

Rod, Tube & Sheet



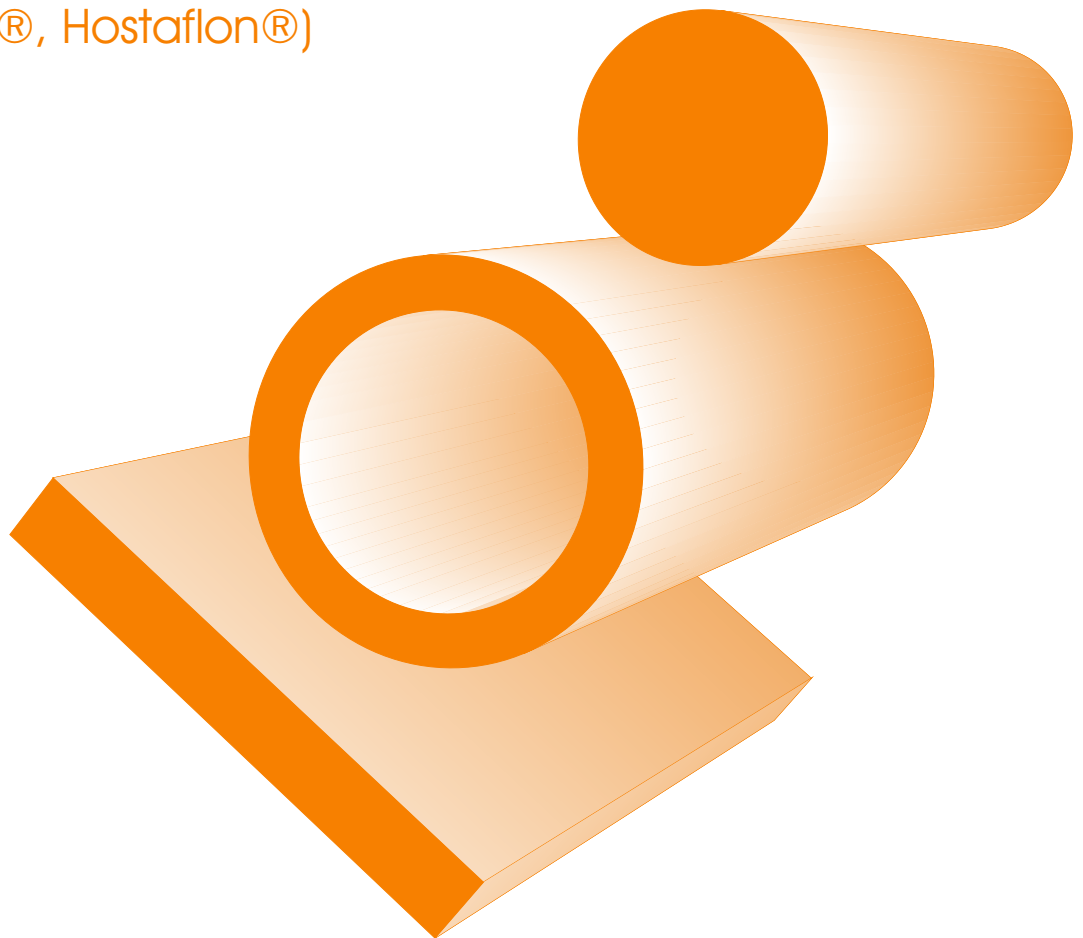
Engineering Plastics

Polyamide (Nylon, Ertalon®)

Polyacetal (Ertacetal®, Delrin®)

PTFE (Teflon®, Hostaflon®)

UHMWPE



For Further Assistance Contact

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Proprietary Materials

Transeals stocks a wide range of engineering plastics to complement our extensive range of hydraulic seals and mechanical power transmission equipment. Our stocks consist primarily of Polyamide (Nylon), Polyacetal, PTFE & UHMWPE as we have found this to be a versatile combination of materials.

Polyamide

Nylon
Ertalon®

PROPERTIES OF POLYAMIDE

- **Excellent Bearing Properties**
High mechanical strength, stiffness, hardness and toughness.
- **Good Impact Strength**
- **Excellent Wear Resistance**
- **Very Good Sliding Properties**
Wear Resistance vs Coefficient of Friction.
- **Very Good Machinability**
- **Absorbs Moisture**

Within the polyamide family, commonly referred to as "nylons", the most common are type 6, monocast 6 & type 66. The difference in physical properties which exist between the types are mainly determined by the composition and structure of their molecular chains.

ENHANCED PROPERTIES

Extruded Polyamides

- **Ertalon® 6SA**
Good mechanical. Natural in colour.
Poor machinability
- **Ertalon® 66SA**
Higher mechanical properties than 6SA and better dimensional stability. Natural or black in colour.

Monocast Polyamides

- **Ertalon® 6PLA**
Similar properties to 66SA. Natural in colour.
- **Ertalon® 6XAU**
Heat stabilised with higher mechanical, wear, and creep properties than 6PLA. Black in colour.
- **Ertalon® LFX**
Oil filled. Increased wear resistance and reduced coefficient of friction.

Polyacetal

Ertacetal® Delrin®

PROPERTIES OF POLYACETAL

- **Excellent Bearing Properties**
High mechanical strength, stiffness, hardness and toughness.
- **Good Impact Strength**
Even at low temperatures.
- **Excellent Wear Resistance**
Though mostly less favourable than polyamides.
- **Very Good Sliding Properties**
Wear Resistance vs Coefficient of Friction.
- **Very Good Machinability**
Particularly well suited for machining on automatic lathes, and for mechanical precision parts.
- **Very Low Moisture Absorption**
- **Physiologically Inert**
Polyacetal is approved for the food industry.

Applications For Polyacetal

- Bearings with close tolerances
- Ideal for long production runs & automatic lathes
- Food industry
- Precision gears

Applications For Polyamide (Nylon)

- Wear pads for drilling & heavy earthmoving equipment
- High load bearings
- Wire rope pulleys
- Support & guide rollers
- Wheels
- Guides
- Gears



Specialised Plastics Machining Capacity

Transeals also possess a dedicated 'plastics only' in-house machine shop. We specialise in producing components from the proprietary materials listed on these pages to our customers specific specifications and requirements. Our current capacity includes 6 lathes (Maximum turning size Ø1350mm) and a mill.

PTFE

Polytetrafluoroethylene Teflon® Hostaflon®

PROPERTIES OF VIRGIN PTFE

- **Excellent Chemical Resistance**
PTFE is the most chemically inert material known. It is unaffected by almost all commercial solvents.
- **Extremely Low Friction**
PTFE has the lowest frictional coefficient of any known solid.
- **Wide Temperature Range**
Continuous operation is possible within a temperature range of -250°C to 250°C.
- **No Moisture Absorption**
- **Physiologically Inert**
PTFE is approved for the food industry.

As the need for more demanding engineering uses emerge, it is possible to add a variety of fillers to pure unfilled PTFE which improve its physical properties. The addition of these fillers can tailor PTFE to suit mechanical applications which would normally be outside the scope of virgin material. Fillers are never used to make a material cheaper. The two most common of these alloys are 60% bronze filled and 25% glass filled.

ENHANCED PROPERTIES WITH FILLERS

- Improved resistance to cold flow or creep
- Reduction in wear
- Increases in stiffness and hardness
- Improved dimensional stability

Applications For PTFE

- Extreme conditions such as very high or low temperatures, and hostile chemical environments
- Sealing applications such as piston rings, rod rings, gaskets, valve seats and back-up-washers
- Wear rings, bearing strip, and wear pads for applications where friction must be kept to a minimum

UHMWPE

Ultra High Molecular Weight Polyethylene

PROPERTIES OF UHMWPE

- **Very Low Friction**
UHMWPE has a low coefficient of friction second only to PTFE.
- **Abrasion Resistance**
UHMWPE is rated better than carbon steel and other engineering plastics for abrasion resistance.
- **Excellent Impact Resistance**
UHMWPE resists strong impacts without breaking even at very low temperatures.
- **No Moisture Absorption**
- **Good Chemical Resistance**
UHMWPE resists aggression from corrosive chemicals such as sulphuric acid and sodium hydroxide.
- **Physiologically Inert**
UHMWPE is approved for the food industry.

UHMWPE has a unique combination of physical characteristics making it one of the most versatile engineering plastics available. It combines excellent wear and abrasion resistance, toughness, and a low coefficient of friction second only to PTFE. As a result, UHMWPE is ideally suited to applications such as flow promotion.

Applications For UHMWPE

- Suction box wear plates
- Guides & slide plates
- Conveyor components subject to high wear & requiring low friction
- Components in direct contact with food products
- Parts subject to high impact stresses
- Flow promotion applications such as chute & bin liners
- Chain guides



Comparative Properties

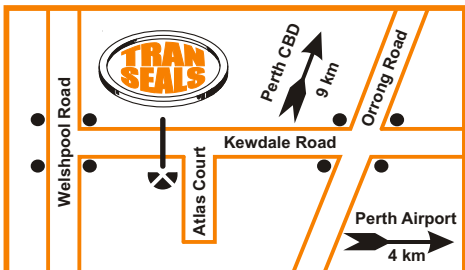
This chart has been correlated to assist you in product selection. It is offered as a possible helpful suggestion in experimentation you may wish to undertake along these lines. If you require additional information, more specific literature is available. Please contact our technical staff regarding your requirements.

Polyamide Nylon															
Polyacetal Ertacetal®															
UHMWPE Ultra High Molecular Weight Polyethylene						Ertalon®									
PTFE						Virgin	25% Glass	60% Bronze			6SA	66SA	6PLA	6XAU	LFX
Elongation		14	12	8	18	2	3	2	2	2	2	2	2	1	
Compressive Strength		1	2	3	10	19	12	14	15	16	16	15	15		
Impact Resistance		16	10	6	20	7	14	12	12	10	8	8			
Wear Resistance		2	3	4	17	9	7	11	11	12	14	14			
Dimensional Stability		8	15	7	5	10	6	7	7	7	7	7			
Dielectric Strength		20	20	2	10	6	3	4	3	3	3	3			
Coefficient of Friction *		17	20	18	14	9	8	10	10	10	15	15			
Machinability		20	15	7	19	17	15	16	16	16	16	16			
Moisture Content		20	19	19	19	14	4	5	5	5	5	5			
Chemical Resistance		20	20	12	13	8	6	7	7	7	7	7			
Continuous Working Temperature °C	Min	-200	-200	-200	-269	-50	-40	-30	-30	-30	-30	-20			
	Max	260	260	260	80	105	85	95	105	120	105	105			
* Under load						Highest numbers indicate "the best" property !									

Stock Sizes Guide Only - Please Confirm Availability															
Polyamide Nylon															
Polyacetal Ertacetal®															
UHMWPE Ultra High Molecular Weight Polyethylene						Ertalon®									
PTFE						Virgin	25% Glass	60% Bronze			6SA	66SA	6PLA	6XAU	LFX
Rod	Outside Diameter	6mm to 75mm	□	19mm to 45mm	□	10mm to 150mm		6mm to 45mm	50mm to 300mm	50mm to 300mm	□				
Tube	Outside Diameter	38mm to 370mm	50mm to 150mm	50mm to 470mm	75mm # to # 450mm				51mm to 500mm	□	□				
Sheet	Thickness	1mm to 3mm	□	□	□	□	1mm to 6mm		10mm to 80mm	8mm to 80mm	□				
□ Not usually stocked. Availability on request						# HDPE Only. (High Density Polyethylene)									

We believe this information is the best currently available on the subject. It is subject to revision without notice as additional knowledge and experience are gained. Transeals Pty Ltd makes no guarantee of results and assumes no obligation whatsoever in connection with this information.

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