Product Comparison

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Technical Data

Product Description	
AKROMID® B3 GK 50 natural (3690)	AKROMID® B3 GK 50 natural (3690) is a 50% glass bead reinforced polyamide 6 with low warpage and high surface appearance and light inherent color Housings and covers in the automotive, electro and furniture industry.
Generic Nylon 6 - Glass Bead	This data represents typical values that have been calculated from all products classified as: Generic Nylon 6 - Glass Bead This information is provided for comparative purposes only.

General	AKROMID® B3 GK 50 natural (3690)	Generic Nylon 6 - Glass Bead
Manufacturer / Supplier	• AKRO-PLASTIC GmbH	• Generic
Generic Symbol	• Nylon 6	• Nylon 6
Material Status	• Commercial: Active	• Commercial: Active
Search for UL Yellow Card	• AKRO-PLASTIC GmbH • AKROMID®	--
Availability	• Africa & Middle East • Asia Pacific • Europe • Latin America • North America	• Africa & Middle East • Asia Pacific • Europe • Latin America • North America
Filler / Reinforcement	• Glass Bead, 50% Filler by Weight	• Glass Bead
Features	• Good Surface Finish • Low Warpage	--
Uses	• Automotive Applications • Electrical/Electronic Applications • Furniture • Housings	--
Appearance	• Natural Color	--
Resin ID	• PA6 GB50	--

Physical	AKROMID® B3 GK 50 natural (3690)	Generic Nylon 6 - Glass Bead	Unit	Test Method
Density / Specific Gravity				
--	--	1.29 to 1.36	g/cm³	ASTM D792
--	--	1.32 to 1.36	g/cm³	ISO 1183
23°C	1.54	--	g/cm³	ISO 1183
Melt Volume-Flow Rate (MVR) (275°C/5.0 kg)	--	40 to 100	cm³/10min	ISO 1133
Molding Shrinkage				
Flow	--	0.28 to 1.7	%	ASTM D955
--	--	0.29 to 1.3	%	ISO 294-4
Across Flow	0.80	--	%	ISO 294-4
Flow	0.70	--	%	ISO 294-4
Water Absorption				
24 hr	--	0.75 to 1.2	%	ASTM D570
24 hr, 23°C	--	0.70 to 7.0	%	ISO 62
Saturation, 23°C	4.7	1.8 to 8.0	%	ISO 62
Equilibrium, 23°C, 50% RH	--	1.5 to 2.5	%	ISO 62

Form No. TDS-216258-118299-en
Document Created: Monday, June 17, 2024

Physical	AKROMID® B3 GK 50 natural (3690)	Generic Nylon 6 - Glass Bead	Unit	Test Method
Viscosity Number	--	143 to 150	cm³/g	ISO 307
Humidity Absorption - 62% RH (70°C)	1.5	--	%	ISO 1110
Mechanical	**AKROMID® B3 GK 50 natural (3690)**	**Generic Nylon 6 - Glass Bead**	**Unit**	**Test Method**
Tensile Modulus				
--	--	2680 to 6520	MPa	ISO 527-1
--	5700	--	MPa	ISO 527-1/1
Tensile Stress				
Yield	--	43.6 to 87.5	MPa	ISO 527-2
Break	--	61.5 to 75.2	MPa	ASTM D638
Break	--	45.6 to 81.5	MPa	ISO 527-2
Break	75.0	--	MPa	ISO 527-2/5
--	--	54.6 to 75.3	MPa	ASTM D638
--	--	50.0 to 150	MPa	ISO 527-2
Tensile Strain				
Yield	--	1.6 to 20	%	ISO 527-2
Break	--	1.5 to 6.2	%	ASTM D638
Break	--	2.2 to 11	%	ISO 527-2
Break	4.0	--	%	ISO 527-2/5
Flexural Modulus				
--	--	2660 to 6230	MPa	ASTM D790
--	--	2630 to 6000	MPa	ISO 178
-- [2]	5200	--	MPa	ISO 178
Flexural Strength				
--	--	100 to 114	MPa	ASTM D790
--	--	85.4 to 181	MPa	ISO 178
-- [2]	135	--	MPa	ISO 178
Impact	**AKROMID® B3 GK 50 natural (3690)**	**Generic Nylon 6 - Glass Bead**	**Unit**	**Test Method**
Charpy Notched Impact Strength				
--	--	2.0 to 6.2	kJ/m²	ISO 179
-30°C	1.0	--	kJ/m²	ISO 179/1eA
23°C	3.0	--	kJ/m²	ISO 179/1eA
Charpy Unnotched Impact Strength				
--	--	17 to 61	kJ/m²	ISO 179
-30°C	32	--	kJ/m²	ISO 179/1eU
23°C	42	--	kJ/m²	ISO 179/1eU
Notched Izod Impact				
--	--	28 to 71	J/m	ASTM D256
--	--	1.9 to 10	kJ/m²	ISO 180
Unnotched Izod Impact				
--	--	200 to 310	J/m	ASTM D4812
--	--	23 to 51	kJ/m²	ISO 180

Form No. TDS-216258-118299-en
Document Created: Monday, June 17, 2024

Hardness	AKROMID® B3 GK 50 natural (3690)	Generic Nylon 6 - Glass Bead	Unit	Test Method
Rockwell Hardness	--	95 to 120		ASTM D785
Ball Indentation Hardness	--	165 to 220	MPa	ISO 2039-1
Thermal	**AKROMID® B3 GK 50 natural (3690)**	**Generic Nylon 6 - Glass Bead**	**Unit**	**Test Method**
Deflection Temperature Under Load				
0.45 MPa, Unannealed	188	167 to 217	°C	ISO 75-2/B
1.8 MPa, Unannealed	--	66.8 to 165	°C	ASTM D648
1.8 MPa, Unannealed	75.0	56.1 to 203	°C	ISO 75-2/A
Continuous Use Temperature	--	80.0 to 180	°C	ASTM D794
Vicat Softening Temperature	--	199 to 211	°C	ISO 306
Melting Temperature				
--	--	223 to 224	°C	
--	--	220 to 222	°C	ISO 11357-3
-- [3]	225	--	°C	ISO 11357-3
--	--	220 to 223	°C	ISO 3146
CLTE				ISO 11359-2
Flow	--	1.9E-5 to 9.1E-5	cm/cm/°C	
Transverse	--	6.0E-5 to 9.0E-5	cm/cm/°C	
Electrical	**AKROMID® B3 GK 50 natural (3690)**	**Generic Nylon 6 - Glass Bead**	**Unit**	**Test Method**
Surface Resistivity				
--	--	1.0E+12 to 2.5E+15	ohms	ASTM D257
--	1.0E+13	1.0E+5 to 2.5E+14	ohms	IEC 60093
--	--	1.0E+13 to 1.2E+13	ohms	IEC 62631-3-2
Volume Resistivity				
--	--	1.0E+13 to 1.1E+15	ohms·cm	ASTM D257
--	1.0E+15	1.0E+13 to 1.0E+16	ohms·cm	IEC 60093
--	--	1.0E+13 to 2.6E+14	ohms·m	IEC 62631-3-1
Electric Strength	--	30 to 36	kV/mm	IEC 60243-1
Dielectric Constant				IEC 60250
--	--	3.50 to 3.80		
--	--	3.75		
Dissipation Factor	--	0.020		IEC 60250
Comparative Tracking Index				IEC 60112
--	--	443 to 600	V	
Solution A	500	--	V	
Flammability	**AKROMID® B3 GK 50 natural (3690)**	**Generic Nylon 6 - Glass Bead**	**Unit**	**Test Method**
Burning Rate				
--	--	99 to 100	mm/min	ISO 3795
> 1.00 mm	< 100	--	mm/min	FMVSS 302
Flame Rating (1.6 mm)	HB	--		UL 94
Glow Wire Flammability Index				IEC 60695-2-12
--	--	642 to 653	°C	
1.6 mm	650	--	°C	
Glow Wire Ignition Temperature	--	650 to 658	°C	IEC 60695-2-13

Form No. TDS-216258-118299-en
Document Created: Monday, June 17, 2024

Additional Information	AKROMID® B3 GK 50 natural (3690)	Generic Nylon 6 - Glass Bead	Unit	Test Method
Reinforcement Content	50	--	%	ISO 1172

Injection	AKROMID® B3 GK 50 natural (3690)	Generic Nylon 6 - Glass Bead	Unit
Drying Temperature	--	79 to 80	°C
Drying Time	--	3.0 to 7.0	hr
Dew Point	--	-30	°C
Suggested Max Moisture	--	0.070 to 0.20	%
Rear Temperature	--	230 to 284	°C
Middle Temperature	--	230 to 284	°C
Front Temperature	--	250 to 284	°C
Nozzle Temperature	--	249 to 267	°C
Processing (Melt) Temp	--	244 to 281	°C
Mold Temperature	--	69 to 90	°C
Injection Pressure	--	75.0 to 95.0	MPa
Back Pressure	--	0.172 to 0.685	MPa
Screw Speed	--	45 to 200	rpm

Injection Notes

Generic Nylon 6 - Glass Bead	This data represents typical values that have been calculated from all products classified as: Generic Nylon 6 - Glass Bead This information is provided for comparative purposes only.

Notes

[1] Typical properties: these are not to be construed as specifications.

[2] 2.0 mm/min

[3] 10°C/min

Form No. TDS-216258-118299-en
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