



PRODUCT DATA SHEET

HIGH DENSITY PLOYETHYLENE (NATURAL)

Grade: NI1030

HIGH DENSITY PLOYETHYLENE FOR INSULATING TELEPHONE SINGLE WIRE AT HIGH SPEED

DESCRIPTION

High Density Polyethylene (Natural) – Grade: NI1030 is a polyethylene compound specifically developed for solid insulation of single telephone wires in high-speed extrusion processes. It is particularly suited for use as insulation in petroleum-filled telephone cables and is also well-suited for use as the outer layer in foam-skin cable constructions.

APPLICATIONS

Grade NI1030 is designed for high-speed insulation of telephone single wires—operating effectively at extrusion speeds of up to 2400 m/min. It is ideal for use in both dry core and petroleum jelly-filled cables and also serves well as the outer skin in foam-skin constructions.

FEATURES

- Excellent electrical insulation properties
- Optimized for high-speed extrusion (up to 2400 m/min)
- Superior melt strength and stability
- Smooth surface finish for consistent wire coating
- Good mechanical strength and flexibility
- Suitable for both dry core and petroleum jelly-filled cables
- Compatible as outer skin in foam-skin constructions



PROPERTIES

Item	Result	Test Method	Unit
Melt Flow Index	0.5±0.1	ASTM D1238	g/10min
Density	0.944±0.004	ASTM D792	g/cm ³
Ultimate Tensile Strength	25±2	ASTM D638	N/mm ²
Elongation At Break	950±50	ASTM D638	%
Retention of mechanical properties after aging 48 hours at 1000°C	95±3	ASTM D638	%
Brittleness Temperature	-50±01	ASTM D746	°C
ESCR	>48	ASTM D1693	hours
OIT	40±5	ASTM D3895	min
Thermal Stress Cracking at 100°C	>96	ASTM D2951	hours
Dielectric Constant at 1MHZ	2±0.1	ASTM D150	---
Dissipation Factor at 1 MHZ	0.005±0.001	ASTM D150	---
Water Immersion Stability	Pass	ASTM D149	---
Dielectric Strength	25±1	ASTM D149	Kv/mm
DC Volume Resistivity at 23°C	1015	ASTM D257	Ohm.cm

PROCESSING CONDITIONS

Grade NI1030 is suitable for processing under a wide range of conditions and supports very high extrusion speeds, typically up to 2400 m/min. For standard extrusion equipment, the following settings are recommended to ensure optimal insulation quality. Using heated water (up to 50 °C) in the initial section of the cooling trough can enhance adhesion to the conductor.

Tooling:

Pressure tooling is generally necessary, and die diameters are usually matched closely to the final wire size (“on size” tooling).

Typical Processing Parameters:

1. Barrel Temperature: 165 – 210 °C
2. Die Head Temperature: ~220 °C
3. Melt Temperature: 220 – 230 °C
4. Conductor Preheating Temperature: 100 – 115 °C

STORAGE

Grade NI1030 is available in bulk packaging, octabins, and bags. When stored in its original, unopened packaging under clean and dry conditions at temperatures between 10°C and 30°C (50°F



to 85°F), the product maintains a shelf life of up to 24 months from the production date. Storage conditions significantly affect the material's quality and performance—exposure to extreme conditions may lead to degradation. To maintain product integrity, it is recommended to follow a First-In, First-Out (FIFO) stock rotation system.

SAFETY

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