

**TYPICAL PROPERTIES OF ABS AND SAN**

ASTM or UL Test	Property	— STANDARD ABS GRADES —			— SPECIAL-PURPOSE ABS GRADES —					SAN Grades
		High Impact	Superhigh Impact	Medium Impact	High Heat	Flame Retardant	Clear	Expandable	Plating	
PHYSICAL										
D792	<b>Specific gravity</b>	1.01-1.05	1.02-1.05	1.04-1.06	1.04-1.06	1.19-1.22	1.05	0.55-0.85	1.05-1.07	1.07-1.08
D792	<b>Specific volume</b> (in <sup>3</sup> /lb)	27	27	28	28	—	26	—	26	26
MECHANICAL										
D638	<b>Tensile strength</b> (psi)	6,000	5,000- 6,300	6,000- 7,500	6,000- 7,500	5,500- 10,000	5,800- 6,300	3,000- 4,000	5,500- 6,600	9,000- 12,000
D638	<b>Elongation</b> (%)	5-20	5-70	5-25	3-20	5-25	25-75	—	—	1-4
D638	<b>Tensile modulus</b> (10 <sup>5</sup> psi)	3.3	2.0-3.4	3.6-3.8	3.0-4.0	3.2-3.7	3.0-3.3	1.0-2.5	3.0-3.8	4.5-5.6
D790	<b>Flexural strength</b> (psi)	10,500	6,000- 11,500	11,500	10,000- 13,000	9,000- 12,250	10,500	3,000- 8,000	8,700- 11,500	14,000- 17,000
D790	<b>Flexural modulus</b> (10 <sup>5</sup> psi)	3.4	2.0-3.5	3.6-4.0	3.1-4.0	3.0-3.4	3.4-3.9	1.4-2.8	3.0-3.8	5.5
D256	<b>Impact strength,</b> Izod (ft-lb/in of notch)	6.5	7.0-8.0	4.0-5.5	2.3-6.0	4.0-13.0	2.5-4.0	—	5.0-7.0	0.35-0.50
D785	<b>Hardness, Rockwell R</b>	103	69-105	107	111	90-117	100-105	60-70*	103-109	M85
THERMAL										
D696	<b>Coefficient of thermal expansion</b> (10 <sup>-5</sup> in/in-°F)	5.3	5.6	4.6	3.9-5.1	3.7-4.6	4.6	4.9	4.7-5.3	3.0
D648	<b>Deflection temp.†</b> *(°F)									
	At 264 psi	188	192	184	220-240	180-220	168	160	189	210
	At 66 psi	203	208	201	230-245	198-238	180-185	185	214	—
UL 94	<b>Flammability rating</b>	HB	HB	HB	HB	V-0 to V-1§	HB	HB-V-0	HB	HB
ELECTRICAL										
D149	<b>Dielectric strength</b> (V/mil)									
	Short time, 1/8-in thk	400	350-500	350-500	350-500	400+	400	—	—	—
D495	<b>Arc resistance</b> (s)	89	50-85	50-85	50-85	20-60	120-130	—	—	—

\*Density has a marked effect. †Unannealed. §0.060-in thick samples