



# 46GP003 HIGH DENSITY POLYETHYLENE FOR PIPE EXTRUSION

46GP003 (PE-100) is a natural colored grade for pipe extrusion. It possesses bimodal molecular weight distribution, which improves processability. This grade meets the MFI, Density & Hydrostatic strength requirements of material grade PE-100 as per IS: 4984:1995 (Amendment-3) on "High Density Polyethylene pipe for water supply-specification". When incorporated with adequate quantity of carbon black as specified in clause 5.2.3 of IS: 4984:1995, will meet the requirements of PE:100 grade.

## Description

Pipe made from 46GP003 grade passes the Internal Pressure Creep Rupture Test when tested with 5.5 MPa induced stress at 80°C for 165 hrs and with 5.7 MPa induced stress at 80°C for 48 hrs as per clause 8.1 of IS 4984, thereby meeting the requirements of PE100 grade as per IS: 4984.

The grade conforms to ISO 4427 specification shown below and has been certified for MRS > 10 Mpa as per ISO 9080.

Property	Test Method	Unit	Remarks
Hydrostatic Pressure Test	ISO 1167	Hrs	
12.4 Mpa @20°C			> 100
5.4 Mpa @80°C			> 165
5 Mpa @80°C			> 1000
MRS	ISO TR9080	MPa	> 10.0
SCG	ISO 13479	Hrs	> 500

Typical Characteristics*			
Property	Test Method	Unit	Typical Value**
Melt Flow Index (190°C / 5.0 Kg )	ASTM D1238	gm/10 min	0.30
Density ( 23°C )	ASTM D1505	gm/cm <sup>3</sup>	0.946
Thermal stability (O.I.T) 200°C	ASTM D3895	Min	> 30
Tensile Strength at Yield	ASTM D638	MPa	28
Elongation at break	ASTM D638	%	> 600
Flexural Modulus	ASTM D790	MPa	850
Notched izod impact strength	ASTM D256	J/m	No Break
ESCR, F <sub>50</sub>	ASTM D1693	Hours	> 1000

\*Typical values not to be taken as specification

\*\*Mechanical Properties are on Compression moulding

## Application

PE-100 pressure pipes.

## Regulatory Information

- Meets the requirement stipulated in standard IS: 10146-1982 on "Specification for Polyethylene for safe use in contact with foodstuffs, pharmaceuticals, and drinking water". It also conforms to the positive list of constituents as prescribed in IS: 10141-1982. The grade and the additives incorporated in it also comply with the FDA: CFR Title 21, 177.1520, Olefin Polymers. The level of antioxidant in 46GP003 is not more than 0.3% by mass of the resin.

## Storage Recommendations

- Bags should be stored in dry conditions at temperatures below 50°C and protected from UV/ direct sunlight