



KBG PA Compound Physical property

PA6 is hygroscopic and moisture sensitive, so pre-drying is recommended as a matter of rule. PA6 compound reinforced with impact modifier, glassfibres, minerals, glassbeads & etc. Normally the pure PA6 is supplied with max moisture content of 0.20%. The compounded grades are supplied with a max moisture-content of 0.10%. Material that is not pre-dried to moisture level below 0.1% will degrade, causing surface defects, parts that are out of dimension and brittle parts. To achieve best injection moulding results the moisture-content in the granules should not exceed the above figures. It is recommended to dry material for 2~4 hours at 85~90°C in dryer. This material is available in natural and colors on request.

Property	Test method	Test condition	Unit	PA6 Compound								
				Impact Modifier						MF Reinforced		
				HIM105		HIM115		HIM120		MF20		
				DAM (3)	50%RH (2)	DAM (3)	50%RH (2)	DAM (3)	50%RH (2)	DAM (3)	50%RH (2)	
Mechanical Property												
Notched Izod impact	ASTM D256	23°C,3.2mm	KJ/m2	4	10	5	20	8	35	8	15	
Notched Izod impact		_ 20°C		...	5	...	5	...	5	...	5	
Rock well hardness	ASTM D-785	R-Scal	R-Scal	78	...	76	...	72	...	75		
Tensile Strength at yield	ASTM D638	23°c , 50 mm/min	Mpa	75	60	70	55	65	50	80	60	
Elongation at break			%	>35	>50	>45	>60	>50	>75	>5	>10	
Flexural strength	ASTM D790	23°c 10mm/min	Mpa	90	40	85	36	80	32	135	70	
Flexural modulus			Mpa	2300	1400	2150	1300	2000	1200	4000	2850	
Flammability												
Flammability	UL94	⅞ inch (3.2 mm)	....	HB		HB		HB		HB		
Thermal Property												
HDT(Heat Deflection Temp)	ASTM D648	unannealed0.82MPa	°C	65	....	62	....	58	....	90	...	
HDT(Heat Deflection Temp)	ASTM D648	unannealed.46MPa	°C	170	...	165	...	150	...	140	....	
Polymer property												
Melting Point	DSC Method	.....	°C	215		215		215		220		
Density	ASTMD792	23°c	g/cm3	1.1		1.1		1.1	...	1.25	...	
Mold shrinkage	ASTM D955	100*100*3.2 mm	%	1.3~1.7	....	1.2~1.7	....	1.3~1.7	....	1.0~1.3	....	
Filler content	ASTM D5630-94	800°C	%	....	....	....	....	....	....	20	...	
Water Absorption	ASTM D570	23°c,water,24h	%	3.0	...	2.7	...	2.5	...	1.7	....	
Electrical												
Dielectric Strength	ASTM D149	....	Kv/mm	35	30	32	30	30	28	20	....	
Volume Resistivity	ASTM D257	....	Ω.cm	10 ¹⁵	...	10 ¹⁵	...	10 ¹⁵	...	10 ¹³	....	
Dielectric Constant	ASTM D150	....	10 ⁶ HZ	3.1	....	3.1	....	3.1	....	3.6		
Glow wire Test(4)	IEC695-2-1	2 mm	°C	750	....	700	....	650	....	650	....	

Note:

The above data are typical values. They are only for material selection purpose, and variation within normal tolerances are various colors. Typical values are not our specification and not be used for part or tool design.

(2) 50%RH = conditioned at 23°C and 50% RH according to ISO 291.



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PA6 has the advantages of high mechanical strength, high softening point, good wear resistance, good flexibility, excellent oil and chemical corrosion resistance and good electrical insulation. PA composite has already replaced some metals being as structural materials.

Application: Electrical/Electronic: Coil Bobbin, Connector Housing, Ring case, Duplicator Parts. Bracket, Gears, Wheels Button, hose Helmet, Pipe, Roller Skate, Handle, Reel Spool Body & etc.

A number of specific grade are available, including General, Reinforced, Flame retardant grades.

		PA6 Compound													
MF Reinforced		Glass Fiber Reinforced,Modified						Flame Retardant				PA6/ABS Alloy		PA6/PP Alloy	
MF40		HIG15		HIG20		HIG30		FR600		FRG630		KAPHI350		KWPMI450	
DAM (3)	50%RH (2)	DAM (3)	50%RH (2)	DAM (3)	50%RH (2)	DAM (3)	50%RH (2)	DAM (3)	50%RH (2)	DAM (3)	50%RH (2)	DAM (3)	50%RH (2)	DAM (3)	50%RH (2)
Mechanical Property															
6	10	6	12	8	15	10	14	6	10	8	10	...	45	...	25
...	4	...	5		6		7	...	....	...	...	...	10	...	6
78	...	79	...	80	...	81		78	...	81	...	...	95	...	97
90	65	120	80	135	87	170	115	60	50	145	102	...	53	...	45
>6	>15	>3.5	>6	>4	>6	>3	>5	>12	>20	>3	>4	...	>100	...	>200
175	76	180	100	200	110	220	115	92	42	180	100	...	1700	...	1300
5000	3200	4500	3100	5500	3500	7200	5400	2200	1350	7000	5200	...	75	...	54
Flammability															
HB		HB		HB		HB		V-0		V-0		HB		HB	
Thermal Property															
105	....	105	...	190	....	200	....	85	....	200	....	...	75	...	60
190	...	200	....	210	.....	215	...	190	....	210	....	....	145	...	120
Polymer property															
220	....	260		260		260		220		260		220		220	
1.46	....	1/23	...	1.26	....	1.26		1.3	....	1.4	...	...	1.06	...	1.04
0/9~1.2	....	0.3~0.8		0.3~0.8	....	0.3~0.8	....	1.2~1.5	....	0.3~0.6	....	...	1.0~1.4	...	1.4~1.8
40	....	15	....	20	...	30	...	...	....	35	....	...	...	...	...
1.7	....	1.5		2.0	....	2.0	....	...	....	1.3	....	....	1.0	...	...
Electrical															
35	....	21		25	....	35	....	25	....	...	....	...	20	...	20
10 ¹³	.....	10 ¹⁵	....	10 ¹⁵	.....	10 ¹³	...	10 ¹⁵		...	...	...	....	...	...
3.6	....	4	....	4	....	4	...	3.1	....	...	...	...	...	...	...
650	....	650	...	650	....	650	...	850	...	85	....	...	650	...	650

(3) DAM = freshly moulded or post-dried to constant weight. Water content <0.2%.

(4) Flame test classifications are not intended to present behaviour of moulded parts in real life fire conditions. Each end-user must determine whether any potential flammability hazards exist with parts moulded from PA6 resins