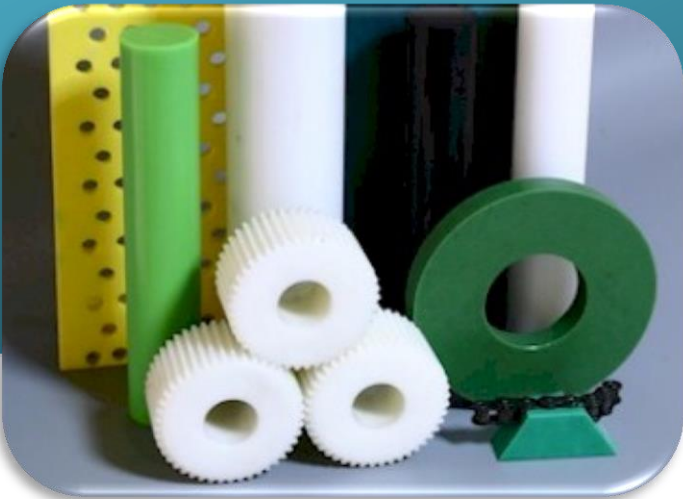


OMEGA- ULTRA® Ultra-high molecular weight Polyethylene (UHMWPE)



The **OMEGA- ULTRA® Ultra-high molecular weight Polyethylene (UHMWPE)** has a high abrasion resistance (very good glide characteristics) and a high toughness at the same time. The chemical and the crack resistance are optimised in comparison to the standard high density Polyethylene, and is therefore suitable for applications subject to continuous shocks. The operating temperature of UHMWPE is from -150°C to +90°C.

MAIN ADVANTAGES OF OMEGA-ULTRA® UHMWPE SHEET AND ROD

- Low density and easy machinability
- High toughness (also at low temperatures)
- Very good electrical and dielectric properties
- Very low water absorption
- Good protection against stress cracking
- Food safe
- Low steam permeability
- Low coefficient of friction and high abrasion resistance
- Very high surface release properties – promotes flow

WEAKNESSES OF OMEGA-ULTRA® UHMWPE SHEET AND ROD

- Soft surface (low tensile strength)
- HF welding not recommended
- Natural colour is not weather resistant

APPLICATIONS

- Conveyor wear strips
- Guide Rails
- Bearings, Bushes
- Chute linings
- Pipe for distribution of slurry materials
- Other components requiring maximum abrasion resistance and impact strength and a low friction coefficient



DELIVERY PROGRAM

SHEET SIZES: 2000mm x 1000mm; 3000mm x 1500mm; 3000mm x 2000mm; 3000mm x 1220mm

THICKNESSES: 3mm; 6mm, 8mm, 10mm, 12mm, 15mm, 20mm, 25mm, 30mm, 35mm, 40mm, 45mm, 50mm, 60mm, 70mm, 75mm, 80mm, 90mm, 100mm, 110mm, 120mm, 130mm, 140mm, 150mm, 160mm, 170mm, 180mm, 190mm, 200mm

RODS: Lengths 1000mm & 2000mm

DIAMETERS: 10mm, 12mm, 15mm, 20mm, 25mm, 30mm, 35mm, 40mm, 45mm, 50mm, 55mm, 60mm, 70mm, 75mm, 80mm, 85mm, 90mm, 95mm, 100mm, 110mm, 120mm, 125mm, 130mm, 140mm, 150mm, 160mm, 170mm, 175mm, 180mm, 190mm, 200mm, 210mm, 225mm, 230mm, 240mm, 250mm

PROPERTIES of OMEGA-ULTRA® UHMWPE

Criteria	Test Method	Units	STD	SR	AST	FDR	MAT	FLM	SLD	BLU
PHYSICAL										
Specific Gravity	ISO 1183	g/cm ³	0,93	0,95	0,95	0,95	0,93	0,98	0,93	0,96
Specific Volume	ISO 1183	cm ³ /g	1,08	1,05	1,05	1,05	1,08	1,02	1,08	1,04
THERMAL										
Min Service Temp		°C	-260	-260	-260	-260	-260	-260	-260	-260
Max Service Temp		°C	95	95	95	95	95	95	95	95
Max Service Temp Short Term		°C	125	125	125	125	125	110	110	110
Melting Point		°C	135	135	135	135	135	135	135	135
Thermal Conductivity	ISO8302	W/(mK)	0,41	0,41	0,41	0,41	0,4	0,35	0,41	0,38
Heat Distortion at 1.80Mpa	ISO 75	°C	44	44	44	44	44	44	44	44
Heat Distortion at 0.45Mpa	ISO 75	°C	70	70	70	70	70	70	70	70
Specific Heat	ISO 22007	J/g.K	1,84	1,84	1,84	1,84	1,84	1,84	1,84	1,84
Flammability	UL-94		HB	HB	HB	HB			HB	
Coefficient of Linear Expansion	ISO 11359	10 ⁻⁵ m/m°C	21,0	21,0	21,0	21,0	21,0	21,0	21,0	23,0
MECHANICAL										
Impact resistance	ISO 179	KJ/m ²	no br.	no br.	no br.	no br.	no br.	no br.	no br.	no br.
Ball Indentation Strength	ISO 2039	MPa	38	38	38	38	38	38	38	38
Hardness	ISO 2039	Shore (D)	D63	D63	D63	D65	D60	D63	D63	D63
Notched Izod Impact Strength (Charpy)	ISO 180	J/m	no br.	no br.	no br.	no br.	no br.	no br.	no br.	no br.
Moisture Absorption	ISO 62	%	0,015	0,015	0,015	0,015	0,015	0,015	0,015	0,015
Moisture Absorption at Saturation	ISO 62	%	0,02	0,02	0,02	0,02	0,02	0,02	0,02	0,02
Resistance to UV/ Weathering			NO	NO	NO	NO	NO	NO	NO	NO
Wear			12	12	12	12	14	12	12	12
Friction Sliding Coefficient vs steel	ISO 8295	MPa	0,18	0,18	0,18	0,18	0,08	0,22	0,15	0,22
Friction Sliding Coefficient vs self	ISO 8295	MPa	0,12	0,20	0,20	0,15	0,08	0,22	0,20	0,22
Tensile Strength at Yield	ISO 527	MPa	20	20	22	22	20	22	20	23
Tensile Strength at Break	ISO 527	MPa	40	40	40	40	40	40	40	40
Compressive Strength	ISO 604	MPa	4,5	4,5	4,5	4,5	4,5	4,5	4,5	4,5
Elongation at Break	ISO 527	%	350	300	350	300	300	300	300	350
Creep Rupture Strength		MPa	18	14	18	18	14	18	18	18
Flexural Strength	ISO 178	MPa	-	-	-	-	-	-	-	-
Flexural Modulus	ISO 178	MPa	689-1172	689-1172	689-1172	689-1172	689-1172	689-1172	689-1172	689-1172
Modulus of Elasticity	ISO 527	MPa	650	650	650	650	650	650	650	650
ELECTRICAL										
Dielectric Strength	IEC243	kV/mm	45			45	45		45	45
Dielectric Constant	IEC250	at 1 kHz	2,3	2,3	2,3	2,3	2,3	2,3	2,3	2,3
Surface Resisitivity	IEC 60093	Ω	> 10 ¹²	> 10 ¹²	> 10 ¹²	> 10 ¹²	> 10 ¹²	> 10 ¹²	> 10 ¹²	> 10 ¹²
Volume Resistivity	IEC 093	Ω. Cm	>10 ¹⁴	>10 ¹⁴	>10 ¹⁴	>10 ¹⁴	>10 ¹⁴	>10 ¹⁴	>10 ¹⁴	>10 ¹⁴
Dissipation Factor	IEC 250	at 1 kHz	0,0002	0,0002	0,0002	0,0002	0,0002	0,0002	0,0002	0,0002
Arc Resistance	D495	s	250-350	250-350	250-350	250-350	250-350	250-350	250-350	250-350
CHEMICAL										
Acids			G	G	G	G	G	G	G	G
Poor Resistance			hot water, washing soda							
Food Safe	FDA		YES	NO	NO	NO	YES	NO	NO	NO