

TENAC® PROPERTIES (ASTM)

Items / Test method / Units / Grade				Standard Grade						
				High Viscosity		Medium Viscosity			High Flowability	
				2010 SH210	3010 SH310	4010 SH410	4060	5010 SH510	7010 SH710	
Specific gravity		D 792	–	1.42	1.42	1.42	1.42	1.42	1.42	
Water absorption		D 570	%	0.2	0.2	0.2	0.2	0.2	0.2	
Mechanical	Tensile strength	D 638	MPa	67	68	69	68	69	69	
	Tensile elongation	D 638	%	85	75	60	50	45	30	
	Flexural strength	D 790	MPa	96	98	103	103	103	108	
	Flexural modulus	D 790	MPa	2740	2740	2940	2940	3040	3040	
	Izod impact strength(notched)	D 256	J/m	127	108	78	69	69	59	
	Rockwell hardness	D 785	M-scale		94	94	94	–	94	94
			R-scale		120	120	120	–	120	120
Taber abrasion	D 1044	mg/1000times		13	13	13	–	13	13	
Thermal	Melt index	D 1238	gr/10min	1.7	2.8	10	17	22	34	
	Coefficient of linear expansion	(TMA)	x10 ⁻⁵ cm/cm°C	10	10	10	10	10	10	
	Heat distortion temperature	D 645	°C(1.82MPa)		130	133	136	–	136	136
°C(0.45MPa)				172	172	172	–	172	172	
Flammability	(UL 94)	–		HB	HB	HB	HB	HB	HB	
Mold shrinkage	(Asahi Kasei method)	%		1.8~2.2	1.8~2.2	1.8~2.2	1.8~2.2	1.8~2.2	1.8~2.2	
Features				Superhigh-impact grade;highest molecular weight category.	High-impact high-elongation grade; 2nd-highest molecular weight category.	General-purpose grade, high impact, high elongation, medium viscosity.	Reduce creak noise	General-purpose grade, Characterized by balanced flowability and mechanical properties.	High-flow grade, Suited for thin-Wall, long-flow-distance moldings.	

Items / Test method / Units / Grade				High-Cycle				
				Medium Viscosity		High Flowability		Super Flowability
				5050		7050		7054
Specific gravity		D 792	–	1.42	1.42	1.42	1.42	
Water absorption		D 570	%	0.2	0.2	0.2	0.2	
Mechanical	Tensile strength	D 638	MPa	69	69	70	69	
	Tensile elongation	D 638	%	45	30	30	20	
	Flexural strength	D 790	MPa	103	106	108	106	
	Flexural modulus	D 790	MPa	2940	3040	3040	3040	
	Izod impact strength(notched)	D 256	J/m	59	49	49	39	
	Rockwell hardness	D 785	M-scale		94	94	94	94
			R-scale		120	120	120	120
Taber abrasion	D 1044	mg/1000times		13	13	13	13	
Thermal	Melt index	D 1238	gr/10min	21	33	39	70	
	Coefficient of linear expansion	(TMA)	x10 ⁻⁵ cm/cm°C	10	10	10	10	
	Heat distortion temperature	D 645	°C(1.82MPa)		136	136	136	136
°C(0.45MPa)				172	172	172	172	
Flammability	(UL 94)	–		HB	HB	HB	HB	
Mold shrinkage	(Asahi Kasei method)	%		1.7~2.1	1.7~2.1	1.7~2.1	1.7~2.1	
Features				Standard-flow grade with high crystallization rate, for higher productivity.	High-flow grade with high crystallization rate, for higher productivity.			

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Items / Test method / Units / Grade				Weather-Resistant			Glass-Reinforced		
				High Viscosity	Medium Viscosity		Medium Viscosity		High Flowability
				3013A	4013A	5013A	GA510	GA520	GN705
Specific gravity		D 792	–	1.42	1.42	1.42	1.50	1.56	1.56
Water absorption		D 570	%	0.2	0.2	0.2	0.2	0.2	0.2
Mechanical	Tensile strength	D 638	MPa	67	67	68	64	59	127
	Tensile elongation	D 638	%	70	55	45	15	15	3
	Flexural modulus	D 790	MPa	93	98	101	98	98	196
	Flexural strength	D 790	MPa	2940	3040	3040	3530	4410	8230
	Izot impact strength(notched)	D 256	J/m	108	78	69	49	39	78
	Rockwell hardness	D 785	M-scale	94	94	94	92	90	90
			R-scale	120	120	120	120	120	120
Taber abrasion	D 1044	mg/1000times	13	13	13	18	23	23	
Thermal	Melt index	D 1238	gr/10min	2.8	10	22	17	15	10
	Coefficient of linear expansion	(TMA)	x10 ⁻⁵ cm/cm°C	10	10	10	8	7	4/9
	Heat distortion temperature	D 645	°C(1.82MPa)	136	136	136	140	152	170
°C(0.45MPa)			172	172	172	172	174	174	
Flammability	(UL 94)	–	–	–	–	HB	HB	HB	
Mold shrinkage	(Asahi Kasei method)	%	1.8~2.2	1.8~2.2	1.8~2.2	1.5~1.8/1.2~1.5	1.5~1.8/1.0~1.3	0.4~0.6/1.0~1.2	
Deflection Temperature Under Load				Weather-Resistant grade containing UV absorber and other additives for superior weatherability.			10% GF-filled grade with high stiffness and superior dimensional stability.	20% GF-filled grade with high stiffness and superior dimensional stability.	25% GF-filled, with high stiffness and high strength.

Items / Test method / Units / Grade				High-Lubricity							Impact-Resistant, Soft
				High Viscosity	Medium Viscosity					High Flowability	Medium Viscosity
				LT802	LT804	LT200	FS410	LA541 LA543	LM511	LS701	4012
Specific gravity		D 792	–	1.42	1.42	1.40	1.42	1.38	1.42	1.42	1.42
Water absorption		D 570	%	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.2
Mechanical	Tensile strength	D 638	MPa	64	64	64	67	57	60	61	64
	Tensile elongation	D 638	%	80	80	40	30	30	30	40	70
	Flexural modulus	D 790	MPa	91	91	88	98	89	90	98	93
	Flexural strength	D 790	MPa	2650	2650	2740	2940	2650	2740	3140	2740
	Izot impact strength(notched)	D 256	J/m	118	118	69	39	69	59	49	88
	Rockwell hardness	D 785	M-scale	92	92	80	94	81	–	–	85
			R-scale	120	120	120	–	120	–	–	120
Taber abrasion	D 1044	mg/1000times	13	13	18	–	–	–	–	–	
Thermal	Melt index	D 1238	gr/10min	1.7	1.7	25	9	17	22	34	9
	Coefficient of linear expansion	(TMA)	x10 ⁻⁵ cm/cm°C	10	10	10	10	10	10	10	10
	Heat distortion temperature	D 645	°C(1.82MPa)	125	125	125	136	115	–	–	130
°C(0.45MPa)			172	172	172	170	165	–	–	172	
Flammability	(UL 94)	–	HB	HB	HB	HB	HB	HB	HB	HB	
Mold shrinkage	(Asahi Kasei method)	%	1.8~2.2	1.8~2.2	1.8~2.2	1.8~2.2	1.8~2.2	1.8~2.2	1.8~2.2	1.8~2.2	
Deflection Temperature Under Load				High impact, high elongation, and excellent friction and wear on metals.	Excellent friction and wear on metals.	Superhigh lubricity grade containing special lubricant.	Contains fluoropolymer; excellent friction and wear on plastics.	Excellent friction and wear on metals and plastics, except POM.	Excellent friction and wear on metals and plastics.	Excellent friction and wear on metals and plastics, low μ.	Medium-viscosity grade, with reduced stiffness and increased elongation through addition of special polymers.

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