



ABOUT US

Mat Teknik Plastik Ltd. Şti. was established in 1993 as a small, three partner company. In short time, it became a family company and continued its trade business in Engineering Plastics.

In 1995, Mat Teknik Plastik Ltd. Şti. started manufacturing Polytetrafluoroethylene (PTFE) with small quantities by importing PTFE powder as raw material. In 1997, by moving to its own facility, it expanded product variety and production capacity, improved the quality.

When the year was 2001, our subsidiary company PLASTEK TEKNİK PLASTİK LTD. ŞTI was established and started manufacturing special seal parts from PTFE. Plastek Teknik Plastik was specialised especially manufacturing PTFE gaskets and rings used in ball valves.

As parallel to our increasing potential, our companies was moved to their factory building which has thousand square meters indoor space in 2006. We are still residing in our same factory building that is in Dudullu Organised Industrial Zone.

Our companies are manufacturing Engineering Plastics with more than twenty qualified employees and engineers by using fully automated press machines and CNCs. We are serving our industry with consumption of approximately 60.000 Kgs of PTFE annually.

In addition to PTFE, by importing other Engineering Plastics such as polyethylene (PE), polyamide (PA), polyoxymethylene (POM), we have generated a large inventory. We are selling those semi-finished materials as sheet, tube and wedge.

Moreover, when there is need from companies and people, we provide technical assistance and consultancy services.

POLYTETRAFLUOROETHYLENE (PTFE)



VIRGIN PTFE

PTFE is now by its trade name Teflon, has many properties due to its molecular structure which no other material has. In addition to this special structure, to improve the mechanical property it is compounded with carbon, fiberglass and bronze.

FEATURED PROPERTIES

Very low friction coefficient, high temperature resistance (-250c/+270c), no chemical reaction with other materials, non-burning property, non-sticking, high electrical resistance, heat isolation.

Usage Areas:

- ◆ As piston ring in oxygen, hydrogen, nitrogen gas compressors
- ◆ As gasket, mat, bearing in hydraulic systems
- ◆ In all bearings when there is a problem about oiling
- ◆ Electrical insulator
- ◆ In laboratory equipments when chemical resistance needed
- ◆ Ball valve rings

POLYTETRAFLUOROETHYLENE (PTFE)



PTFE COMPOUNDS

Carbon Compounded PTFE: There are two types of carbon compounded PTFE which involves %25 and %35 carbon. Compared to virgin PTFE, it has lower thermal expansion, higher wear resistance.

Bronze Compounded PTFE: Compared to virgin PTFE, it has higher conductivity, lower thermal expansion, higher wear resistance.

Fiberglass Compounded PTFE: There are two types of fiberglass compounded PTFE which involves %15 and %25 fiberglass. Compared to virgin PTFE, it has lower thermal expansion, higher wear resistance and lower deformation under load.



Featured Properties:

Very low friction coefficient, high temperature resistance (-250c/+270c), no chemical reaction with other materials, non-burning property, non-sticking, high electrical resistance, heat isolation

POLYETHYLENE (PE)

PE is divided into two major groups which are ultra high molecular weight PE and low-medium molecular weight PE. Low-medium molecular weight PE is divided into subgroups according to their densities. Materials which are under those subgroups have molecular weight around 100.000 and in daily life, they are used as nylon bag, serum cover. Their row material is produced in Turkey.

ULTRA HIGH MOLECULAR WEIGHT POLYETHYLENE (UHMW-PE)

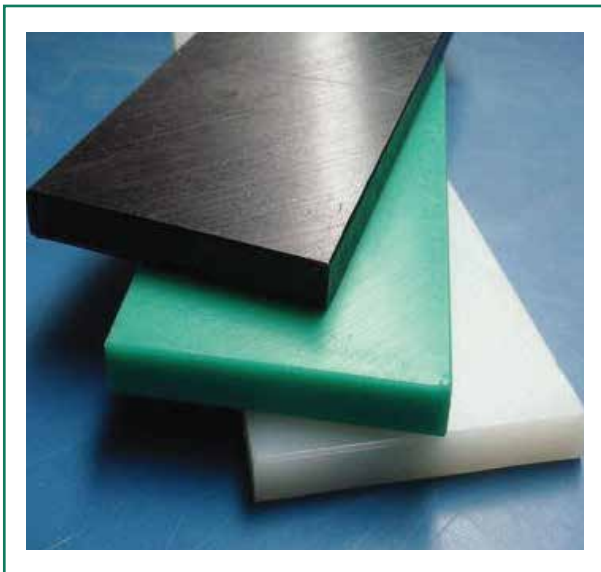
As the molecular weight of the material increases, mechanical properties such as wear resistance also increase. Due to this property it has many advantages compared to other groups of PEs. We can divide PE into two groups whose row material are not produced in Turkey:

- a) High Molecular Weight Polyethylene: PE300 and PE500. They have molecular weight of 300.000 and 500.000.
- b) Ultra High Molecular Weight Polyethylene: PE1000. It has molecular weight of 4.500.000

POLYETHYLENE PROPERTIES

UHMW-PE has high impact resistance, high wear resistance and low friction coefficient. Due to those properties it is used in:

- ◆ Bottle filling machines as chain bed
- ◆ Wear plate
- ◆ Coal and mining industry as bunker cover
- ◆ Filter press plate
- ◆ Pier fender
- ◆ Chain gear
- ◆ Valve ring
- ◆ Truck dumper bed



CHARACTERISTIC FEATURES

		THERMOPLASTICS						
		Test Mode DNI	Unit	Teflon (PTFE)	Polyethylene (UHMW-PE) 1000	Polyethylene (UHMW-PE) 500	Cast Polyamide	Poliioxymethylene (POM)
INTENSITY		53479	g/cm ³	2,1-2,3	0,95-0,97	0,95	1,14	1,42
MECHANICAL FEATURES	Grabbing Strength	53455	kg/cm ³	140-350	220-440	220-440	600-980	660-850
	Elongation %	53455	%	200-400	15-400	15-60	10-80	15-70
	Flexural Strength	53452	kg/cm ²	50-70	300-400	250-320	500-1300	1000-1200
	Compressive Strength	53453	kg/cm ²	80-120	-	200-300	-	1000-1250
	Impact Resistance	53453	kg/cm ²	13-20	10-18	3-6	4-25	6-12
	Eğilme Modülü	53455	kg/cm ²	3500-5600	8000	10000-16000	18000-39000	27000-30000
	Hardness	D-2240	Shore D	51	63	61	85	85
	Coefficient of Friction	-	-	0,07-0,2	0,2-0,25	0,2-0,25	0,3-0,4	0,2-0,34
	Dehumidification Rate %	53495	-	0	<0,01	<0,01	2-6	0,22-0,25
ELECTRICAL FEATURES	Dielectric Constant	53483	10 ⁶ H ₂	2-2,1	2,3-2,4	2,3-2,4	3,7	3,6-3,8
	Dielectric Strength	53481	Kv/mm	20-50	28-90	20-90	12-150	20-60
THERMAL FEATURES	Melting Point	53736	°C	320-327	130-138	130-136	216-220	175-180
	Deformation Temperature	53461	°C	100	60-95	55-60	80-100	100-135
	Max. Working Temperature	-	°C	270	100-85	80-100	120-160	100-140
	Coefficient of Thermal Expansion	53752	10 ⁻⁶ cm/cm °C	60-120	60-130	60-160	70-100	80-150

KIMYASAL DAYANIM TABLOSU

CHEMICAL MATTER	MAX. TEMPERATURE °C					
	PVC	PP	Delrin	Cast Polyamide	Polyethylene	Teflon
AMMONIA	-	20	20	20	60	270
ACETIC ACID	40	90	20	UD	60	270
THE ACYLATED	20	20	20	20	20	270
COPPER SULFATE	40	70	20	20	60	270
BENZENE	UD	20	40	20	20	270
BROMIC ACID	UD	UD	UD	UD	UD	270
MERCURY	40	60	20	20	60	270
MERCURY CHLORIDE	20	80	20	UD	60	270
ZINC CHLORIDE	20	60	20	20	50	270
ZINC SULFATE	20	80	20	20	50	270
DIESEL (MAZOT)	-	25	40	20	20	270
NATUREL GAS	-	60	-	20	20	270
ETHYL ALCOHOL	40	70	40	-	40	270
ETHYL ACETATE	UD	20	20	20	20	270
FLUORINE (GAS)	UD	UD	UD	20	UD	UD
FORMALDEHYDE %37	20	60	40	UD	50	270
FORMIC ACID	UD	60	UD	20	50	270
PHOSPHORIC ACID %30	20	100	UD	UD	50	270
FREON	20	UD	20	UD	UD	270
FUEL OIL	20	20	40	20	40	270
GAS OIL	20	20	20	20	20	270
GLYCERIN	20	100	50	20	50	270
HEPTANE	20	20	20	20	20	270
HYDROFLUORIC ACID %30	20	80	UD	20	40	270
OXYGEN	40	40	20	UD	40	270
OZONE	20	UD	UD	20	UD	270
POTASSIUM CARBONATE	20	100	20	UD	50	270
CITRIC ACID	40	60	20	20	40	270
SODIUM HYDROXIDE %50	40	90	UD	20	50	270
SODIUM CHLORIDE	40	100	40	UD	50	270
SODIUM NITRATE	20	70	50	20	50	270
SODIUM SULFATE	-	100	-	20	50	270
STEARIC ACID	20	80	20	20	30	270
HYDROGEN PEROXIDE %30	20	50	UD	20	40	270
HYDROGEN SULFIDE	20	70	UD	UD	40	270
HYDROCHLORIC ACID %10	20	80	UD	20	50	270
CHLORINE (GAS)	UD	UD	UD	UD	UD	270
CHLORINE (LIQUID)	UD	-	-	UD	UD	270
CHROMIC ACID %50	20	40	UD	UD	20	270
METHYL ALCOHOL	40	80	50	UD	50	270
NITRIC ACID %10	20	50	UD	20	50	270
SULFURIC ACID %10	20	100	UD	UD	50	270
SULFURIC ACID %50	20	90	UD	UD	50	270
SULFURIC ACID %85	20	80	UD	UD	50	270
SULFURIC ACID %98	-	UD	UD	UD	UD	270
TOLUENE	UD	UD	30	30	20	270
TRICHLORETHYLENE	UD	UD	20	20	20	270
UREA	20	60	20	20	50	270

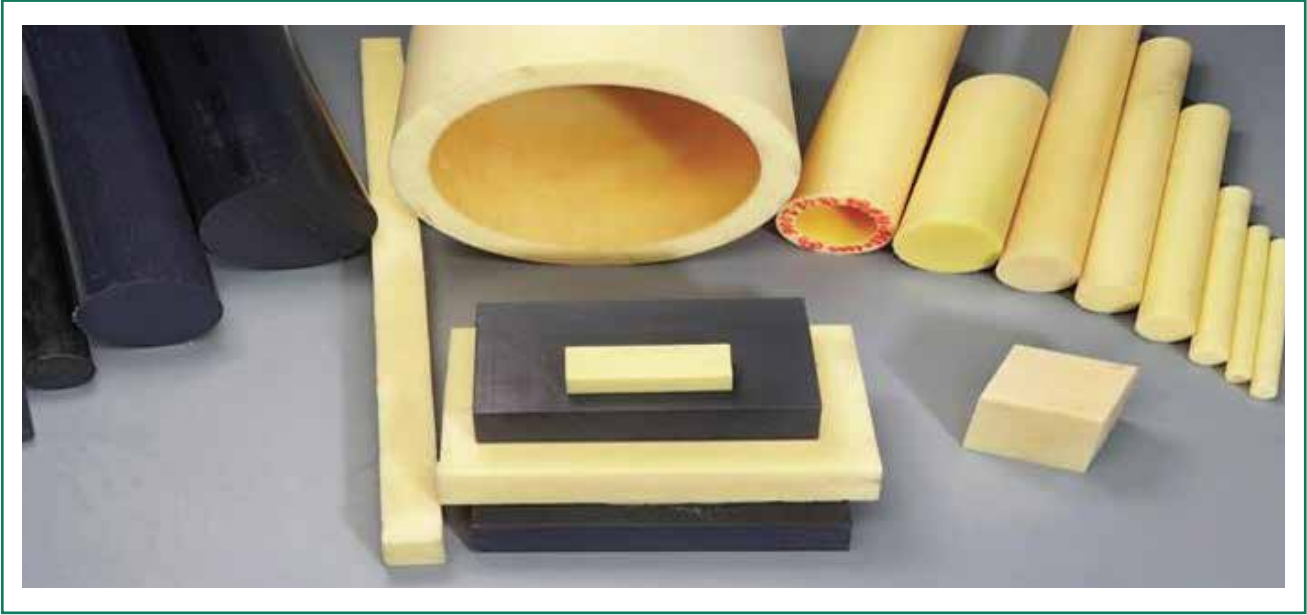
POLYAMIDE (PA)



Polyamide is a kind of engineering plastic that has a hard structure due to its high molecular weight and cross-link molecules. It is resistant to bending and wearing. It is capable of working under load for long time. However, due to its water absorption property, it is recommended to use in dry areas. Its working temperature is between -60°C to $+110^{\circ}\text{C}$.

- ◆ Parts exposed to impact
- ◆ Gear
- ◆ Pulley
- ◆ In areas when there is vibration





Cast polyamide is a kind of a polyamide in chemical properties. Due to its special molecular structure, it is superior than polyamide. It is one of the most common engineering plastics in industry as a result of high mechanical, physical, chemical and electrical properties.

Cast polyamide is resistant to wear and hard material because of its high molecular weight and crystal structure. It has lower water absorption compared to Polyamide 6. To increase the known physical and mechanical properties, it can be compounded with fiberglass and special materials.

FEATURES OF CAST POLYAMIDE

- ◆ No structural change related to time and weather conditions
- ◆ High elasticity
- ◆ No destruction when there is an impact, high electrical resistance
- ◆ Due to lightness and quietness in working environment, most common material in industry

Usage Areas:

Pulley Wheels, gear mechanisms in quiet environment, shafts, chain systems, lift pulley wheels, in textile industry, shuttles.

POLYOXYMETHYLENE (POM)



It is also known as trade name Delrin. Due to its formaldehyde, chemical structure, crystal structure it has many superior properties compared to other plastics.

FEATURES OF DELRIN

Very high mechanical resistance, no material fatigue, very high impact resistance, no deformation under heavy load, low friction coefficient, self oiling, perfect electrical resistance, wide heat range, superior chemical resistance are the most important properties of POM.

- ◆ In conveyor systems
- ◆ Piston production
- ◆ Pulley wheels
- ◆ Machine mold piece
- ◆ Rolling mill bed

Usage Areas:

POLİOKSİMETİLEN'in üstün özellikleri ve kolay işlenebilir oluşu sanayide birçok kullanım alanı ortaya çıkarmıştır. POLİOKSİMETİLEN çeşitli endüstriyel uygulamalarda dişli, yatak, burç kam, makara, tekstil sektöründe çeşitli yedek parça olarak, gıda ve ambalaj sektöründe konveyör sistemlerinde dişli ve aşınma parçaları olarak yaygın şekilde kullanılmaktadır. POLİOKSİMETİLEN'den üretilen parçaların diğer parçalara göre birçok üstünlüklere sahiptir, Bu üstünlüklerden bazıları:

- ◆ Works quiet
- ◆ No need to oil
- ◆ Lighter than metals
- ◆ Not effected by solvents
- ◆ Economical
- ◆ No water absorption
- ◆ High working temperature
- ◆ Low friction coefficient
- ◆ Resistant to electricity
- ◆ Resistant to sudden impacts

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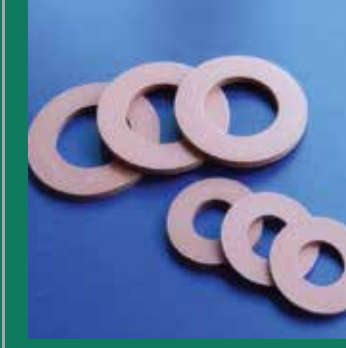
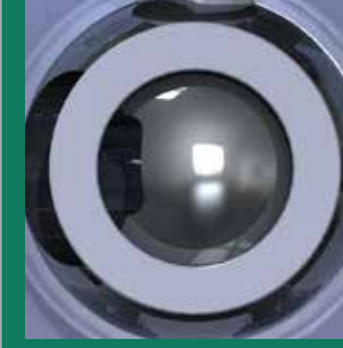
TEKNİK PLASTİK



In addition to stated Engineering Plastics in this catalogue, other plastics such as PVC, POLİPROPİLEN, FİBER are widely kept in our inventory. All materials can be provided as rod, tube, sheet, chuck. In addition to manufacturing, all materials can be sold as semi finished parts. Custom parts of our precious customers can be produced in our machining workshop with CNCs and lathes. Moreover, fully automated presses enables us for mass production of PTFE gaskets and rings. We can provide you gaskets in short time with high quality. When there is a need of consultancy of plastics about usage areas, design and properties, our engineers will be ready to serve you.

MAT TEKNİK PLASTİK SANAYİ VE TİCARET LTD. ŞTİ.

Esenkent Mah. Hoca Nasreddin Cad. No.21 Dudullu / İstanbul
Tel: (0.216) 365 98 40 (hat2) Fax: (0.216) 365 98 42
info@matplastik.com / info@plastekplastik.com



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www.matplastik.com

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