



Lighter than water, stronger than steel

A Polikim Classic in Engineering Plastics

ULPOLEN®

UHMWPE

Ulpolen® is a registered trademark of Polikim A.S.



ULPOLEN®

General Properties



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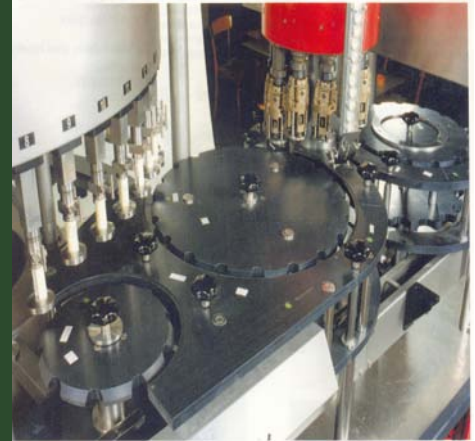
ULPOLEN® is a type of polyethylene with average molecular weight over 4 million. **ULPOLEN®**'s resistance to impact and wear is much higher than that of other plastics in a wide temperature interval. **ULPOLEN®**'s most significant advantages are:

- Very high impact resistance
- Very high wear resistance
- Very low coefficient of friction
- High chemical resistance
- Perfect weatherability
- Wide operating temperature interval
- Absorbs vibrations; works silently
- Perfect electrical insulation
- Machined easily on metal and wood workshops
- Lightweight and economical due to low density
- Human health compliant



ULPOLEN®

Standard Types



ULPOLEN® is a registered trademark of Polikim.

ULPOLEN® has different types for different applications:

- **ULPOLEN® 1000**, g/mol >4 million
- **ULPOLEN® 6000**, g/mol= 5—9.2 million

Standard ULPOLEN® 1000 is natural white, black or green.

ULPOLEN® Sheets:

T 1-200mm, WxL 1000x2000 - 1250x3000
- 1000x4000 - 2000x4000 - 1000x6000
- 2000x6000 - 2500x6000mm

ULPOLEN® Rods:

Diameter: ø8-ø300mm
L 1000, 2000, 3000mm

Filled types of **ULPOLEN®** are also present:

- ULPOLEN®AST** - Antistatic
- ULPOLEN®UV** - UV resistant
- ULPOLEN®AG** - Flame retardant
- ULPOLEN®OIL** - Lubricant filled



ULPOLEN®

Technical Values



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ULPOLEN® TECHNICAL VALUES

	Test Method	Unit	Ulpolen®1000	Ulpolen®500	Ulpolen®300
General Properties					
Density	DIN 53479	gr/cm ³	0,94	0,94	0,94
Molecular Weight	DIN 53728-T	gr/mol	>4.000.000	500.000	300.000
Water Absorption	ASTM D570	%	0	0	0
Mechanical Properties					
Tensile Strength at Break	DIN 53455	Kg/cm ²	250	250	250
Elongation at Break	DIN 53455	%	>300	>300	>300
Impact Strength (Notched)	DIN 53453	Kj/m ²	No Break	No Break	12
Impact Strength (Charpy, notched)	ISO 11542/2	Kj/m ²	>210	>25	-
Coefficient of Friction			0,1-0,15	0,15-0,20	0,20-0,25
Hardness	DIN 53505	Shore D	60-68	60-68	60-65
Thermal Properties					
Melting Temperature	ISO 3146	°C	130-138	130-138	127-131
Minimum Allowable Service Temperature in Air - Continuous		°C	-269	-100	-50
Maximum Allowable Service Temperature in Air - Continuous		°C	90	80	70
Coefficient of Linear Thermal Expansion	DIN 53752	°C ⁻¹	2x10 ⁻⁴	2x10 ⁻⁴	2x10 ⁻⁴
Electrical Properties					
Electric Strength	DIN 53481	KV/cm	900	900	700

WEAR RESISTANCE

Ulpolen®'s wear resistance relative to other materials is provided in the Sand and Slurry Test results below. Wear of Ulpolen® 1000 is 100 points. The smaller the test value, the less is the wear.

ULPOLEN 1000	ULPOLEN 500	ULPOLEN 300	HDPE	LDPE	STEEL (ST37)	INOX STEEL	BRONZE	NYLON	DELTRIN	PP	PVC
100	300	400	800	1600	320	550	1260	220	800	900	920

ULPOLEN®

Applications



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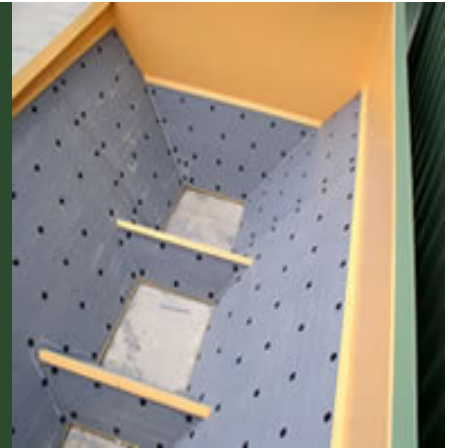
Agricultural machines
Air filters
Bearings
Botling machines
Bucket linings
Bunker linings
Bushes
Canned goods filling lines
Crashing drums
Chain gears
Chain guides
Chain tensioners
Chemical equipment
Conveyor lines
Cutting boards
Deflectors
Directing rods
Dock fenders
Filter press plates
Food production equipment
Gears
Helical carriers

Ice-skate rinks
Kitchen table trays
Material transport equipment
Mixers
Packaging machines
Pulleys
Pump wheels
Rollers
Scrapers
Screws
Sheaves
Ship, yacht fenders
Silo linings
Ski bottoms
Skiing runways
Snow scrapers
Star shaped wheels
Truck bed linings
Water purification system components
Wheels
V-belt guide pims

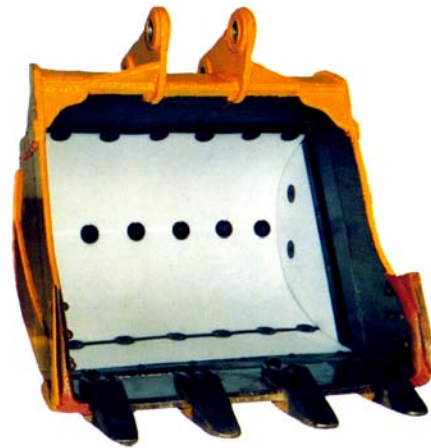
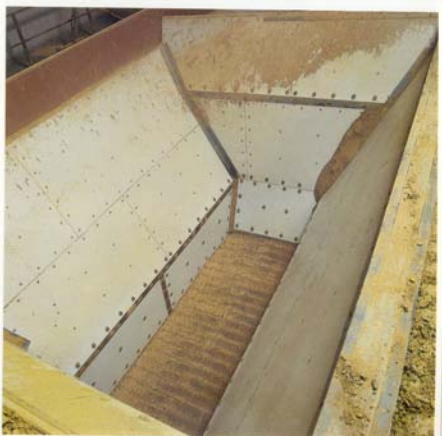
and many others

ULPOLEN®

Applications



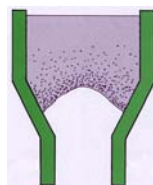
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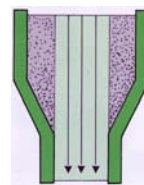
DEFINITE SOLUTION TO STICKING, FLOW AND WEAR PROBLEMS IN BUNKERS, SILOS AND TRUCK BEDS

In stocking and transporting materials such as Coal, Limestone, Cement, Sand, Salt, Clay, Grain etc., to increase the efficiency of excavation.

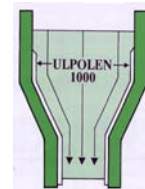
BRIDGING CLOGGING



IRREGULAR CHANNEL FLOW



IDEAL FLOW



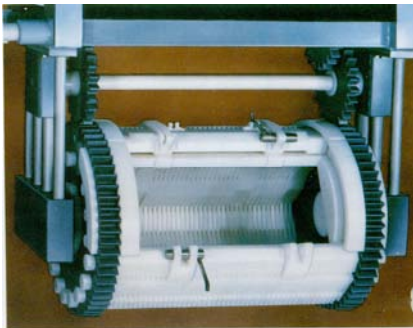
Lining bunkers and silos with **ULPOLEN® 1000** prevents formation of sectional narrowing and bridges. Due to the perfect non-stick property and very low friction coefficient of **ULPOLEN® 1000**, flow is regular.

ULPOLEN®

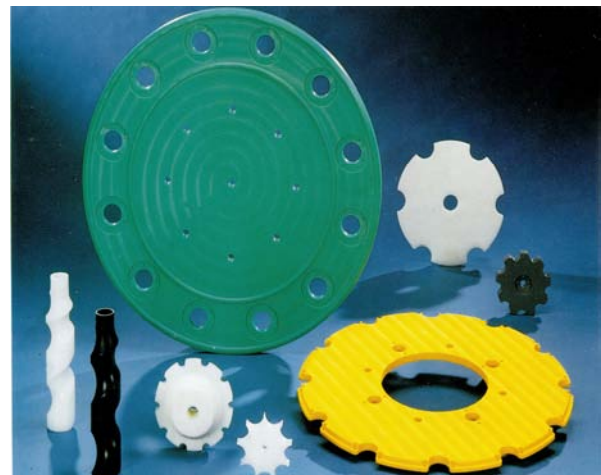
Applications



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Thanks to its perfect wear and impact resistance, low coefficient of friction, silent operation and other superiorities, **ULPOLEN®** 1000 has a very wide range of applications in machinery production such as in botling, packaging, conveyor rollers, chain tighteners and guides, star shaped gears, sliding bearings in elevators etc.....



Leader in engineering plastics production since 1971

EFALON®

KESTAMID®

ULPOLEN®

WE FIND SOLUTIONS TO YOUR PROBLEMS

Efalon®, Kestamid®, Ulpolen® are registered trademarks of Polikim.

EFALON®, PTFE T-100



EFALON® is Polikim's PTFE material. It has superior properties that can't be found in combination in any other material. It is resistant to all chemicals used in manufacturing and can be used between -260°C and $+270^{\circ}\text{C}$. Nothing sticks onto its surface and is more slippery than ice.

KESTAMID®, PA6G Standard



With its outstanding mechanical, physical and chemical properties, **KESTAMID®** is one of the most commonly used engineering plastics. **KESTAMID®** has good impact and wear resistance and fatigue strength. It is engineering plastic replacing metals.

ULPOLEN®, UHMWPE 1000



ULPOLEN® is a type of polyethylene with very high molecular weight. Its density and water absorption are low. **ULPOLEN®** has very different properties than HDPE. It has utmost impact and wear resistance. Its coefficient of friction is low. Its chemical resistance and electrical properties are good.

POLIKİM
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