

POLIDAN[®] TUX 100

High density crosslinkable polyethylene compound

POLIDAN[®] TUX 100 is a high density crosslinkable polyethylene compound manufactured according to the "SIOPLAS[®]" process. It has been developed for the production of crosslinked pipes in a wide range of diameters and wall thickness.

Crosslinked PE pipes manufactured from POLIDAN[®] TUX 100 show outstanding properties:

- excellent temperature resistance
- very high environmental stress crack (ESCR) and notch resistance
- very good chemical resistance
- very high resistance towards rapid crack propagation (RCP)
- excellent long term strength

The MRS classification of the POLIDAN[®] TUX 100 has been calculated by BODYCOTE Polymer according to ISO TR 9080. It largely exceeds the specifications of the MRS 10 class.

Processing

POLIDAN[®] TUX 100 is processed together with a catalyst masterbatch namely CATALYST CAT 10 in the ratio of 95 to 5 respectively. The POLIDAN[®] TUX 100 compound and its Catalyst CAT 10 can be used together with good quality PE based colour masterbatches. Solvay Padanaplast suggests pre-drying all colour masterbatches prior use.

Properties

Mechanical and Physical properties are reported on the next page. The crosslinking is brought about by post-treatment of the finished product with hot water or steam.

Storage and Handling

In order to avoid pre-mature crosslinking, the POLIDAN[®] TUX 100 compound and its Catalyst CAT 10 shall be stored separately and mixed only when used. The crosslinkable compound shall be used within 6 – 8 hours after bags are opened.

The product shall be stored under the following conditions:

- Closed and unbroken bags
- Ambient temperature not exceeding 40°C
- Indoor in order to avoid direct exposure from sunlight

The product could undergo alterations due to extended period of storage. Solvay Padanaplast suggests the product use within six months from the production date printed on the packaging. Solvay Padanaplast accepts no liability of any kind in case the above mentioned conditions are not fulfilled.

Packaging

POLIDAN[®] TUX 100 is supplied in 500 kg octabins which contain a single moisture resistant bag or in 25 kg moisture resistant bags placed on 1375 kg pallets.

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PHISICAL PROPERTIES	Test method	Units	Values
Density, standard, at 23°C	ASTM D 792	Kg/m ³	953
Melt index, load 5 Kg	ISO 1133	g/10 min	1,3
Gel content	EN 579	%	> 65
CLTE (-100 + 100°C)		µm/m °K	140
CLTE (-90 -30°C)			100
CLTE (-30 + 90°C)			190
Above values are typical averages obtained from 18 x 2 mm all plastic pipe specimens, extruded with 95% of Polidan® TUX 100 and 5% of Catalyst CAT 10 and cured in 95°C hot water for 12 hours.			

MECHANICAL PROPERTIES	Test method	Units	Values
Tensile testing	ISO 527, Test Spec. ISO 1B, 50 mm/min		
Yield strength at -40°C		MPa	47
Elongation at Yield at -40°C		%	7
Yield strength at 23°C		MPa	26
Elongation at Yield at 23°C		%	8
Yield strength at 100°C		MPa	6
Elongation at Yield at 100°C		%	16
Elongation at Break at -40°C	25 mm/min	%	110
Elongation at Break at 23°C			390
Elongation at Break at 100°C			170
Tensile Modulus (Young)	1 mm/min	MPa	
at -40°C			3300
at 23°C			1250
at 100°C			130
Flexural modulus	ISO 178	MPa	
at -40°C			2600
at 23°C			1200
at 100°C			167
Charpy Impact resistance	ISO 179 / 1A	kJ/m ²	
at -40°C			15
at -25°C			partial break
at 23°C			partial break
at 100°C			no break
Point VICAT (5 kg)	ISO 306 / B 50	°C	88

Technical Service

POLIDAN® TUX 100 is part of the Solvay Padanaplast POLIDAN® product range. Solvay Padanaplast Technical Service is available to assist customers with further information and advice including the start-up and also for any eventual necessity during the use of the product.

Disclaimer

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This document substitutes and replaces any previous publication on POLIDAN® TUX 100.

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