Technical Data Sheet
HDPE

I. Physical Properties

	Test method	Unit	Value
1. Specific gravity (ρ)	ISO 1183	g/cm³	0,95
2. Water absorption	ISO 62	%	0,5
3. Humidity absorption			0,01
4a. Maximum Long-term Service Temperature	UL746B	°C	90
4b. Minimum Long-term Service Temperature			-50

II. Mechanical Properties

	Test method	Unit	Value
1. Tensile strength at yield (σ_S)	ISO 527	MPa	27
2. Elongation at yield. (ε_S)		%	18
3. Tensile strength at break (σ_R)		MPa	5
4. Elongation at break (ε_R)		%	≥ 70
5. Impact strength (a_n)	ISO 179	kJ/m²	n.b.
6. Notch impact strength (a_k)			20
7. Ball indentation (H_k)/Rockwell hardness	ISO 2039	MPa	-
8. Shore-D	ISO 868		69
9. Flexural strength ($\sigma_{B\,3,5\,\%}$)	ISO 178	MPa	22
10. Modulus of elasticity (E_t)	ISO 527		1040

III. Thermal Properties

		Test method	Unit	Value
1. Vicat-softening point	VST/B/50	ISO 306	°C	80
	VST/A/50			125
2. Heat deflection temperature	HDT/B	ISO 75		69
	HDT/A			-
3. Coef. of linear thermal expansion (α)		ISO 11359	$K^{-1}*10^{-4}$	1,5
4. Thermal conductivity at 20 °C (λ)		ISO 22007-4	W/(m*K)	0,42
5. Glass transition temperature. (T_g)		ISO 3146	°C	-110
6. Melting temperature (T_m)				130

IV. Electrical Properties

	Test method	Unit	Value
1. Volume resistivity (ρ_D)	IEC 60093	Ω*cm	$> 10^{13}$
2. Surface resistivity (R_o)		Ω	$> 10^{13}$
3. Dielectric constant at 1MHz (ε_r)	IEC 60250	-	2,35
4. Dielectric loss factor at 1 MHz (tanδ)		-	-
5. Dielectric strength	IEC 60243-1	kV/mm	45
6. Tracking resistance	IEC 60112	V	-

V. Additional Data

	Test method	Unit	Value
1. Bondability	-	-	+
2. Physiological indifference according	EEC	-	+
	FDA	-	+
3. Flammability	UL 94	-	HB
4. Limiting Oxygen Index (LOI)	ASTM D2863	%	18
4. UV stabilisation	-	-	-

These values have been generated by experts and contain our current experience. They can therefore be described as highly applicable without being mandatory for every case of application. On the finished product, some of these properties may deviate from these values, especially since these values were determined by mean value methods, on semi-finished products from manufactured test specimens according to DIN EN 15860. These are typical values and not guaranteed properties and should therefore not be used for specifications. In the case of missing measured values, raw material data were used if available.

n.b.= no break + = yes o = limited - = no / no data available