

## Akro-Plastic Akromid® S31 (3484) PA 6.10 Dry (discontinued \*\*)

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

### 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-S31-3484-PA-610-Dry-nbspdiscontinued-.php](http://www.lookpolymers.com/polymer_Akro-Plastic-Akromid-S31-3484-PA-610-Dry-nbspdiscontinued-.php)

Physical Properties	Metric	English	Comments
Density	1.08 g/cc	0.0390 lb/in <sup>3</sup>	ISO 1183
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Water Absorption	1.7 %	1.7 %	50% r.h.; ISO 62
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Linear Mold Shrinkage, Flow	0.016 cm/cm	0.016 in/in	ISO 294-4
Linear Mold Shrinkage, Transverse	0.018 cm/cm	0.018 in/in	ISO 294-4
Spiral Flow	700 cm	276 in	AKRO

Mechanical Properties	Metric	English	Comments
Ball Indentation Hardness	125 MPa	18100 psi	HB 961/30; ISO 2039-1

Mechanical Properties	Metric <sup>MPa</sup>	English <sup>psi</sup>	Comments <sup>5 [mm/min], Test Speed 50 [mm/min]; ISO 527-1/2</sup>
Elongation at Break	>= 50 %	>= 50 %	5 [mm/min]; ISO 527-1/2
Tensile Modulus	2.40 GPa	348 ksi	1[mm/min]; ISO 527-1/2
Flexural Strength	100 MPa	14500 psi	2 [mm/min]; ISO 178
Flexural Modulus	1.90 GPa	276 ksi	2 [mm/min]; ISO 178
Charpy Impact Unnotched	NB	NB	ISO 179/1eU
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	NB	NB	ISO 179/1eU
	@Temperature 23.0 °C	@Temperature 73.4 °F	
Charpy Impact, Notched	0.400 J/cm²	1.90 ft-lb/in²	ISO 179/1eA
	@Temperature -30.0 °C	@Temperature -22.0 °F	
	0.400 J/cm²	1.90 ft-lb/in²	ISO 179/1eA
	@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]
Deflection Temperature at 0.46 MPa (66 psi)	150 °C	302 °F	HDT/B; ISO 75-1/2
Deflection Temperature at 1.8 MPa (264 psi)	55.0 °C	131 °F	HDT/A; ISO 75-1/2
Flammability, UL94	HB	HB	
	@Thickness 0.800 mm	@Thickness 0.0315 in	

Electrical Properties	Metric	English	Comments
Comparative Tracking Index	600 V	600 V	Solution A; IEC 60112

Processing Properties	Metric	English	Comments
Feed Temperature	60.0 - 80.0 °C	140 - 176 °F	
Nozzle Temperature	240 - 295 °C	464 - 563 °F	
Zone 1	220 - 300 °C	428 - 572 °F	
Zone 2	220 - 300 °C	428 - 572 °F	
Zone 3	220 - 300 °C	428 - 572 °F	

Processing Properties	Metric <sup>100 °C</sup>	English <sup>72 °F</sup>	Comments
Melt Temperature	260 - 310 °C	500 - 590 °F	
Mold Temperature	70.0 - 100 °C	158 - 212 °F	
Drying Temperature	80.0 °C	176 °F	
Dry Time	<= 4 hour	<= 4 hour	
Hold Pressure	30.0 - 80.0 MPa	4350 - 11600 psi	
Back Pressure	5.00 - 15.0 MPa	725 - 2180 psi	

Descriptive Properties	Value	Comments
Rate acc. FMVSS 302 (	Passed	
Rate acc. FMVSS 302,(	FMVSS 302, >1 [mm] Thickness	

## Contact Songhan Plastic Technology Co.,Ltd.

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