

Technical Datasheet

P0148D Polysure HDPE

PE 80 Pipe

Product Characteristics:

Polysure P0148D is a 1-Hexene co-monomer based High Density Polyethylene, produced by Advanced Dual Loop Slurry MarTECH™ technology, suitable for Pipe Extrusion process. P0148D offers excellent processability & superior mechanical properties. Pipes made with P0148D have smooth surface finish, good long term hoop strength, good creep resistance and high ESCR. Pipes when produced with P0148D and optimum dosage of carbon black as specified in clause 5.2.3 of IS 4984, will meet the hydrostatic strength requirement of PE 80 class of pipes.

Recommended Applications:

PE 80 pressure pipes used in potable water distribution, municipal pipes, industrial and mining pipes. It is also used for making oil and gas-gathering pipes.

Typical Properties:

Sr. No.	Property	Test Method	Unit	Value*
Resin Properties				
1	Melt Flow Index (190°C & 5 kg)	ASTM D1238	g/10 min	0.4
2	Melt Flow Index (190°C & 21.6 kg)		g/10 min	11
3	Density (23°C)	ASTM D1505	g/cc	0.948
4	Tensile Strength at Yield, Type IV Specimen	ASTM D638 (50 mm / min)	MPa	23
5	Tensile Elongation at Break, Type IV Specimen		%	1000
6	Flexural Modulus (2% Secant)	ASTM D790B	MPa	850
7	Notched Izod Impact Strength (23°C)	ASTM D256A	J/m	275
8	Vicat Softening Point (10N)	ASTM D1525	°C	123
9	ESCR (F50), 10% Igepal	ASTM D1693B	Hour	>1000
10	Oxidative Induction Time	ASTM D3895	min	>30
Pipe Properties#				
1	Slow Crack Growth Test	ISO 13479	Hour	>500
2	Minimum Required Strength	ISO 9080	MPa	8
3	Hydrostatic Pressure Test at Induced Stress 4.9 MPa	IS 4984 (80°C)	Hour	≥48
4	Hydrostatic Pressure Test at Induced Stress 4.6 MPa		Hour	≥165

* All the mechanical properties are determined on Compression Molded Test Specimen, prepared in accordance with ASTM D4703

The properties are of pipes extruded with pellets of P0148D and carbon black concentrate

Processing Guidelines:

- Barrel Temperature : 180 - 220°C
- Die Temperature : 190 - 210°C

Storage & Handling:

Bags should be stored in dry & dust free environment at temperature below 50°C and Prevent from direct exposure to sunlight & heat to avoid quality deterioration.

This grade meets the requirements of IS 7328:2020 - Specification for Polyethylene Material for Moulding and Extrusion.

Regulatory Requirements:

P0148D to be manufactured complying the requirements specified in IS 10146 on "Specification for Polyethylene for its safe in contact with Foodstuff, Pharmaceutical & Drinking water". Furthermore, the Additives added in this grade formulation complies to the "Positive list of constituents for Polypropylene, Polyethylene and their Copolymers for its safe use in contact with Foodstuffs & Pharmaceuticals' as laid down under IS 16738:2018. In general, the additives & constituents used in the grade are in line with requirement laid down under FDA: CFR Title 21,177.1520, Olefin Polymers.

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