Generic ABS

Acrylonitrile Butadiene Styrene

Generic

Message:

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This information is provided for comparative purposes only.

General Information			
Physical	**Nominal Value**	**Unit**	**Test Method**
Specific Gravity			
--	1.03 - 1.11	g/cm³	ASTM D792
23°C	1.04 - 1.11	g/cm³	ISO 1183
--	1050	kg/m³	ISO 1183 [1]
--	1.01 - 1.10	g/cm³	ASTM D1505
Apparent Density	0.25 - 0.36	g/cm³	ASTM D1895
Melt Mass-Flow Rate (MFR)			
220°C/10.0 kg	1.0 - 36	g/10 min	ASTM D1238
220°C/10.0 kg	0.49 - 36	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR)			
220°C/10.0 kg	1.30 - 41.2	cm³/10min	ISO 1133
--	22.3	cm³/10min	ISO 1133 [2]
Molding Shrinkage			
Flow: 23°C	0.45 - 0.74	%	ASTM D955
Transverse flow: 23°C	0.37 - 0.91	%	ASTM D955
23°C	0.48 - 0.71	%	ISO 294-4
Water Absorption			
23°C, 24 hr	0.20 - 0.31	%	ASTM D570
23°C, 24 hr	0.26 - 0.31	%	ISO 62
Saturated, 23°C	0.30 - 1.0	%	ASTM D570
Saturated, 23°C	0.10 - 1.6	%	ISO 62
Saturation	0.19	%	ISO 62 [3]
Equilibrium, 23°C	0.30 - 0.31	%	ASTM D570
Equilibrium, 23°C, 50% RH	0.10 - 0.37	%	ISO 62
Hardness	**Nominal Value**	**Unit**	**Test Method**
Rockwell Hardness			
23°C	97 - 115		ASTM D785
23°C	95 - 117		ISO 2039-2
Ball Indentation Hardness	74.0 - 111	MPa	ISO 2039-1
Mechanical	**Nominal Value**	**Unit**	**Test Method**
Tensile Modulus			

23°C	1700 - 2830	MPa	ASTM D638
23°C	1730 - 2760	MPa	ISO 527-2
--	2150	MPa	ISO 527-2 [4]
Tensile Strength			
Yield, 23°C	34.1 - 51.2	MPa	ASTM D638
Yield, 23°C	35.8 - 63.5	MPa	ISO 527-2
Yield	41.6	MPa	ISO 527-2 [5]
Fracture, 23°C	26.4 - 50.1	MPa	ASTM D638
Fracture, 23°C	28.9 - 41.9	MPa	ISO 527-2
23°C	32.1 - 53.5	MPa	ASTM D638
23°C	40.0 - 48.5	MPa	ISO 527-2
Tensile Elongation			
Yield, 23°C	2.0 - 12	%	ASTM D638
Yield, 23°C	1.8 - 3.6	%	ISO 527-2
Yield	5.0	%	ISO 527-2 [6]
Fracture, 23°C	1.0 - 57	%	ASTM D638
Fracture, 23°C	4.6 - 27	%	ISO 527-2
Nominal Tensile Strain at Break			
23°C	8.8 - 36	%	ISO 527-2
--	16 - 50	%	ISO 527-2 [7]
Flexural Modulus			
23°C	1540 - 2880	MPa	ASTM D790
23°C	1860 - 2860	MPa	ISO 178
Flexural Strength			
23°C	52.0 - 81.6	MPa	ASTM D790
23°C	54.0 - 86.0	MPa	ISO 178
Yield, 23°C	54.8 - 77.5	MPa	ASTM D790
Fracture, 23°C	53.9 - 72.8	MPa	ASTM D790
Coefficient of Friction	0.080 - 0.46		ASTM D1894

Impact	Nominal Value	Unit	Test Method
Charpy Notched Impact Strength			
23°C	5.6 - 30	kJ/m^2	ISO 179
-30°C	8.46	kJ/m^2	ISO 179/1eA [8]
23°C	35.9	kJ/m^2	ISO 179/1eA [9]
Charpy Unnotched Impact Strength (23°C)	6.0 - 180	kJ/m^2	ISO 179
Notched Izod Impact			
23°C	92 - 410	J/m	ASTM D256
23°C	9.0 - 37	kJ/m^2	ISO 180
Unnotched Izod Impact			
23°C	59 - 1600	J/m	ASTM D256
23°C	6.8 - 100	kJ/m^2	ISO 180
Instrumented Dart Impact			

23°C	2.82 - 39.6	J	ASTM D3763
23°C	3.85 - 33.0	J	ISO 6603-2
Dart Drop Impact (23°C)	2.71 - 40.5	J	ASTM D3029
Thermal	**Nominal Value**	**Unit**	**Test Method**
Deflection Temperature Under Load			
0.45 MPa, not annealed	81.5 - 100	°C	ASTM D648
0.45 MPa, not annealed	71.8 - 105	°C	ISO 75-2/B
0.45 MPa, annealed	98.7 - 103	°C	ASTM D648
0.45 MPa, annealed	85.0 - 109	°C	ISO 75-2/B
1.8 MPa, not annealed	74.3 - 101	°C	ASTM D648
1.8 MPa, not annealed	71.8 - 99.8	°C	ISO 75-2/A
1.8 MPa, annealed	84.9 - 100	°C	ASTM D648
1.8 MPa, annealed	89.6 - 101	°C	ISO 75-2/A
Continuous Use Temperature	60.0 - 75.0	°C	ASTM D794
Glass Transition Temperature [10]	110	°C	ISO 11357-2 [11]
Vicat Softening Temperature			
--	83.6 - 116	°C	ASTM D1525
--	87.6 - 110	°C	ISO 306
50°C/h, B (50N)	94.6	°C	ISO 306 [12]
Ball Indentation Temperature	75.0 - 80.3	°C	IEC 60598-1
Linear thermal expansion coefficient			
Flow	7.9E-5 - 9.1E-5	cm/cm/°C	ASTM D696, ISO 11359-2
Flow	7.6E-5 - 1.0E-4	cm/cm/°C	ASTM E831
Flow	8.2E-5	cm/cm/°C	ISO 11359-2 [13]
Lateral	7.9E-5 - 1.2E-4	cm/cm/°C	ASTM E831
Lateral	5.8E-5 - 1.0E-4	cm/cm/°C	ISO 11359-2
Lateral	7.9E-5	cm/cm/°C	ISO 11359-2 [14]
Specific Heat (23°C)	1660 - 1670	J/kg/°C	ASTM C351
Thermal Conductivity			
23°C	0.15 - 0.22	W/m/K	ASTM C177
23°C	0.17 - 0.18	W/m/K	ISO 8302
RTI Elec	59.0 - 61.3	°C	UL 746
RTI Imp	58.8 - 60.5	°C	UL 746
RTI	59.0 - 61.3	°C	UL 746
Electrical	**Nominal Value**	**Unit**	**Test Method**
Surface Resistivity			
--	4.0 - 1.0E+15	ohms	ASTM D257
--	1.0E+10 - 1.0E+16	ohms	IEC 60093
Volume Resistivity			
23°C	0.15 - 1.3E+16	ohms·cm	ASTM D257
23°C	1.0E+12 - 2.5E+16	ohms·cm	IEC 60093
--	9.8E+12 - 1.0E+13	ohms·m	IEC 60093 [15]

Dielectric Strength			
23°C	15 - 35	kV/mm	ASTM D149
23°C	24 - 37	kV/mm	IEC 60243-1
Dielectric Constant			
23°C	2.80 - 3.21		ASTM D150
23°C	3.10 - 3.20		IEC 60250
23°C	2.95		IEC 60250
Dissipation Factor			
23°C	4.0E-3 - 0.015		ASTM D150
23°C	4.8E-3 - 0.015		IEC 60250
Arc Resistance	5.00 - 8.88	sec	ASTM D495
Comparative Tracking Index	581 - 600	V	IEC 60112
High Amp Arc Ignition (HAI)	195 - 200		UL 746
High Voltage Arc Tracking Rate (HVTR)	0.00 - 3.73	mm/min	UL 746
Hot-wire Ignition (HWI)	13 - 34	sec	UL 746
Flammability	**Nominal Value**	**Unit**	**Test Method**
Burning Rate	36 - 69	mm/min	ISO 3795
Glow Wire Flammability Index	642 - 960	°C	IEC 60695-2-12
Glow Wire Ignition Temperature	550 - 960	°C	IEC 60695-2-13
Oxygen Index	21 - 27	%	ASTM D2863
Optical	**Nominal Value**	**Unit**	**Test Method**
Gardner Gloss	59 - 99		ASTM D523
Gloss	30 - 100		ASTM D2457
Transmittance	86.0 - 93.0	%	ASTM D1003
Haze	1.5 - 4.0	%	ASTM D1003
Fill Analysis	**Nominal Value**	**Unit**	**Test Method**
Melt Viscosity	155 - 1550	Pa·s	ASTM D3835
Injection	**Nominal Value**	**Unit**	
Drying Temperature	73.5 - 89.3	°C	
Drying Time	2.2 - 3.7	hr	
Drying Time, Maximum	7.5	hr	
Dew Point	-18.8 - -17.3	°C	
Suggested Max Moisture	0.010 - 0.16	%	
Suggested Shot Size	55 - 63	%	
Suggested Max Regrind	13	%	
Hopper Temperature	70.0 - 245	°C	
Rear Temperature	169 - 245	°C	
Middle Temperature	189 - 246	°C	
Front Temperature	194 - 252	°C	
Nozzle Temperature	208 - 254	°C	
Processing (Melt) Temp	208 - 261	°C	
Melt Temperature (Aim)	233	°C	

Mold Temperature	49.0 - 71.4	°C
Injection Pressure	4.08 - 107	MPa
Holding Pressure	3.43 - 52.9	MPa
Back Pressure	0.00500 - 45.1	MPa
Screw Speed	44 - 76	rpm
Clamp Tonnage	4.1 - 4.5	kN/cm^2
Cushion	3.18 - 9.53	mm
Vent Depth	0.044 - 0.045	mm

Injection instructions
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Extrusion	Nominal Value	Unit
Drying Temperature	75.0 - 90.6	°C
Drying Time	2.8 - 3.7	hr
Suggested Max Moisture	8.5E-3 - 0.076	%
Cylinder Zone 1 Temp.	170 - 231	°C
Cylinder Zone 2 Temp.	199 - 211	°C
Cylinder Zone 3 Temp.	200 - 226	°C
Cylinder Zone 4 Temp.	199 - 225	°C
Cylinder Zone 5 Temp.	199 - 236	°C
Adapter Temperature	212 - 232	°C
Melt Temperature	196 - 246	°C
Die Temperature	214 - 226	°C
Take-Off Roll	70.0 - 95.0	°C

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NOTE	
1.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
2.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
3.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
4.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
5.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
6.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
7.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
8.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
9.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???

10.	10 °C/min
11.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
12.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
13.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
14.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???
15.	??????,?? ISO 10350 ??? 23°C/50%r.h. ???

Recommended distributors for this material

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