



Flow and Sealing Technology

พลาสติกวิศวกรรม ENGINEERING PLASTIC PRODUCTS

ผู้แทนจำหน่ายสินค้าพลาสติกวิศวกรรมจากต่างประเทศ หลากหลายชนิด เช่น NYLON (PA), MC BLUE, POM, PET, PVC, PEEK, HDPE, HMW-PE (PE500), UHMW-PE (PE1000), PTFE ผู้ออกแบบและผลิตชิ้นส่วนพลาสติกวิศวกรรมด้วยโปรแกรมคอมพิวเตอร์และเครื่องจักรที่มีประสิทธิภาพสูง



GET IN TOUCH

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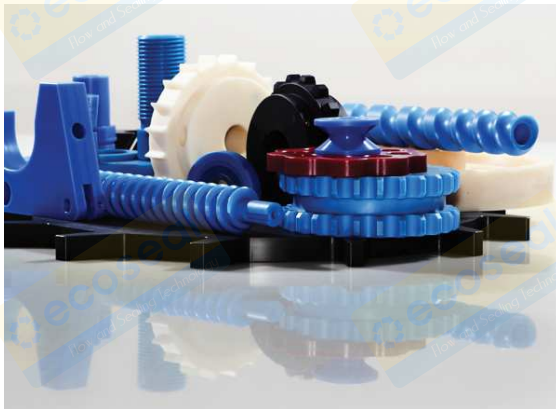


ECOSEAL CO.,LTD.
www.ecosealthailand.com



CAST NYLON

Cast Nylon is manufactured by the pressure-less casting process, where the raw material, Caprolactam, is polymerized through a series of chemical reactions. Cast Nylon shows higher molecular weight and higher degree of crystallinity than the extruded PA6. It offers high strength, high toughness, high resistance to wear, impact and fatigue, and good machinability. Since its first introduction in 1950s, Cast Nylon has been widely used for the various applications in many industries.



Characteristics

- > High Mechanical Strength
- > High Chemical Resistance
- > High Wear Resistance
- > Good Machinability
- > Easy Customized Casting

Applications

Various types of bearing, wheel, gear, sprocket, wear pad, etc



Round Rods



Tube



Sheet & Plate

CAST NYLON



MC-Blue

Basic grade of Cast-Nylon without any additives. The color of MC-Blue is ivory.



MC-NAT/BLK

Basic grade of Cast-Nylon. The color is ivory and black.



MC-Moly

Molybdenum-filled grade with significantly improved sliding and frictional properties. It is suitable for the parts requiring high wear and abrasion resistance.



MC-OIL

Oil-filled grade with improved wear properties. This grade is specialized for the wear parts requiring repetitive movements in high speed under low load.



MC-WAX

Wax-filled grade with improved wear properties. It is specialized for the wear parts requiring repetitive movements in low speed under high load.



MC-ESD-R6

Specialty grade for the applications which require good electro-static dissipative properties. Its internally added graphite leads the electric conductivity into a range between $10^5\Omega$ and $10^9\Omega$.



MC-ESD-R10

It offers excellent anti-static performances, exhibiting consistent level of conductivity ranging between $10^9\Omega$ and $10^{11}\Omega$. The color is beige.



POM-C

PolyOxyMethylene

POM-C

POM-C is a semi-crystalline thermoplastic, offering good frictional properties and dimensional stability. It offers high mechanical strength and toughness coupled with good machinability. For the customers dealing with precision mechanical parts and tight tolerance control, POM-C is the best choice, providing excellent dimensional stability. Especially, its low moisture absorption makes it suitable for the parts used in a submerging condition, since its properties stay unchanged by a wet environment. It also offers excellent resistance to a wide range of organic solvents and chemicals.

Characteristics

- > Excellent Mechanical Properties
- > High Wear Resistance
- > High Dimensional Stability
- > High Chemical Resistance
- > Low Moisture Absorption

Applications

Parts requiring the high dimensional stability (gear, guide roller, bearing, etc), Parts used in a wet environment.



POM-ESD-R10

POM-ESD-R10

POM-ESD-R10 offer excellent anti-static performances, exhibiting consistent level of conductivity ranging between $10^9 \Omega$ and $10^{11} \Omega$. It can be used for various application in semiconductor industry, LCD/TFT -related industries and other electronic/electric industries.



POM-CNT-R6

POM-CNT-R6

This grade is made of CNT (carbon-nano-tube) loaded POM-C resin. It exhibits consistent conductivity ranging between $10^5 \Omega$ and $10^9 \Omega$ with minimum changes in the physical properties of the original POM-C. It can be used in various applications in semiconductor industry, LCD/TFT -related industries and other electronic/electric industries.



Poly Ethylene Terephthalate

PET

PET is one of the most widely used engineering plastics, together with POM-C and MC-NYLON. Its excellent mechanical properties make it suitable for precision mechanical parts. It provides high tensile and mechanical strength, high hardness and good dimensional stability. Due to its low coefficient of friction, PET is often used for the parts requiring high wear resistance such as wear pads, bearing and bushing, wheels and rollers. PET is also suitable for food processing applications, requiring high chemical resistance and low moisture absorption.



Characteristics

- > Excellent Mechanical Properties
- > High Dimensional Stability
- > High Chemical Resistance
- > Low Moisture Absorption
- > Low Thermal Expansion

Applications

Various types of gear, Wear pad, Guide roller, Bearing, Food processing parts.



Round Rods
Grades : PET (NAT)



Sheets & Plates
Grades : PET (NAT)

PEEK *PolyEtherEtherKetone*



PEEK offers excellent mechanical strength, high chemical and hydrolysis resistance, and high steam and radiation resistance. Its continuous service temperature is around 250° C. Its excellent thermal properties make it suitable for the applications used in very high temperatures, while it keeps its physical properties from being affected by the external environment.



Characteristics

- > Excellent Thermal Properties
- > Excellent Mechanical Properties
- > Excellent Wear / Creep Resistance
- > Excellent Chemical Resistance
- > Excellent Radioactive Resistance
- > Nonflammability

Applications

Parts related to semi-conductor facility, LCD-manufacturing facility, fine machining facility, chemical plant, electroplating facility and insulating materials.

PEEK NAT/BLK PEEK-CNT-R6

This grade is made from CNT(carbon-nano-tube) PEEK resin. It keeps the consistent conductivity ranging between 105Ω ~ 109Ω, while the physical properties of the original PEEK stay almost unchanged.



Round Rods

Grades : PEEK(NAT/BLK/CNT-R6)



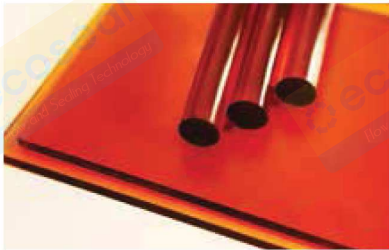
Sheets & Plates

Grades : PEEK(NAT/BLK/CNT-R6)

PEI PolyEtherImide



PEI is a semi-transparent amorphous thermoplastic, offering superb steam and heat resistance and extraordinary dielectric properties. Its continuous service temperature is around 170°C. It is suitable for the applications, requiring high strength and rigidity in elevated temperatures.



● Characteristics

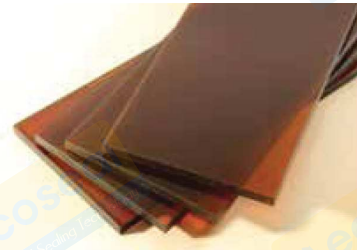
- ▶ High Heat/Steam Resistance
- ▶ Excellent Dielectric Strength
- ▶ Nonflammability

● Applications

Microwave-exposed parts, Electricity-insulating parts, Parts for glass-manufacturing equipment, Steam-cleaning equipment, Heat-insulating sleeves, etc.



Round Rods
Grades : PEI(NAT)



Sheets & Plates
Grades : PEI(NAT)

HDPE *High Density PolyEthylene*



HDPE has been widely used in a variety of applications and industries, due to the economical price and excellent machinability. It offers superb impact resistance, high tensile strength, and high resistance to a wide range of chemicals. Especially, it fully complies with the FDA food-related norms, making it an excellent solution for the food-contact parts. DYNEX manufactures HDPE in a wide range of dimensions.



● Characteristics

- ▶ Economical Price
- ▶ Adaptability to Food-contact Parts
- ▶ Wide Size Ranges
- ▶ Various Applications



● Applications

Food-contact parts, Large-size chopping boards, Guide roller, Conveyor screw, etc.



Round Rods
Grades : HDPE(NAT)



Sheets & Plates
Grades : HDPE(NAT/BLK)

Physical Properties

(Legend)

★ : values referring to dry material

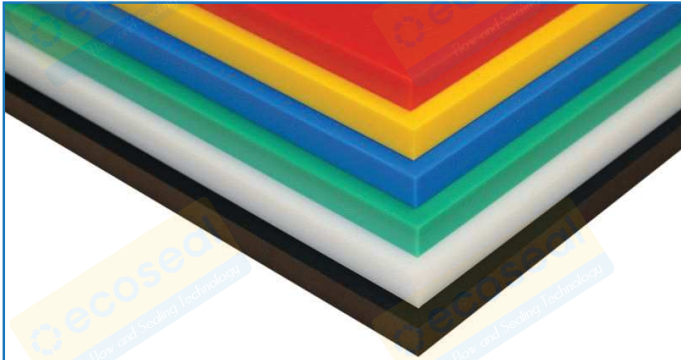
★★ : values referring to material in equilibrium with the standard atmosphere
23°C/50% RH (mostly derived from literature)

PROPERTIES	Method ISO(IEC)	Unit	Cast Nylon		POM-C	PET	HDPE	PEEK	PEI	
			Blue	NAT/BLK	NAT/BLK			NAT/BLK		
Color	-	-	blue	ivory/black	white/black	white	white/black	natural/black	amber translucent	
Density	1183	g/cm ³	1.15	1.15	1.41	1.40	0.95	1.31	1.27	
Water absorption										
after 24/96h immersion in water of 23°C	62	mg	49/93	44/83	20/37	-	-	5/10	20/41	
	62	%	0.72/1.37	0.65/1.22	0.24/0.45	-	0.01/-	0.06/0.12	0.26/0.54	
at saturation in air of 23°C, 50%RH	-	%	2.30	2.20	0.20	0.30	-	0.20	0.75	
at saturation in water of 23°C	-	%	6.60	6.50	0.85	-	0.01	0.45	1.35	
Thermal Properties										
Melting Temperature	-	°C	220	220	165	255	134	340	-	
Thermal conductivity at 23°C	-	W/(K·m)	0.29	0.29	0.31	-	-	0.25	0.22	
Coefficient of linear thermal expansion										
average value btw 23-60°C	-	m/(m·K)	8010 ⁻⁶	8010 ⁻⁶	11010 ⁻⁶	-	-	5010 ⁻⁶	4510 ⁻⁶	
average value btw 23-100°C	-	m/(m·K)	9010 ⁻⁶	9010 ⁻⁶	12510 ⁻⁶	8010 ⁻⁶	15010 ⁻⁶	5010 ⁻⁶	4510 ⁻⁶	
Temperature of deflection under load										
method A : 1.8Mpa	★	75	°C	180	180	105	67	47	160	190
Max. allowable service temp. in air :										
for short periods	-	°C	170	170	140	160	-	310	200	
continuously : 5,000/20,000h(1)	-	°C	105/90	105/90	115/100	-	-	250	170	
Min. service temperature(2)	-	°C	-30	-30	-50	-	-	-	-	
Flammability(3)										
UL94 (3/6mm thickness)	-	-	HB/HB	HB/HB	HB/HB	HB/HB	HB/HB	V-0/V-0	V-0/V-0	
Mechanical Properties at 23°C										
Tension test										
tensile stress	★	527	MPa	81	85	62	80	23	100	105
	★★	527	MPa	50	55	-	-	-	-	-
tensile strain at break	★	527	%	25	25	30	20	>300	15/10	10
	★★	527	%	>50	>50	-	-	-	-	-
tensile modulus of elasticity	★	527	MPa	3200	3500	3100	3200	1000	3900	3400
	★★	527	MPa	1550	1700	-	-	-	-	-
Compression test										
compressive stress at 1/2/5% nominal strain	★	604	MPa	24/47/86	26/51/92	19/35/67	-	-/-/29	29/57/119	25/49/-
Izod impact strength-Notched	★	180/2A	kJ/m	3.5	3.5	4.0	-	no break	4.1	3.0
	★★	180/2A	kJ/m	7.0	7.0	-	-	-	-	-
Rockwell hardness	★	2039-2	-	R118	R118	R115	R120	R60	R120	R126
Electrical Properties at 23°C										
Electric strength(4)	★	(60243)	kV/mm	25.0	25.0	20.0	-	-	24.0	27.0
	★★	(60243)	kV/mm	17	17	-	-	-	-	-
Volume resistivity	★	(60093)	Ω·cm	>10 ¹⁴	>10 ¹⁴	>10 ¹⁴	>10 ¹³	>10 ¹⁴	>10 ¹⁴	>10 ¹⁴
	★★	(60093)	Ω·cm	>10 ¹²	>10 ¹²	-	-	-	-	-
Surface resistivity	★	(60093)	Ω	>10 ¹³	>10 ¹³	>10 ¹³	>10 ¹²	>10 ¹³	>10 ¹³	>10 ¹³
	★★	(60093)	Ω	>10 ¹²	>10 ¹²	-	-	-	-	-
Relative permittivity :										
100Hz	★	(60250)	-	3.6	3.6	3.8	-	-	3.2	3.0
	★★	(60250)	-	6.6	6.6	-	-	-	-	-
1MHz	★	(60250)	-	3.2	3.2	3.8	-	-	3.2	3.0
	★★	(60250)	-	3.7	3.7	-	-	-	-	-
Dielectric dissipation factor :										
100Hz	★	(60250)	-	0.012	0.012	0.003	-	-	0.001	0.002
	★★	(60250)	-	0.14	0.14	-	-	-	-	-
1MHz	★	(60250)	-	0.016	0.016	0.008	-	-	0.002	0.002
	★★	(60250)	-	0.05	0.05	-	-	-	-	-
Comparative tracking index(CTI)	★	(60112)	-	600	600	600	-	-	150	175
	★★	(60112)	-	600	600	-	-	-	-	-

※:Note : 1g/cm³ = 1,000kg/m³, 1MPa = 1N/mm², 1kV/mm = 1MV/m

OKULEN®

Technische Kunststoffe Engineering Plastics



OKULEN® 500, OKULEN® 1000, OKULEN® 2000
Polyethylene delivers the best wear resistance and impact strength of all listed materials. It features a very low coefficient of sliding friction and is also food-safe. Polyethylenes are inexpensive, lightweight alternatives to traditional materials in many cases. Their continuous operating temperature is 80 °C with higher temperatures possible for a short period. Low temperatures do not pose a problem.



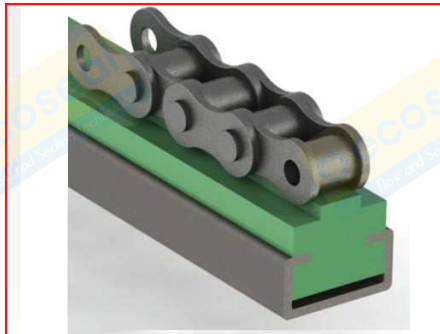
Our PLC systems are controlled by temperature, pressure, and time for extremely efficient production methods while ensuring a consistent level of quality.



Our strength lies in the CNC chip-shaping on machines with three to five axes for turning and milling into finished products, and we also have programming stations equipped with state-of-the-art CAD-CAM computer systems.



Mechanical engineering – plastics as an ideal alternative



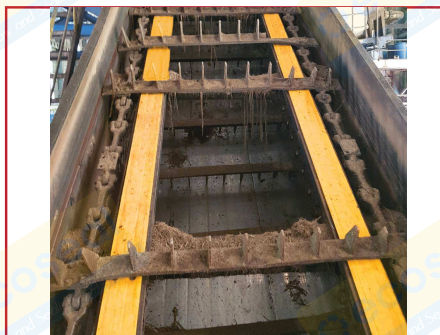
Conveyor technology – time-tested materials in use



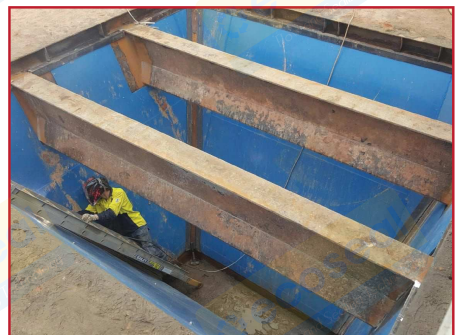
Food industry – hygienic, practical and lightweight



Paper industry – our plastic is ready



Sugar industry - wear resistance, heavy duty load



Wear protection linings -no compromises



OKULEN® 500

OKULEN® 500 has material qualities that make it a cost-effective material of choice for a host of applications. OKULEN® 500 has delivered excellent services due to its cut resistance and damping properties in the food industry and sports centre construction at costs that will accommodate a reasonable earnings-based budget. OKULEN® 500 has been used in many cases requiring standards compliance in food contact, and is ideal for use in cutting boards, as trim or in ramming protection as well as certain mechanical engineering applications.

The main features and strengths of OKULEN® 500:

- High molecular weight, high density polyethylene
- Molecular weight of around 500,000 g/mol
- Wide range of applications, especially food industry and sports centre construction

OKULEN® 500 Materials

- OKULEN® 500 natural FN0000
- OKULEN® 500 yellow FN1000
- OKULEN® 500 red FN3000
- OKULEN® 500 blue FN5100
- OKULEN® 500 AB blue FN5990
- OKULEN® 500 green FN6000
- OKULEN® 500 black FN9000
- OKULEN® 500 UV black FN9100

OKULEN® 1000

OKULEN® has material properties that make it extremely versatile; the material is ideally suited for mechanical engineering – OKULEN® parts are used especially in plant construction and handling technology. The material is also ideal for port construction and hydraulic engineering, as insulating linings for high-traffic areas and in the sports and skiing industry. OKULEN® defies low temperatures and most chemicals, and is highly resistant to abrasion.

The main features and strengths of OKULEN® 1000:

- Ultra-high molecular weight, low pressure polyethylene
- Molecular weight of around 5,000,000 g/mol
- Extremely versatile
- High wear resistance, high impact strength
- Excellent sliding properties
- Ideal for use in mechanical engineering

OKULEN® 1000 Materials

- OKULEN® 1000 natural FN0000
- OKULEN® 1000 yellow FN1000
- OKULEN® 1000 red FN3000
- OKULEN® 1000 blue FN5100
- OKULEN® 1000 AB blue FN5990
- OKULEN® 1000 green FN6000
- OKULEN® 1000 black FN9000
- OKULEN® 1000 ESD black FN9060
- OKULEN® 1000 UV black FN9100
- OKULEN® 1000 AST black FN9200

OKULEN® 2000

OKULEN® 2000 can be optimised with antistatic and additional lubricants for handling and conveyors, additives for short-term use at high temperatures, flame retardants for use in rail vehicles, machinery or mining, or enhanced antibacterial protection. If you need properties in applications that we haven't listed in our OKULEN® range, ask us about it – we have an in-house research and development department for that purpose.

The main features and strengths of OKULEN® 2000 :

- Ultra-high molecular weight, low pressure polyethylene
- Molecular weight of around 9,000,000 g/mol
- Extremely versatile
- Very high wear resistance, high impact strength
- Excellent sliding properties
- Ideal for use in mechanical engineering

OKULEN® 2000 Materials

- OKULEN® 2000 natural FN0000
- OKULEN® 2000 GB natural FN0004
- OKULEN® 2000 CERTEC Pearl white FN1450
- OKULEN® 2000 blue FN5884
- OKULEN® 2000 grey-blue FN7210
- OKULEN® 2000 DryRun black FN9120
- OKULEN® 2000 H white FN9252
- OKULEN® 2000 Mol-black FN9610
- OKULEN® 2000 F-EX black-silver FN9990

Virgin PTFE

The properties of PTFE derive from its chemical structure, consisting of a bond of carbon and fluorine. And it is precisely the size of the fluorine atoms that allows the formation of a uniform and continuous sheath around the backbone, thus protecting them from external attacks.



This gives the molecule greater chemical resistance and stability.

- fluteck™ P 1500 PTFE Premium Grade is Virgin PTFE for Ram Extrusion, Compression and Isostatic molding.
- fluteck™ P 2000 PTFE Premium Medical Grade is a high tech Virgin PTFE for Ram Extrusion, Compression and Isostatic molding, classified as medical grade according to the standard USP VI (50° C -122° F and 121° C – 250° F) and ISO 10993-1:2009.

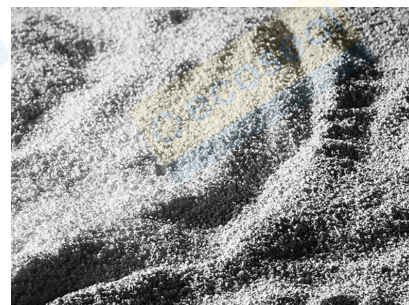
fluteck™ P 1000

Standard Grade is Virgin PTFE for Ram Extrusion, Compression and Isostatic molding.

PTFE Compounds

For all those more demanding applications.

Thanks to the addition of an adequate amount of organic, inorganic and mineral charges it is possible to improve some mechanical, tribological, thermal and electrical properties.



fluteck™ P GL series

A filled compound based on Virgin PTFE containing Glass Fiber. Improved wear resistance, compression strength, creep resistance, chemical resistance.

fluteck™ P CF series

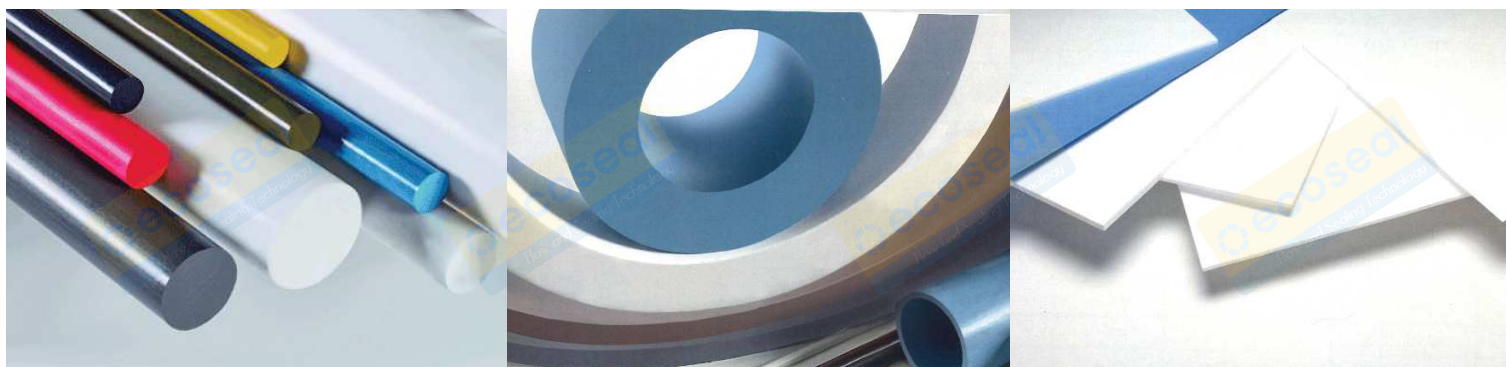
A filled compound based on Virgin PTFE containing Carbon Fiber. Excellent resistance to abrasion, good in water application, excellent chemical stability.

fluteck™ P GR series

A filled compound based on Virgin PTFE containing Graphite. Improved wear resistance, decreased friction and increased sliding properties against soft metals, chemical inertness.

fluteck™ P BZ series

A filled compound based on Virgin PTFE containing Bronze. Improved compression strength, wear resistance, high thermal conductivity, reduced chemical resistance.



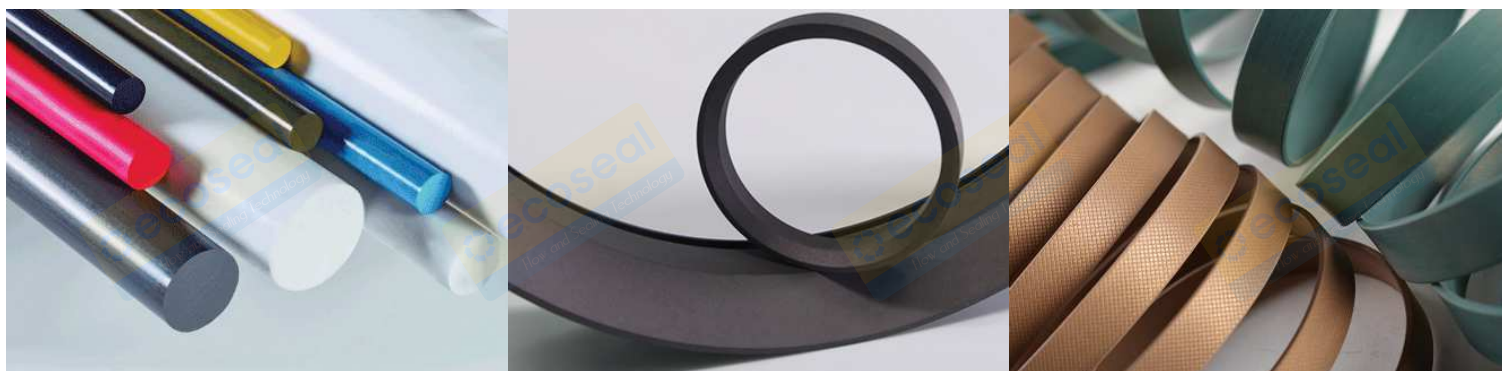
PTFE applications

The properties of PTFE make it suitable for a wide range of applications across the industrial sector. The features of workability with machine tools enable the design and production of finished parts in a wide range of shapes and sizes. This favors the increasing use of this material, which is further boosted by the advantageous price/quality ratio.

Industrial applications	Key properties	Typical uses
Chemical processing	Chemical resistance, thermal stability, cryogenic properties	Gaskets, vessel liners, valve and pipe liners, tubing, coatings
Petrochemical Oil & Gas	Chemical resistance, thermal stability	Gaskets, valve and pipe liners, tubing, coatings
Mechanical Electromechanical Machinery manufacturing	Low coefficient of friction on sliding surfaces, good mechanical properties, thermal stability	Gaskets, rings, valves, connectors, compressors, pumps, flanges, sliding supports, parts for fittings and sealing
Earth-moving machines	Low coefficient of friction on sliding surfaces, compression strength, reduced deformation under load, high resistance to abrasion	Sliding pads, machine tools, slideways, piston rings, seals and fittings for cylinders
Building and construction	Excellent weatherability, flame resistance, low surface energy, excellent mechanical properties	Gaskets, liners, valves, bridge bearing components, sliding plates, roof infrastructure
Electrical and electronic communications	Low dielectric constant, high resistivity, high dielectric breakdown voltage, flame resistance, thermal stability	Wire and cable insulation, connectors
Semiconductors	Low dielectric constant, high dielectric breakdown voltage	Printed circuit boards, electronic devices, cables, insulators and connectors
Food and beverage	Excellent food compatibility, F.D.A. approval, excellent mechanical properties	Parts and accessories for food processing equipment, parts for fittings and seals
Automotive	Low coefficient of friction on sliding surfaces, good mechanical properties, temperature resistance, chemical resistance	Seals, rings, backup rings in automotive power steering, transmission, injectors, automatic gearbox
Medical	Stability, chemical resistance, excellent mechanical properties	Laboratory equipment, parts and accessories for medical devices

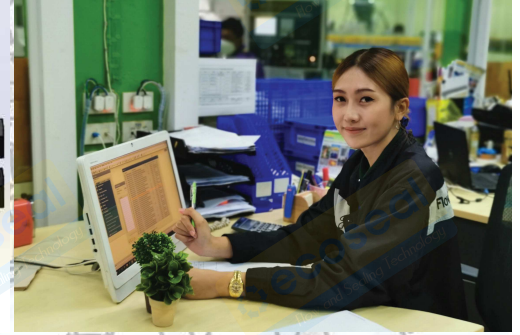
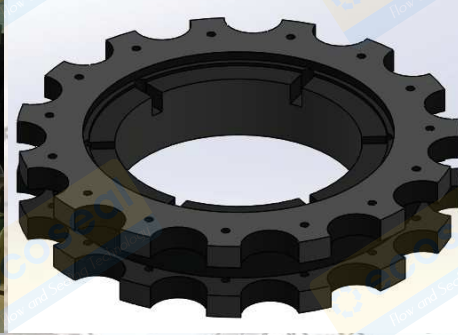
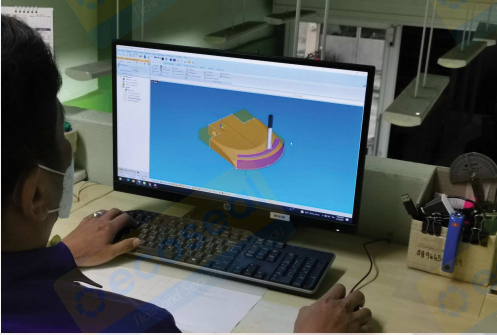
PTFE PROPERTIES

Properties	Method	Units	fluteck™			
			P 1000	P GL series	P CF series	P BZ series
Color	-	-	White	White cream	Black	Brown green
Specific gravity	ASTM D792	g/cm ³	2.130-2.190	2.130-2.290	2.060-2.120	3.050-4.000
Water absorption	ASTM D570	%	0.01	-	-	-
Flammability	UL 94	-	V-0	-	-	-
Tensile strength	ASTM D4894	MPa	≥25	≥18	≥20	≥15
Elongation	ASTM D4894	%	≥280	≥300	≥200	≥200
Hardness	ASTM D2240	Shore D	≥54	≥63	≥55	≥65
Indentation hardness	ASTM D785	MPa	≥23			
Compression strength at 1% deformation	ASTM D695	MPa	≥4	≥7	≥10	≥10
Deformation under load (140 Kg/cm ² for 24 hrs at 23 °C)	ASTM D621	%	10-13	9	6	4
Permanent deformation (after 24 hrs at 23 °C)	ASTM D621	%	6-7.5	5	2	2.5
Coefficient of static friction	ASTM D1894	-	0.08-0.10			
Coefficient of dynamic friction	ASTM D1894	-	0.06-0.08	0.13	0.12	0.14
Wear factor K	ASTM D3702	-	2,900			
Wear coefficient		cm ³ min 10-8 Kg m h	20000-25000			
Thermal conductivity	ASTM C177	W/m.K	0.34			



วิศวกรรมการผลิต | Production Engineering

งานออกแบบด้วยโปรแกรม Solid work, Auto CAD, Visual CAM



งานผลิตโดยเครื่อง CNC Machine



คลังสินค้าพลาสติกวิศวกรรม ENGINEERING PLASTIC WAREHOUSE





บริษัท อีโคซีล จำกัด (สำนักงานใหญ่)

99/28-31, 99/58-59 หมู่ 9 ถ.ลาดพร้าววังหิน
แขวง/เขตลาดพร้าว กรุงเทพฯ 10230

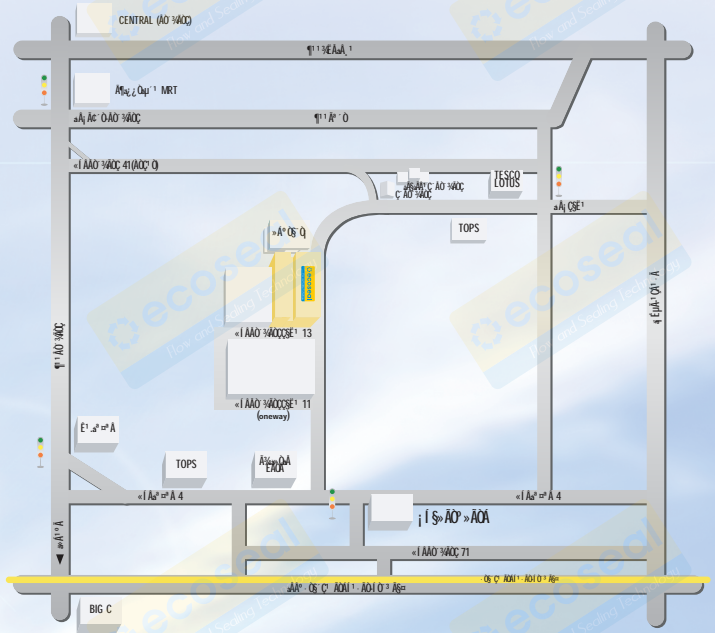
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📧 @ecosealthailand

✉ ecoseal@ecosealthailand.com



แผนที่ | MAP



แผนที่ | MAP

บริษัท อีโคซีล จำกัด (สำนักงานขายมาบตาพุด)



บริษัท อีโคซีล จำกัด (สำนักงานขายมาบตาพุด)

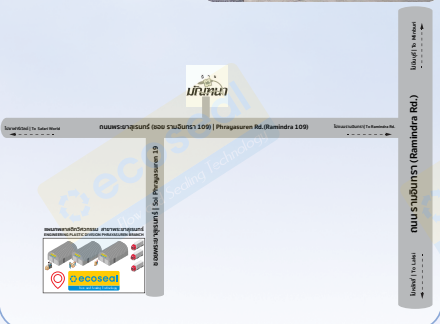
267/185-190 มาบตาพุดเมืองใหม่ ถนนสุขุมวิท
เมืองระยอง อำเภอเมืองระยอง ระยอง 21150

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