

MECHANICAL

Properties	Test Method	Unit	CAST ACRYLIC TUBING (ASTM-D-5436)	CAST ACRYLIC RODS (ASTM-D-5436)
Specific Gravity	ASTM D-792	-	1.19	1.19
Tensile Strength	ASTM D-638			
Yield		psi	11,250	11,250
Elongation, Rupture		%	6.4	6.4
Modulus of Elasticity		psi	450,000	450,000
Flexural Strength (Rupture)	ASTM D-790	psi	15,250	15,250
Modulus of Elasticity		psi	475,000	475,000
Compressive Strength (Yield)	ASTM D-695	psi	18,000	18,000
Modulus of Elasticity		psi	440,000	440,000
Compressive Deformation (Under Load) 4000 PSI 122F, 24hr	ASTM D-621	%	0.75	0.75
Shear Strength	ASTM D-732	psi	9,000	9,000
Impact Strength Izod Milled Notch Falling Steel Ball, 0.5lb (Breakage drop height (ft))	ASTM D-256	ft-lbs/in of notch	0.375* 18	0.375* 18
Rockwell Hardness	ASTM D-785	-	M98*	M98*
Barcol Hardness	ASTM D-2583	-	50*	50*
Residual Shrinkage (Internal Strain) Polycast	ASTM D-4802	%	2.2	2.2

OPTICAL

Refractive Index	ASTM D-542	-	1.49	1.49
Luminous Transmittance (As Cast)	ASTM D-1003			
Total		%	92	92
Haze			<0.5	<0.5
Yellowness Index	ASTM D-1925		0.5	2.1
After 1000 hrs. Accelerated Weathering	ASTM G26			
Total		%	92	-
Haze			<0.5	-
Effect Of Accelerated Weathering-On Appearance Crazing / Discoloration / Warping	ASTM G26	-	none	-
Ultraviolet Transmission @ 320nm	-	%	0	0 @ 390nm
Taber Abrasion (500g. ea. wheel, 100 rev.) ANSI Z26.1	ASTM D-1044	-	14	-
Mar Resistance	ASTM D-637	-	29	-

THERMAL

Hot Forming Temperature	-	°F	320 **	320 **
Deflection Temperature under load	ASTM D-648			
Heat Distortion Temperature		°F		
66 psi		°F	230*	230*
264 psi			203*	203*
Maximum Recommended Continuous Service Temp.	-	°F	180	180
Coefficient of Linear Thermal Expansion	ASTM D-696	in/in/°F	0.000042	0.000042
Coefficient of Thermal Conductivity	Cento-Fitch	BTU/(hr) (Ft ²) (°F/in)	1.3	1.3
Water Absorption	26 day immersion	%	0.65	0.65
	24 hour immersion	%	0.2	0.2
Flammability (Burning Rate) UL94HB	ASTM D-635	in/min	1.2*	1.2*
Self-ignition Temperature	ASTM D-1929	°F	830*	830*
Specific Heat @ 77°F	DuPont 900 (Therm. An. Cal.)	BTU/(lb) (°F)	0.35	0.35
Smoke Density	ASTM D-2843	%	27**	27**

ELECTRICAL

Dielectric Strength Short Time Test	ASTM-D149	volts/mil. (1/8" thickness)	430**	Additional data codes and approvals are available upon request.
Dielectric Constant	ASTM-D150	-		
60 cycles			3.5	
1,000 cycles			3.2	*Asterisked values will change with thickness. Difference in length and width, as measured at room temperature, before and after heating above 300 °F
1,000,000 cycles			2.7	
Dissipation Factor	ASTM-D150	-		
60 cycles			0.06	
1,000 cycles			0.04	
1,000,000 cycles			0.02	
Power Factor	ASTM-D150	-		
60 cycles			0.06	
1,000 cycles			0.04	
1,000,000 cycles			0.02	
Loss Factor	ASTM-D150	-		
60 cycles			0.21	
1,000 cycles			0.13	
1,000,000 cycles			0.06	
Arc Resistance	ASTM-D495	-	No Tracking	
Volume	ASTM-D257	ohm-cm.	1.6x1016	
Surface Resisitivity	ASTM-D257	ohms	1.9x1015	

TUBING

Clear, Polished
71"-73" lengths
Custom lengths
can be cut for a
charge.

OD	.125"	.187"	.250"	.357"	.500"
1.250	.215	.306	.378		
1.500	.277	.397	.504		
1.625	.303	.435	.555		
1.750	.328	.473	.605		
1.875	.355	.489	.630		
2.000	.370	.548	.706	.889	1.075
2.250	.429	.624	.807	1.060	1.353
2.375	.453	.662	.857	1.145	1.431
2.500	.479	.699	.908	1.233	1.499
2.625	.483	.703	.950	1.297	1.635
2.750	.529	.775	1.008	1.437	1.703
2.875	.545	.813	1.059	1.513	1.806
3.000	.580	.851	1.109	1.588	1.932
3.125	.605	.889	1.168	1.664	2.030
3.250	.630	.926	1.210	1.740	2.126
3.375	.655	.964	1.260	1.815	2.223
3.500	.681	1.002	1.311	1.891	2.420
3.625	.705	1.039	1.362	1.967	2.520
3.750	.731	1.078	1.412	2.043	2.622
3.875	.757	1.115	1.462	2.119	2.724
4.000	.781	1.154	1.512	2.193	2.824
4.124	.807	1.191	1.564	2.269	2.925
4.250	.833	1.230	1.614	2.344	3.025
4.375	.860	1.275	1.664	2.420	3.125
4.500	.883	1.305	1.715	2.496	3.227
4.625	.908	1.342	1.765	2.572	3.329
4.750	.933	1.381	1.815	2.648	3.429
4.875	.957	1.417	1.865	2.722	3.529
5.00	.983	1.455	1.915	2.798	3.630
5.250	1.034	1.533	2.17	2.950	3.832
5.500	1.084	1.609	2.092	3.101	4.033
5.625	1.108	1.644	2.168	3.177	4.134
5.750	1.134	1.683	2.219	3.253	4.235
6.000	1.184	1.759	2.319	3.403	4.437
6.093	1.204	1.786	2.357	3.459	4.513
6.250	1.255	1.831	2.388	3.583	4.677
6.500	1.280	1.910	2.522	3.706	4.841
6.750	1.340	1.963	2.575	3.864	5.077
7.000	1.389	2.060	2.722	4.008	5.244
7.250	1.450	2.115	2.800	4.047	5.395
7.500	1.488	2.214	2.925	4.311	5.647
7.626	1.502	2.234	2.950	4.359	5.730
8.000	1.588	2.634	3.125	4.613	6.051
8.250	1.639	2.440	3.227	4.765	6.252
8.500	1.689	2.515	3.329	4.916	6.454
8.750	1.739	2.591	3.445	5.068	6.656
9.000	1.789	2.659	3.529	5.218	6.857
9.125	1.800	2.705	3.560	5.280	6.902
9.250	1.841	2.743	3.360	5.370	7.059
9.500	1.891	2.819	3.732	5.505	7.261
10.000	1.989	2.969	3.932	5.832	7.661
10.500	2.090	3.120	4.134	6.125	8.201
10.625	2.140	3.186	4.152	6.155	8.402
11.000	2.193	3.271	4.336	6.428	8.741
11.500	2.294	3.424	4.539	6.732	8.874
11.750	2.398	3.499	4.641	6.882	9.074
12.000	2.421	3.574	4.739	7.033	9.278
12.500	2.540	3.720	4.930	7.310	9.650
13.625	2.620	3.924	5.207	7.718	10.149
14.000	2.800	4.235	5.550	8.245	10.891
15.000	3.001	4.485	5.953	8.858	11.698
16.000	3.187	4.600	6.221	9.077	12.023
18.000	3.610	5.201	7.026	10.209	13.886
24.000	4.650	7.126	9.395	13.701	18.463
27.625	5.380	7.836	10.585	16.007	22.601

RODS

Clear, Polished
Machine-grade
rod is available
upon request.

Diameter	Lengths (ft)	(lbs/ft)	Tolerance
.250	8	.026	±.005
.312	8	.039	±.005
.375	8	.056	±.005
.500	8	.100	±.500
.625	8	.158	±.010
.750	8	.227	±.010
.875	8	.309	±.010
1.000	8	.403	±.010
1.125	8	.511	±.015
1.250	8	.630	±.015
1.375	8	.762	±.015
1.500	8	.907	±.015
1.625	8	1.070	±.015
1.750	8	1.240	±.015
1.875	8	1.420	±.015
2.000	8	1.610	±.015
2.125	6	1.820	±.030
2.250	6	2.040	±.030
2.500	6	2.520	±.030
2.750	6	3.050	±.030
3.000	6	3.630	±.030
3.250	4	4.260	±.045
3.500	4	4.940	±.045
3.750	4	5.670	±.045
4.000	4	6.450	±.045
4.250	4	7.280	±.045
4.500	4	8.200	±.045
4.750	4	9.100	±.045
5.000	4	10.100	±.045
5.250	4	11.100	±.045
5.500	4	12.200	±.045
5.750	4	13.300	±.045
6.000	4	14.600	±.045
6.500	3	17.200	±.050
7.000	3	20.000	±.050
7.500	3	22.800	±.050
8.000	3	26.000	±.050

TUBING TOLERANCES

Normal OD	Plus/Minus
1.250"-3.000"	.025
3.125"-3.875"	.030
4.000"-6.250"	.045
6.500"-8.700"	.050
13.625"-15.000"	.100
16.000"-27.625"	.125
Normal Wall Thickness	Plus/Minus
1/8"	.020
3/16"	.020
1/4"	.025
3/8"	.035
1/2"	.045