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 requirements of material as per clause 5.2 of IS 4984:2016 for 'Polyethylene pipes for Water Supply - Specification'. When incorporated with adequate quantity of carbon black masterbatch as specified in clause 5.3 of IS: 4984: 2016, pipes made with this grade confirms to all specifications as per IS 4984- 2016.

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 specifications shown below and has been certified for MRS > 8 MPa as per ISO 9080.

BIS Designation Code: IS 7328-3B-PB-FTA

Typical Characteristics

Property	Test Method	Unit	Typical Value*
Hydrostatic Pressure Test	ISO 1167	Hrs	
10 MPa @ 20°C			>100
4.5 MPa @ 80°C			>165
4.0 MPa @ 80°C			>1000
Melt Flow Index (190°C/ 5.0 kg)	ASTM D1238	g/10 min	0.45
Density (23°C)	ASTM D792	g/cm^3	0.948
Thermal Stability (O.I.T.) 200°C	ASTM D3895	Min	>30
Tensile Stress 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 D1693B	hrs	>1000

* Typical values, not to be taken as specification. All the mechanical properties are done on compression moulded specimen in accordance with ASTM D4976

Reliance Industries Limited, Product Application & Research Centre (PARC), Vadodara Manufacturing Division, P. O. Petrochemicals, Village Koyali, District Vadodara: Pin 391346, Gujarat, India. E-mail: polymer.PEsupport@ril.com Website: www.ril.com

Updated as of February, 2026

Typical Processing Conditions

Typical Processing Temperature: 180 – 220 ^{O}C

Note: Processing parameters mentioned above are for reference only and not to be considered as specifications. They may vary based on the product to be manufactured.

Applications

- PE80 Pressure Pipes, Sheets.

Regulatory Information

The product complies with Indian Standard IS 10146 on “Specification for Polyethylene for safe use in contact with foodstuffs, pharmaceuticals, and drinking water.” It also conforms to IS 16738:2018 on “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.
Not to be used in the manufacture of Single Use Plastic (SUP) items prohibited under PWM Rules, 2016.

Storage Recommendations

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

DISCLAIMER

The information contained herein may include typical properties and processing parameters of the grade or its typical performances when used in respective applications. The values given above are based on analysis of representative samples and not the actual product supplied. It is the customer’s responsibility to inspect and test our grades in order to satisfy itself as to the suitability of the products for customers’ particular application. The customer is solely responsible for all determinations regarding any use of material or product and any process in its area of interest. RIL assumes no obligation or liability for any loss, damage or injury directly or indirectly suffered or incurred as a result of using any of the information or product given in this document. The information and data presented herein is true and accurate to the best of our knowledge. No warranty or guarantee expressed or implied, is made regarding performance or otherwise. This information and data may not be considered as a suggestion to use our products without taking into account existing patents, or legal provisions or regulations, whether national or international. The user of any information and/or data is advised to obtain the latest details from any of the offices of the company or its authorized agents, as the information and/or data is subject to change based on the research and development work undertaken by the company.