



46GP003

POLYETHYLENE RESIN FOR PIPE EXTRUSION

Relene 46GP003 (PE:100) is a natural coloured 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 4984:2016 for 'Polyethylene pipes for Water Supply - Specification' when incorporated with adequate quantity of carbon black as specified in clause 5.3 of IS: 4984: 2016. It will also meet the requirements of the designation PE EL C45T003 mentioned in the clause 4.2 of IS 7328: 1992.

Pipe made from Relene 46GP003 grade passes the Internal Pressure Creep Rupture Test when tested with 5.4 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 4984:2016, thereby meeting the requirement of PE:100 grade.

This 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
5.0 MPa @80°C			>1000
MRS	ISO 9080	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 ³	0.948
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 @ 10 % Igepal Soln (F ₅₀)	ASTM D1693	Hrs	>1000

* Typical values not to be taken as specification

**Mechanical Properties are on Compression Moulding

Applications

PE 100 pressure pipes

Typical Process Conditions:

- Typical Process Temp (°C) - 180 – 220

Regulatory Information

- Meets the requirements 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 IS 16738:2018 "Positive List of Constituents for Polypropylene, Polyethylene and their Copolymers for its Safe Use in Contact with Foodstuffs and Pharmaceuticals"
- 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/closed conditions at temperatures below 50°C and protected from UV / direct sunlight.