

## Akro-Plastic Akromid® S3 GF 30 4 (3552) PA 6.10 Conditioned, 30% Glass Filled (discontinued \*\*)

Category : Polymer , Renewable/Recycled Polymer , Thermoplastic , Nylon , Nylon 610 , Nylon 610, Glass Reinforced

### Material Notes:

A characteristic property of AKROMID® S (PA 6.10) is that it has a renewable-resource content of up to 70 % and therefore fulfils the current definition of a bioplastic. The plant-based raw material used is sebacic acid, synthesized from castor oil which is obtained from the seeds of Ricinus communis, the castor oil plant. From a technical standpoint, AKROMID® S closes the gap between PA 6/PA 6.6 and PA 12. It is characterized by significantly lower moisture absorption compared to PA 6 and PA 6.6. At 23 °C and 50 % relative humidity, typical values for these product types are 3 % and 2.8 %, respectively. With a value of approximately 1.4 %, PA 6.10 absorbs just half as much moisture and can therefore be used as an engineering material in applications requiring a high dimensional consistency. Moreover, it exhibits excellent cold impact resistance. Other outstanding characteristics include very good chemical resistance due to the structure of the polymer and high hydrolysis resistance, although it can be processed like all common polyamides. The materials from the PA 6.10 product family are further characterized by exceptional dimensional stability, good surface resistance, good abrasion resistance and wear behaviour, and an improved carbon footprint. This is due to the fact that the plant-based raw materials have already removed CO<sub>2</sub> from the environment during their growth phase. The product portfolio currently comprises one non reinforced variant and several reinforced variants with a glass-fibre content ranging from 15 % to 50 %. AKROMID® S is a bioplastic according to today's standards. Unlike certain materials used in the packaging industry, however, the material is not biodegradable. The distinguishing feature of AKROMID® S is its reduced ecological footprint: The use of harmful CO<sub>2</sub> per ton of polyamide produced from renewable resources is significantly lower compared to one ton produced from fossil-based resources, without affecting the product's performance characteristics.

**Applications:** Automotive Sector  
Connectors and housings  
Non-return valves  
Power steering-fluid reservoirs  
Corrugated tubing and fluid pipes  
Machine Construction and Tool-Building  
Gears  
Door handles and fittings  
Office equipment, housings, functional parts, amongst others  
Connectors and plugs  
Power tools  
Sports and Leisure  
Components in high-end garden tools  
Bicycle accessories  
Sail-boat accessories  
Winter sports accessories  
Information from Akro-Plastic

Order this product through the following link:

[http://www.lookpolymers.com/polymer\\_Akro-Plastic-Akromid-S3-GF-30-4-3552-PA-610-Conditioned-30-Glass-Filled-nbspdiscontinued-.php](http://www.lookpolymers.com/polymer_Akro-Plastic-Akromid-S3-GF-30-4-3552-PA-610-Conditioned-30-Glass-Filled-nbspdiscontinued-.php)

Physical Properties	Metric	English	Comments
Density	1.31 g/cc	0.0473 lb/in <sup>3</sup>	ISO 1183
Filler Content	30 %	30 %	ISO 1172
Water Absorption	1.2 % @Temperature 23.0 °C	1.2 % @Temperature 73.4 °F	50% r.h.; ISO 62

Mechanical Properties	Metric	English	Comments
Tensile Strength at Break	110 MPa	16000 psi	5 [mm/min]; ISO 527-1/2
Elongation at Break	6.5 %	6.5 %	5 [mm/min]; ISO 527-1/2
Tensile Modulus	6.20 GPa	899 ksi	1[mm/min]; ISO 527-1/2

Mechanical Properties	Metric	English	Comments
Charpy Impact Unnotched	1600 J/cm <sup>2</sup>	520.0 ft·lb/in <sup>2</sup>	ISO 179/1eU
	@Temperature 23.0 °C	@Temperature 73.4 °F	

Thermal Properties	Metric	English	Comments
Melting Point	220 °C	428 °F	ISO 11357-1, DSC,10 [K/min]

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