MATERIAL CHARACTERISTICS OVERVIEW

ISO-TECH Kunststoff GmbH

Material name	Short sign (ISO 1043-1)	Density (DIN EN ISO 1183-1)	Molecular weight	Water absorption (DIN EN ISO 62)	Elongation at tensile stress (DIN EN ISO 527-2)	Elongation at break (DIN EN ISO 527-2)	Notched impact strength (Charpy) (DIN EN ISO 179)	Ball indentation hardness (ISO 2039-1)	Shore D-hardness (DIN EN ISO 868)	Wear resistance (Sand-Slurry) (DIN EN ISO 15527)	Friction coefficient	Compression strength (1 % / 2 % / 5 %)	Modulus of elasticity (tensile test) (DIN EN ISO 527-2)	Modulus of elasticity (flexural test) (DIN EN ISO 178)	Compression modulus (DIN EN ISO 604)	Elongation at yield (DIN EN ISO 527-2)	Tensile strength (DIN EN ISO 527-2)	Bending strength (DIN EN ISO 178)	Thermal conductivity at 23 °C (DIN EN 52612)	Application temperature short-time	Application temperature long-time	Flammability (UL 94)	Melting temperature (DIN EN ISO 11357)	Thermal expansion (long; 23 - 60 °C) (DIN EN ISO 11359-1;2)	Thermal expansion (long; 23 - 100 °C) (DIN EN ISO 11359-1;2)	Thermal expansion (long; 100 - 150 °C) (DIN EN ISO 11359-1;2)	Deflection temperature (ISO 75)	Specific flow resistivity (DIN IEC 60093)	Specific surface resistivity (DIN IEC 60093)	Dielectric strength (DIN IEC 60243)	Dielectric constant (ASTM D 150)	Creep resistance (IEC 60112)	Food conformity (EU 10/2011)	Food conformity (FDA)	UV-resistance	Specific characteristics
		g / cm³	g / mol	%	MPa	%	kJ / m²	MPa		%	µ	MPa	MPa	MPa	MPa	%	MPa	MPa	W / (K x m)	°C	°C		°C	10^{-5} K^{-1}	10^{-5} K^{-1}	10^{-5} K^{-1}	°C	Ω x cm	Ω	kV / mm		V					
	general				mechanic														thermal										electric					additional information			
ISO-LEN® 1000 natural	PE-UHMW	<0,96	>5x10^6	<0,01	≈ 20	>300	o. B.	>30	61	100	≈ 0,2	u. r.	>700						0,4	-200 +90	-200 +80	HB	130-135	20				≤10^{12}	≤10^{12}	≤45			yes	yes		highest abrasion resistance, excellent sliding properties
ISO-LEN® 1000 black virigin AST	PE-UHMW	<0,96	>5x10^6	<0,01	≈ 20	>300	o. B.	>30	61 - 63	110	≈ 0,2	u. r.	>700						0,4	-150 +90	-150 +80	HB	130-135	20				≤10^{5}	≤10^{8}	≤45			no	yes	UV-s	antistatic, high abrasion resistance, excellent sliding properties
ISO-LEN® 1000 black virigin electrically conductive	PE-UHMW	<0,96	>5x10^6	<0,01	≈ 20	>300	o. B.	>30	61 - 63	110	≈ 0,2	u. r.	>700						0,4	-150 +90	-150 +80	HB	130-135	20				≤10^{4}	≤10^{6}	≤45			no	yes	UV-s	electrically conductive, high abrasion resistance, excellent sliding properties
ISO-LEN® HOT	PE-UHMW	<0,96	9,2x10^6	<0,01	≈ 20	>200	o. B.	>30	61 - 63	≥90	≈ 0,2	u. r.	>700						0,4	-150 +110	-150 +90	HB	130-135	20				≤10^{12}	≤10^{12}	≤45			yes	yes		higher application temperatures, excellent sliding properties
ISO-LEN® P	PE-UHMW	<0,96	9,2x10^6	<0,01	≈ 20	>200	o. B.	33	61	≥90	>0,2	u. r.	<700						0,4	-200 +90	-200 +80	HB	130-135	20				≤10^{12}	≤10^{12}	≤45			no	no		increased wear resistance with abrasive media, optimized torsion stiffness
ISO-MOL®	PE-UHMW	0,93	9,2x10^6	<0,01	≈ 20	>200	o. B.	>30	61	73	≈ 0,08	u. r.	>700						0,4	-200 +90	-200 +80	HB	130-135	20				≤10^{12}	≤10^{12}	≤45			yes	yes		similar to ISO-LEN 1000, but with even better sliding properties and wear resistance
ISO-LEN® 1000 (Reg.) (green / black)	PE-UHMW	<0,96	2 - 5x10^6	<0,01	≈ 20	>300	o. B.		61 - 63	>130	≈ 0,2	u. r.							0,4			HB	130-135	15 - 20				≤10^{12}	≤10^{12}	≤45			no	no	UV-s	regenerate material, good sliding properties, good colour purity
ISO-LEN® 1000 black-multicoloured finemilled (Reg.)	PE-UHMW	<0,96	2 - 5x10^6	<0,01		>300	o. B.		61 - 63	>200	≈ 0,2	u. r.							0,4			HB	130-135	15 - 20				≤10^{12}	≤10^{12}	≤45			no	no	UV-s	regenerate material, good sliding properties
ISO-LEN® WBS (Reg.)	PE-(U/)HMW	<0,96	0,5 - 5x10^6	<0,01		>300	o. B.		61 - 65	>250	≈ 0,2	u. r.							0,4			HB	130-135	15 - 20				≤10^{12}	≤10^{12}	≤45			no	no	UV-s	Special material for fender applications; good damping properties
ISO-LEN® 500 natural	PE-HMW	<0,96	0,5x10^6	<0,01	≈ 25	>500	o. B.	>35	63 - 65	350	≈ 0,2	u. r.	>800						0,4	-100 +90	-100 +80	HB	130-135	15				≤10^{12}	≤10^{12}	≤45			yes	yes		good acid resistance, good sliding properties, physiologically harmless
ISO-LEN® 500 confetti (Reg.)	PE- HMW	<0,96	0,5 - 5x10^6	<0,01		>500	o. B.		61 - 65	>350	≈ 0,2	u. r.							0,4			HB	130-135	15 - 20				≤10^{12}	≤10^{12}	≤45			no	no	UV-s	good sliding properties, inexpensive alternative to uni-coloured PE
ISO-MID PA 6	PA 6	1,15		0,2	80	40	4	170	≈ 80			19 / 36 / 83	3500	3200	2900	4	83	109	0,38	-30 +170	-30 +100	HB	215	12	12			≤10^{14}	≤10^{14}				yes	yes		very hard, tough, low static charge
ISO-MID PA 6 G + Oil	PA 6	1,13		0,2 / 0,4*	66	50	5	150				19 / 35 / 76	2900	2900	2700	8	69	95	0,37	+170	+100	HB	218	13	13			≤10^{14}	≤10^{14}				no***	no***		comparable to PA 6, but with improved sliding properties
ISO-MID PA 6.6	PA 6.6	1,15		0,2 / 0,4*	84	70	5	175				20 / 35 / 81	3500	3100	2700	7	85	110	0,36	+170	+100	HB	258	11	12			≤10^{14}	≤10^{14}				yes	yes		improved strength & higher toughness at higher application temperatures compared to PA 6
ISO-MID PA 12	PA 12	1,02		0,04 / 0,07*	53	200	7	105				13 / 24 / 55	1800	1700	1600	9	53	68	0,30	+150	+110	HB	180	15	16			≤10^{14}	≤10^{14}				no***	no***		very high toughness & dimensional stability, good chemical resistance
ISO-POM	POM	1,41		0,05	67	32	8	165	≈ 83			20 / 35 / 68	2800	2600	2300	9	67	91	0,39	-50 +140	-50 +100	HB	166	13	14			≤10^{13}	≤10^{14}	49		600	yes	yes		very hard, impact resistant, good machinability, high heat resistance
ISO-PET	PET	1,36		0,03	79	10	4	175				19 / 35 / 83	3100	3200	2700	5	79	121	0,31	-20 +170	-20 +110	HB	244	8	10			≤10^{14}	≤10^{14}			600	no***	no***		very hard, low cold flow, dimensionally stable
ISO-PP	PP	0,93		0,01	34	67		100				16 / 26 / -	2000	1800	1600	5	34	54		+140	+100	HB	165	13	14		87	≤10^{14}	≤10^{14}				no***	no***		good chemical resistance, good electrical insulation
ISO-PEEK	PEEK	1,31		0,02	116	15	4	253	≈ 88			23 / 43 / 102	4200	4200	3400	5	116	175	0,27	-50 +300	-50 +260	V0	341	5	5	7	162	≤10^{15}	≤10^{15}	73		125	yes	yes		good chemical resistance, very hard, very high operating temperature
ISO-PTFE	PTFE	2,15		<0,01		220			55								22		0,20	-200 +260	-200 +260	V0						≤10^{17}	≤10^{16}	80	2,1		yes	yes		very good chemical resistance, high long-term operating temperature, excellent sliding properties
ISO-PVDF	PVDF	1,78		<0,01	62	17		129				16 / 28 / 59	2200	2100	1900	8	62	77	0,25	-30 +150	-30 +150	V0	171					≤10^{14}					no***	no***		high chemical resistance, abrasion resistant

Legend: o. B. = no break HB = Horizontal burning test class HB V0 = Vertical burning test class V0 UV-s = uv-stabilised u. r. = upon request *24h / 96h **colour-depending ***eventually available upon request