



Data Sheet

POL01

Steel Pipe Coating Polyethylene Compound

Description:

POL01 is a black high-density polyethylene compound designed for use in the three-layer system anti-corrosion coating of steel pipes. This grade is formulated with $2.6 \pm 0.1\%$ finely dispersed carbon black to ensure exceptional weathering resistance. Antioxidant additives are incorporated to achieve outstanding long-term properties and aid in the extrusion process. **POL01** is well-suited for application in harsh environmental conditions, both at low and high ambient temperatures. It may also allow for high processing speeds and potential reductions in coating layer thickness under specific conditions. The intended design temperature range for **POL01** is from -40°C to $+80^{\circ}\text{C}$. This product is designed to meet the requirements specified in the standards and specifications outlined below.

Specification:

ASTM D1248 / Type III / class C / category 4 or 5 / grade E8

IGS E TP 010

CAN/CSA Z245.21

DIN30670

ISO 21809-1

Color: Black

Properties	Unit	Typical Value	Standard and Test Method
Density (Base Resin)	gr/cm ³	≥ 0.93	ISO 1183-1/Method A
Density (Compound)	gr/cm ³	≥ 0.94	ISO 1183-1/Method A
Melt Flow Index(190C/2.16kg)	gr/10min	0.5 ± 0.1	ISO 1133-1
Melt Flow Index(190C/5kg)	gr/10min	2.0 ± 0.1	ISO 1133-1
Carbon black content	%	2.6 ± 0.1	ASTM D1603
Carbon black Dispersion	----	≤ 3	BS 2782 , ISO 18553
Tensile Stress at yield (50 mm/min) (23°C)	MPa	≥ 17	ISO 527-2
Tensile Stress at break (50 mm/min) (23°C)	MPa	≥ 25	ISO 527-2
Tensile Strain at break (50mm/min) (23°C)	%	≥ 600	ISO 527-2
Hardness	Shore D	60 ± 1	ISO 868
Thermal ageing	%	$\Delta\text{MFI} \leq 35$	Annex G (ISO 21809-1)
UV resistance	%	$\Delta\text{MFI} \leq 35$	Annex G (ISO 21809-1)
Oxidation Induction Time (210 °C)	min	≥ 30	ISO 11357-6



Melting point	°C	≥ 125	ISO 3146
E.S.C.R (50°C.Cond.B-10% Igepal)	hr.	≥ 5000	ASTM D1693
Vicat Softening Temperature A50 (10 N)	°C	115±2	ISO 306
Brittleness Temperature	°C	≤ -80	ASTM D746
Water content	%	≤ 0.05	ISO 15512
Coating resistivity	Ωm^2	$\geq 1 \times 10^{10}$	DIN 30670 / NFA 49-710

* Data should not be used for specification work

Processing Guidelines:

As a guide the following temperature conditions profile may be recommended:

	zone 1	zone 2	zone 3	zone 4	head	die	Melt Temp
max (°C)	180	190	200	200	210	210	260
min (°C)	170	180	190	190	200	200	220-240

Packaging:

POL01 is supplied in either 25 kg bags on pallets or in PP laminated big bags with a net content of 1000 kg. For optimal storage and to maintain product quality, please adhere to the following guidelines:

- Store in its unopened original packaging.
- Keep it in a closed, clean, and dry area.
- Protect from UV exposure and direct sunlight.
- Store at temperatures below 50°C.

The shelf life of **POL01** is up to 24 months from the date of production when stored in accordance with the specified conditions. However, under long-term storage or unsuitable conditions, the moisture content may increase. Therefore, it is recommended to dry the product before extrusion if it has been stored for an extended period under such conditions.