:

ALCUDIA® 3802-N black compound, is an hexene copolymer of high molecular weight especially apt for the extrusion of pipe for gas and potable water, to comply with the requirements of the EN 1555 and EN 12201 European specification standards as a PE80.

The combination of the antioxidant system and minimum of 2.0% well dispersed carbon black used in 3802-N provides the following features:

- excellent protection against thermal oxidation during processing.
- long term stability.
- excellent cracking resistance.

Based on the new ISO classification the ALCUDIA® 3802-N compound is classified PE 80.

Because other good mechanical properties and their characteristics, the polyethylene black compound ALCUDIA® 3802-N, is designed to produce pipe for potable water, to comply with the international requirements.

General Information	
Additive	Antioxidant
	Carbon Black (2%)
Features	Antioxidant
	Food Contact Acceptable
	Good Crack Resistance
	Hexene Comonomer
	High Molecular Weight
Uses	Fittings
	Piping
	Sheet
Agency Ratings	EN 12201
	EN 1555
Appearance	Black
Processing Method	Pipe Extrusion
	Sheet Extrusion

Physical	Nominal Value	Unit	Test Method
Density (23°C)	0.949	g/cm³	ISO 1183
Melt Mass-Flow Rate (MFR)			ISO 1133
190°C/2.16 kg	0.18	g/10 min	
190°C/21.6 kg	18	g/10 min	
190°C/5.0 kg	0.80	g/10 min	
Environmental Stress-Cracking Resistance (10% Antarox CO-630, F50)	> 4000	hr	ASTM D1693

Hardness	Nominal Value	Unit	Test Method
Durometer Hardness (Shore D)	60		ASTM D2240
Mechanical	Nominal Value	Unit	Test Method
Tensile Stress (Break)	30.0	MPa	EN 638
Tensile Strain (Break)	1100	%	EN 638
Flexural Modulus	700	MPa	ASTM D790
Internal Pressure Resistance			EN 1555/12201
10 MPa : 20°C	> 4.2	day	
4.0 MPa : 80°C	> 41.7	day	
4.6 MPa : 80°C	> 6.9	day	
Oxidation Induction Time (210°C)	> 20	min	EN 728
Long-Term Hydrostatic Strength - 50 years (20°C) <sup>1</sup>	> 8.00	MPa	ISO TR 9080
Thermal	Nominal Value	Unit	Test Method
Brittleness Temperature	< -118	°C	ASTM D746
Vicat Softening Temperature	126	°C	ASTM D1525 <sup>2</sup>
Extrusion	Nominal Value	Unit	
Cylinder Zone 1 Temp.	170 to 190	°C	
Cylinder Zone 2 Temp.	175 to 195	°C	
Cylinder Zone 3 Temp.	180 to 200	°C	
Cylinder Zone 4 Temp.	185 to 205	°C	
Cylinder Zone 5 Temp.	190 to 210	°C	
Melt Temperature	190 to 210	°C	
NOTE			
1.	Regression Curve		
2.	Rate A (50°C/h)		

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