

# INEOS HDPE TUB 121

High Density Polyethylene Copolymer

INEOS Olefins & Polymers USA

## Message:

TUB 121 is a black bimodal high density polyethylene copolymer designed for water, natural gas, industrial, and mining pipe and fittings. TUB 121 is listed by the Plastics Pipe Institute (in PPI TR-4, as both PE 4710 and PE 100) and is certified to ANSI/NSF Standard 14, CSA B137.1 and CSA B137.4.

General Information			
Features	Copolymer High Density		
Uses	Fittings Industrial Applications Mining Applications Natural Gas Distribution Piping Potable Water Applications		
Agency Ratings	CSA B137.1 CSA B137.4 EC 1907/2006 (REACH) NSF 14 PPI PE-100 PPI PE-4710		
RoHS Compliance	Contact Manufacturer		
Appearance	Black		
Forms	Pellets		
Processing Method	Pipe Extrusion		
Physical	Nominal Value	Unit	Test Method
Specific Gravity			
Black	0.959	g/cm <sup>3</sup>	ASTM D792
-- <sup>1</sup>	0.949	g/cm <sup>3</sup>	ASTM D4883
Melt Mass-Flow Rate (MFR)			ASTM D1238
190°C/21.6 kg	8.0	g/10 min	
190°C/5.0 kg	0.30	g/10 min	
Environmental Stress-Cracking Resistance (100% Igepal, F50)	> 5000	hr	ASTM D1693B
Carbon Black Content	2.3	%	ASTM D1603
Hardness	Nominal Value	Unit	Test Method
Durometer Hardness (Shore D)	64		ASTM D2240

Mechanical	Nominal Value	Unit	Test Method
Tensile Strength <sup>2</sup>			ASTM D638
Yield	24.1	MPa	
Break	32.4	MPa	
Tensile Elongation <sup>3</sup>			ASTM D638
Yield	9.5	%	
Break	> 600	%	
Flexural Modulus - 2% Secant	931	MPa	ASTM D790A
Hydrostatic Design Basis			ASTM D2837
23°C	11.0	MPa	
60°C	6.89	MPa	
Oxidation Induction Time (210°C)	> 20	min	ASTM D3895
Thermal Stability	> 240	°C	ASTM D3350
Cell Classification	445574C		ASTM D3350
Minimum Required Strength	10.0	MPa	ISO 9080
PENT - Notch Tensile	> 10000	hr	ASTM F1473
Impact	Nominal Value	Unit	Test Method
Notched Izod Impact	640	J/m	ASTM D256
Notched Izod Impact (Area)	12.0	kJ/m <sup>2</sup>	ASTM D256
Thermal	Nominal Value	Unit	Test Method
Brittleness Temperature	< -118	°C	ASTM D746
Vicat Softening Temperature	126	°C	ASTM D1525

#### NOTE

1. Natural
2. 51 mm/min
3. 51 mm/min

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