



Hostalen GM 5010 T3 black

Polyethylene, High Density

Product Description

Hostalen GM 5010 T3 black is a high density polyethylene (HDPE), black coloured similar RAL 9004 with high melt viscosity for extrusion, injection and compression moulding. The product is classified as PE 80 and provides excellent stress crack resistance properties (ESCR) combined with very good long term hydrostatic strength.

It is not intended for medical and pharmaceutical applications.

Product Characteristics

Status	Commercial: Active
Test Method used	ISO
Availability	Europe, Asia-Pacific, Australia/NZ, Africa-Middle East, Latin America
Processing Methods	Extrusion Pipe Sheet and Semi Finished Products
Typical Customer Applications	Drinking Water Pipe, Gas Pipe, Industrial, Soil & Waste Pipe

Typical Properties	Method	Value	Unit
Physical			
Density	ISO 1183	0.957	g/cm³
Melt flow rate (MFR)	ISO 1133		
(190°C/21.6kg)		9.0	g/10 min
(190°C/5.0kg)		0.43	g/10 min
Staudinger index Jg	ISO 1628	310	ml/g
Mechanical			
Tensile Modulus (23 °C, v = 1 mm/min, Secant)	ISO 527-1, -2	1050	MPa
Tensile Stress at Yield (23 °C, v = 50 mm/min)	ISO 527-1, -2	22	MPa
Tensile Strain at Break (4 mm, 23 °C, 50 mm/min, Compression molding)	ISO 527-1, -2	600	%
Note: Tensile bar, cutted from compression molded plate			
Tensile Strain at Yield (23 °C, v = 50 mm/min)	ISO 527-1, -2	8	%
Tensile Creep Modulus 1h	ISO 899-1	640 [2.0]	MPa
Note: [Test stress in MPa]			
Tensile Creep Modulus 1000h	ISO 899-1	300 [2.0]	MPa
Note: [Test stress in MPa]			
Maximum elongation TD	EN 638	≥ 350	%
Note: Tensile bar, cutted from pipes acc EN 638			
MRS classification	ISO/TR 9080	8	MPa
Flexural stress at 3,5% deflection	ISO 178	18	MPa
FNCT (4.0 MPa, 2% Arkopal N 100, 80°C)	ISO 16770	≥ 500	h
Flexural creep modulus	DIN 19537-2		
(4 point loading method, 1 min-value)		1000	MPa
(4 point loading method, 24 h-value)		470	MPa
(4 point loading method, 2000 h-value)		300	MPa
Impact			
Charpy notched impact strength	ISO 179		
(23 °C)		24	kJ/m²
(-30 °C)		8	kJ/m²
Hardness			
Shore hardness (Shore D (3 sec))	ISO 868	59	
Thermal			
Vicat softening temperature (VST/B/50 K/h (50 N))	ISO 306	70	°C
Oxidation induction time (OIT) (210°C)	ISO 11357-6 / EN 728	30	min
Additional Information			
Carbon black content	ISO 6964	2.25	%
Odor treshold	EN 1622/EN 1420	< 2.0	

Additional Properties

Processing:

Recommended melt temperatures: 190-220 °C.

Recommended injection moulding temperatures: 200-210°C

Notes

Typical properties; not to be construed as specifications.

Further Information

Conveying:

Conveying equipment should be designed to prevent production and accumulation of fines and dust particles that may be contained to a small extent in polymer materials. These particles can under certain conditions pose an explosion hazard. We recommend the conveying system used is equipped with adequate filters, is operated and maintained so that no leak develops and adequate electrical grounding exists at all times.

Health and Safety:

Special requirements apply to certain applications such as food contact end-use and direct medical use. For specific information on regulatory compliance contact your local representative.

Workers should be protected from the possibility of skin or eye contact with molten polymer. Safety glasses are suggested as a minimum precaution to prevent mechanical or thermal injury to the eyes.

Molten polymer may be degraded if it is exposed to air during any of the processing and off-line operations. The products of degradation have an unpleasant odour. In higher concentrations they may cause irritation of the mucus membranes. Fabrication areas should be ventilated to carry away fumes or vapours. Legislation on the control of emissions and pollution prevention must be observed. If the principles of sound manufacturing practice are adhered to and the place of work is well ventilated, no health hazards in processing the material have been reported.

The material will burn when supplied with excess heat and oxygen. It should be handled and stored away from contact with direct flames and/or ignition sources. In burning the material generates considerable heat and may generate dense black smoke. Minor fires can be extinguished by water, developed fires should be extinguished by heavy foams forming an aqueous or polymeric film. For further information about safety in handling and processing please refer to the Material Safety Data Sheet (MSDS).

Storage:

The material is packed in 25 kg bags or in bulk containers protecting it from contamination. Storage times of natural materials longer than 6 months may have a negative influence on the quality of the final product (for example the brightness). It is generally recommended to convert all materials latest within 6 months from the date of delivery.

The material is subjected to degradation by ultra-violet radiation or by high storage temperatures. Therefore the material must be protected from direct sunlight, temperatures above 40°C and high atmospheric humidity during storage.

Further unfavourable storage conditions are large fluctuations in ambient temperature and high atmospheric humidity. These conditions may lead to moisture condensing inside the packaging. Under these circumstances, it is recommended to dry the material before use. Unfavourable storage conditions may also intensify the material's slight characteristic odour.

Due the hygroscopic character of the carbon black pigments, black coloured materials may pick up moisture even under appropriate storage conditions. If this is the case it is recommended to dry the material before processing. After a storage period of more than 3 months drying of such material is recommended as standard practice.