45GP004

POLYETHYLENE RESIN
FOR PIPE EXTRUSION

Relene 45GP004 (PE:80) 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:80 as per IS 4984:2016 for 'Polyethytene 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 C45T006 mentioned in the clause 4.2 of IS 7328: 1992.

Pipe made from Relene 45GP004 grade passes the Internal Pressure Creep Rupture Test when tested with 4.5 MPa induced stress at 80°C for 165 hrs and with 4.9 MPa induced stress at 80°C for 48 hrs as per clause 8.1 of IS 4984:2016, thereby meeting the requirement of PE:80 grade.

This grade conforms to ISO 4427 specification shown below and has been certified for MRS > 8 MPa as per ISO 9080.

Property	Test Method	Unit	Remarks
Hydrostatic Pressure Test	ISO 1167	Hrs	
10 MPa @20°C			>100
4.5 MPa @80°C			>165
4.0 MPa @80°C			>1000
MRS	ISO 9080	MPa	>8.0
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	0.45
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	27
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 80 pressure pipes

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Typical Process Conditions:

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

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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 45GP004 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℃ and protected from UV/direct sunlight.

DISCLAIMER

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