

Material properties of *Genestar*

	Unit	Test method	<i>Genestar (HB grade)</i>			<i>Genestar (V-0 grade)</i>						Other products for reference				
Grade		(ASTM)	G1300H	G1350H	G1302	GR2300	GN2330	GN2450	GT2330	GN2332	GW2458HF	PA6T	PA46	PPS	LCP	LCP
Type BK (NA)			F02	F02	F		1	1	1	2						
			standard	standard	abrasion resistance	standard	standard	standard	toughness	high flow	low warpage, high flow					low warpage
Glass fiber content	%	—	30	35	30	30	33	45	33	33	45	30	40	40	30	40

Physical properties

Specific gravity	g/cm3	—	1.37	1.40	1.37	1.57	1.62	1.73	1.58	1.62	1.73	1.61	1.68	1.67	1.61	1.74
Water absorption (105F.40C/95%RH/96hrs)	%	—	1.6	1.4	1.4	1.1	1.0	0.7	1.0	1.0	0.8	2.6	3.6	0.06	0.04	0.04
Flammability	—	UL94	HB	HB	HB	V-0	V-0	V-0	V-0	V-0	V-0	V-0	V-0	V-0	V-0	V-0

Mechanical properties

Tensile strength	MPa	D638	160	180	165	180	185	200	190	165	165	175	163	208	150	138
Tensile elongation	%	D638	4.0	4.0	4.0	4.0	4.0	4.1	4.3	3.8	3.5	2.8	2.8	2.5	2.4	2.5
Weld strength	MPa	D638	45	45	47	55	54	40	60	36	35	54	57	67	20	19
Weld elongation	%	D638	0.6	0.6	0.7	0.7	0.7	0.4	0.8	0.3	0.3	0.7	0.7	0.7	0.2	0.2
Flexural strength	MPa	D790	205	230	210	220	240	270	240	215	225	222	223	257	167	161
Flexural modulus	GPa	D790	8.5	10	9	10	11	14	10	11	15	10	12	13	11	12
Izod impact strength (notched)	J/m	D256	105	115	115	100	100	105	100	110	125	90	90	80	116	—

Flow properties

MFR(610F/320C, 2.16kg)	g/10min	D1238	45	42	46	16	21	15	15	60	64					
Bar-flow length (610F.320C/0.5mmt/750kgf)	mm	—	53	53	55	65	55	37	45	85	71	55	62 (590F)	31	80 (645F)	104 (645F)

Thermal properties

Melting point	F/C	—	583/306	583/306	583/306	583/306	583/306	583/306	583/306	583/306	583/306	590/310	563/295	536/280	-	-
Glass transition	F/C	—	257/125	257/125	257/125	257/125	257/125	257/125	257/125	257/125	257/125	185/85	140/60	194/90	-	-
DTUL (1.82MPa)	F/C	D648	554/290	554/290	554/290	545/285	545/285	545/285	545/285	545/285	545/285	545/285	545/285	509/265	527/275	509/265

Electrical properties

Dielectric strength	MV/m	D149	30	30	30	30	30	30	30	30	30	28	24	24	30	30
Volume resistivity	Ω cm	D257	10 ¹⁶	10 ¹⁶	10 ¹⁶	10 ¹⁶	10 ¹⁶	10 ¹⁶	10 ¹⁶	10 ¹⁶	10 ¹⁶	10 ¹⁵	10 ¹⁵	10 ¹⁵	10 ¹⁶	10 ¹⁶
Tracking resistance	PLC	IEC60112	0	0	0	0	1	0	1	1	0	1	3	3	3	3
			(equivalent)	(equivalent)	(equivalent)											
Relative permittivity (10GHz)	—	D150	3.3	3.4	3.3	3.4	3.4	3.8	3.4	3.4	3.8	3.7	4.1	3.5	4.2	4.2
Dielectric loss tangent (10GHz)	—	D150	0.009	0.009	0.009	0.01	0.01	0.01	0.01	0.01	0.01	0.012	0.015	0.001	0.018	0.018

Dimensional properties

Molding shrinkage :in direction of flow (1mmt)	%	—	0.2	0.2	0.2	0.1	0.1	0.1	0.1	0.1	0.03	0.1	0.1	0.04	0.1	0.05
:at right angles to flow	%	—	0.8	0.8	0.7	0.65	0.6	0.5	0.6	0.6	0.40	0.7	0.7	0.50	0.6	0.38

* Table shows typical values, which are not specified values.

19-Dec-08