Polyamides (PA)

Within the polyamides, commonly referred to as “nylons”, we distinguish different types. The most important ones are: PA 6, PA66, PA11 and PA12. The differences in physical properties which exist between these types are mainly determined by the composition and the structure of their molecular chains.

Main characteristics:

- High mechanical strength, stiffness, hardness and toughness.
- Good fatigue resistance
- High mechanical damping ability.
- Good sliding properties
- Excellent wear resistance
- Good electrical insulating properties
- Good resistance to high energy radiation (gamma and X-rays)
- Good mach inability

EXTRUDED PRODUCTS ERTALON 6 SA (PA 6) Natural (white) / black

This material offers an optimal combination of mechanical strength, stiffness, toughness, mechanical damping properties and wear resistance. These properties, together with a favourable electrical insulating ability and a good chemical resistance make ERTALON 6 SA a “general purpose” grade for mechanical construction and maintenance.

ERTALON 66 SA (PA 66) Natural (cream) / black

Material with a higher mechanical strength, stiffness, heat and wear resistance than ERTALON 6 SA. It also has a better creep resistance but its impact strength and mechanical damping ability are reduced. Well suited for machining on automatic lathes.

ERTALON 4.6 (PA 4.6) (reddish brown)

Compared with the conventional nylons, ERTALON 4.6 (STANYL) features a better retention of stiffness and creep resistance over a wide range of temperatures as well as a superior heat ageing resistance. Therefore applications for ERTALON 4.6 are situated in the “higher temperature area” (80 -150 0 C) where stiffness, creep resistance, heat ageing resistance, heat ageing resistance, fatigue strength and wear resistance of PA 6, PA 66, POM and PET fall short.

ERTALON 66- GF30 (PA 66-GF 30) (black)

Compared with virgin PA 66, this 30% glass fibre reinforced and heat stabilized nylon grade offers increased strength, stiffness, creep resistance and dimensional stability whilst retaining an excellent wear resistance. It also allows higher max. service temperatures.
<table>
<thead>
<tr>
<th>Standard sizes</th>
<th>900x450mm</th>
<th>1000x500mm</th>
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<tbody>
<tr>
<td>900x550 mm</td>
<td>2000x1000mm</td>
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</tr>
<tr>
<td>900x550</td>
<td>3000x1000mm</td>
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</tbody>
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**NYLATRON GS (PA 66 + MoS2) (grey-black)**

The addition of MoS2 renders this material somewhat stiffer, harder and dimensionally more stable than ERTALON 66 SA. It results in some loss of impact strength. The nucleating effect of the molybdenum disulphide results into an improved crystalline structure enhancing hearing and wear properties.

**Polyamides (PA)**

**CAST PRODUCTS**

**METALON 6 PLA (PA 6) Natural (ivory) / black**

Unmodified cast nylon 6 grade exhibiting characteristics which come very close to those of ERTALON 66 SA. It combines high strength, stiffness and hardness with good creep and wear resistance, heat ageing properties and mach inability.

**METALON 6 XAU+ (PA 6) (gold)**

ERTALON 6 XAU+ is a heat stabilized cast nylon grade with a very dense and highly crystalline structure. Compared with conventional extruded or cast nylons, ERTALON 6 XAU+ offers superior heat ageing performance in air (much better resistance to thermal- oxidative degradation), allowing 15 - 300 °C higher continuously allowable service temperatures. ERTALON 6 XAI+ is particularly recommended for bearings and other mechanical parts subject to wear which are operating in air for long periods of time at temperatures over 600°C.

**METALON LFX (PA 6 + oil) (green)**

This internally lubricated cast nylon 6 is self-lubricating in the real meaning of the word. ERTALON LFX, especially developed for unlubricated, highly loaded and slowly moving parts applications, yields a considerable enlargement of the application possibilities of nylons. This is because of its reduced coefficient of friction (up to -50%) and improved wear resistance (up to x 10).

**METALON MC 901 (PA 6) (blue)**

This modified cast nylon 6 grade with its distinctive blue colour exhibits higher toughness, flexibility and fatigue resistance than ERTALON 6 PLA. It has proved to be an excellent material for gear wheels, racks and pinions.

**METALON GSM (PA 6 + MoS2) (grey-black)**

NYLATRON GSM contains finely divided particles of molybdenum disulphide to enhance its bearing and wear behaviour without impairing the impact and fatigue resistance inherent to unmodified cast nylon grades. It is a very commonly used grade for gears, bearings, sprockets and sheaves.
METALON NSM (PA 6 + solid lubricants) (grey)

NYLATRON NSM is a proprietary cast nylon 6 formulation containing solid lubricant additives which grant this material self-lubricity, excellent frictional properties, superior wear resistance and outstanding Pressure-Velocity capabilities (up to 5 times higher than conventional cast nylons). Being particularly suited for higher velocity, unlubricated moving parts applications, it is the perfect complement to the oil-filled grade ERTALON LFX.

NYLATRON GS (PA 66 + MoS2) (grey-black)

The addition of MoS2 renders this material somewhat stiffer, harder and dimensionally more stable than ERTALON 66 SA, but results in some loss of impact strength. The nucleating effect of the molybdenum disulphide results into an improved crystalline structure enhancing bearing and wear properties.

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