

## Technical Data

### Product Description

TARFLON™ #1700 is a Polycarbonate (PC) product. It is available in Asia Pacific. Applications of TARFLON™ #1700 include bottles, containers, electrical/electronic applications, kitchenware and medical/healthcare.

TARFLON™ #1700

Characteristics include:

- Flame Rated
- Clarity
- Good Dimensional Stability
- Impact Resistant
- Low Viscosity

Generic PC

This data represents typical values that have been calculated from all products classified as: Generic PC

This information is provided for comparative purposes only.

General	TARFLON™ #1700	Generic PC
Manufacturer / Supplier	• Formosa Idemitsu Petrochemical Corporation	• Generic
Generic Symbol	• PC	• PC
Material Status	• Commercial: Active	• Commercial: Active
Literature <sup>1</sup>	• <a href="#">Technical Datasheet (English)</a>	--
UL Yellow Card <sup>2</sup>	• <a href="#">E238753-230504</a>	--
Search for UL Yellow Card	• <a href="#">Formosa Idemitsu Petrochemical Corporation</a>	--
Availability	• Asia Pacific	• Africa & Middle East • Asia Pacific • Europe • Latin America • North America
Features	• Good Dimensional Stability • Good Electrical Properties • High Clarity • High Impact Resistance • Low Viscosity	--
Uses	• Bottles • Containers • Electrical Parts • Kitchenware • Medical/Healthcare Applications	--
UL File Number	• 238753	--
Forms	• Pellets	--
Also Available In	--	• Africa & Middle East • Asia Pacific • Europe • Latin America • North America

Physical	TARFLON™ #1700	Generic PC	Unit	Test Method
Density / Specific Gravity				
--	--	1.14 to 1.26	g/cm <sup>3</sup>	ASTM D792
--	1.20	1.18 to 1.21	g/cm <sup>3</sup>	ISO 1183
--	--	1.20	g/cm <sup>3</sup>	ASTM D1505



Physical	TARFLON™ #1700	Generic PC	Unit	Test Method
Apparent (Bulk) Density	--	0.63 to 0.66	g/cm³	ISO 60
Melt Mass-Flow Rate (MFR)				
300°C/1.2 kg	--	0.80 to 27	g/10 min	ASTM D1238
300°C/1.2 kg	27	1.8 to 24	g/10 min	ISO 1133
Melt Volume-Flow Rate (MVR)				
--	--	6.5 to 19	cm³/10min	ASTM D1238
300°C/1.2 kg	--	2.0 to 23	cm³/10min	ISO 1133
Spiral Flow	--	2.20 to 30.8	cm	
Molding Shrinkage				
Flow	0.50 to 0.70	0.50 to 0.79	%	ASTM D955
Across Flow	--	0.56 to 0.61	%	ASTM D955
--	--	0.51 to 0.82	%	ISO 294-4
Water Absorption				
24 hr	--	0.15 to 0.17	%	ASTM D570
24 hr, 23°C	--	0.15 to 0.25	%	ISO 62
Saturation	--	0.30 to 0.38	%	ASTM D570
Saturation, 23°C	0.23	0.050 to 0.40	%	ISO 62
Equilibrium	--	0.32 to 0.58	%	ASTM D570
Equilibrium, 23°C, 50% RH	--	0.066 to 0.18	%	ISO 62
Viscosity Number	--	50.0 to 63.0	cm³/g	ISO 307
Mechanical	TARFLON™ #1700	Generic PC	Unit	Test Method
Tensile Modulus				
--	--	1600 to 2670	MPa	ASTM D638
--	2000	1880 to 2710	MPa	ISO 527-1
Tensile Strength				
Yield	--	55.8 to 64.2	MPa	ASTM D638
Yield	65.0	53.8 to 66.8	MPa	ISO 527-2
Break	--	54.6 to 71.1	MPa	ASTM D638
Break	65.0	48.3 to 73.8	MPa	ISO 527-2
--	--	46.5 to 71.1	MPa	ASTM D638
--	--	57.8 to 68.7	MPa	ISO 527-2
Tensile Elongation				
Yield	--	0.22 to 18	%	ASTM D638
Yield	--	2.5 to 6.2	%	ISO 527-2
Break	--	0.0 to 140	%	ASTM D638
Break	95	1.0 to 130	%	ISO 527-2
Nominal Tensile Strain at Break	--	50 to 53	%	ISO 527-2
Tensile Creep Modulus				ISO 899-1
1 hr	--	2200	MPa	
1000 hr	--	1900	MPa	
Flexural Modulus				
--	--	1960 to 2540	MPa	ASTM D790
--	2300	1880 to 2600	MPa	ISO 178



Mechanical	TARFLON™ #1700	Generic PC	Unit	Test Method
Flexural Strength				
--	--	65.3 to 110	MPa	ASTM D790
--	90.0	71.4 to 102	MPa	ISO 178
Yield	--	82.6 to 105	MPa	ASTM D790
Break	--	74.8 to 108	MPa	ASTM D790
Compressive Strength				
--	--	60.4 to 113	MPa	ASTM D695
--	--	21.0 to 80.0	MPa	ISO 604
Coefficient of Friction	--	0.090 to 0.32		ASTM D1894
Taber Abrasion Resistance	--	9.50 to 10.1	mg	ASTM D1044
Wear Factor	--	-2.0 to 120	10 <sup>-8</sup> mm <sup>3</sup> /N·m	ASTM D3702
<b>Films</b>	<b>TARFLON™ #1700</b>	<b>Generic PC</b>	<b>Unit</b>	
Film Thickness - Tested	--	180 to 660	µm	
<b>Impact</b>	<b>TARFLON™ #1700</b>	<b>Generic PC</b>	<b>Unit</b>	<b>Test Method</b>
Charpy Notched Impact Strength	--	6.8 to 81	kJ/m <sup>2</sup>	ISO 179
Charpy Unnotched Impact Strength	--	38 to 300	kJ/m <sup>2</sup>	ISO 179
Notched Izod Impact				
--	--	36 to 910	J/m	ASTM D256
--	--	7.1 to 71	kJ/m <sup>2</sup>	ISO 180
Notched Izod Impact (Area)	--	10.0 to 86.0	kJ/m <sup>2</sup>	ASTM D256
Unnotched Izod Impact				
--	--	2100 to 3200	J/m	ASTM D4812
--	--	34 to 180	kJ/m <sup>2</sup>	ISO 180
23°C	40	--	kJ/m <sup>2</sup>	ISO 180
Instrumented Dart Impact				
--	--	52.7 to 87.5	J	ASTM D3763
--	--	48.9 to 71.8	J	ISO 6603-2
Multi-Axial Instrumented Impact Peak Force	--	4870 to 6550	N	ISO 6603-2
Gardner Impact	--	33.9 to 170	J	ASTM D3029
Gardner Impact	--	36.2 to 49.9	J	ASTM D5420
Tensile Impact Strength	--	366 to 640	kJ/m <sup>2</sup>	ASTM D1822
<b>Hardness</b>	<b>TARFLON™ #1700</b>	<b>Generic PC</b>	<b>Unit</b>	<b>Test Method</b>
Rockwell Hardness				
--	--	69 to 124		ASTM D785
--	--	48 to 121		ISO 2039-2
M-Scale	50	--		ISO 2039-2
R-Scale	120	--		ISO 2039-2
Shore Hardness	--	79 to 82		ISO 868
Ball Indentation Hardness	--	94.7 to 117	MPa	ISO 2039-1



Thermal	TARFLON™ #1700	Generic PC	Unit	Test Method
<b>Deflection Temperature Under Load</b>				
0.45 MPa, Unannealed	--	131 to 141	°C	ASTM D648
0.45 MPa, Unannealed	--	129 to 143	°C	ISO 75-2/B
0.45 MPa, Annealed	--	142 to 146	°C	ASTM D648
0.45 MPa, Annealed	--	136 to 146	°C	ISO 75-2/B
1.8 MPa, Unannealed	--	115 to 135	°C	ASTM D648
1.8 MPa, Unannealed	125	115 to 130	°C	ISO 75-2/A
1.8 MPa, Annealed	--	135 to 143	°C	ASTM D648
1.8 MPa, Annealed	--	138 to 143	°C	ISO 75-2/A
Continuous Use Temperature	--	120 to 135	°C	ASTM D794
<b>Glass Transition Temperature</b>				
--	--	143 to 146	°C	ISO 11357-2
--	--	145 to 148	°C	DSC
<b>Vicat Softening Temperature</b>				
--	--	132 to 157	°C	ASTM D1525
--	--	136 to 151	°C	ISO 306
Ball Indentation Temperature	--	125	°C	IEC 60598-1
Melting Temperature	--	140 to 232	°C	
<b>CLTE</b>				
Flow	6.5E-5	5.7E-5 to 7.0E-5	cm/cm/°C	ASTM D696
Flow	--	1.6E-5 to 0.17	cm/cm/°C	ASTM E831
Flow	--	6.5E-5 to 7.2E-5	cm/cm/°C	ISO 11359-2
Transverse	--	8.0E-6 to 1.8E-4	cm/cm/°C	ASTM D696
Transverse	--	5.9E-5 to 8.1E-5	cm/cm/°C	ASTM E831
Transverse	--	6.0E-5 to 8.1E-5	cm/cm/°C	ISO 11359-2
Specific Heat	--	1240 to 1270	J/kg/°C	ASTM C351
<b>Thermal Conductivity</b>				
--	--	0.13 to 0.48	W/m/K	ASTM C177
--	--	0.17 to 0.72	W/m/K	ISO 8302
RTI Elec	--	78.0 to 132	°C	UL 746B
RTI Imp	--	79.3 to 130	°C	UL 746B
RTI Str	--	78.0 to 132	°C	UL 746B
Electrical	TARFLON™ #1700	Generic PC	Unit	Test Method
<b>Surface Resistivity</b>				
--	--	2.5 to 2.6E+17	ohms	ASTM D257
--	--	1.0 to 1.0E+16	ohms	IEC 60093
<b>Volume Resistivity</b>				
--	--	10 to 2.5E+17	ohms·cm	ASTM D257
--	> 1.0E+16	1.0E+2 to 2.5E+17	ohms·cm	IEC 60093
--	--	1.0E+11 to 5.5E+14	ohms·m	IEC 62631-3-1
<b>Dielectric Strength</b>				
--	--	14 to 31	kV/mm	ASTM D149
--	--	17 to 34	kV/mm	IEC 60243-1
1.60 mm	30	--	kV/mm	IEC 60243-1



Electrical	TARFLON™ #1700	Generic PC	Unit	Test Method
Dielectric Constant				
--	--	2.80 to 3.20		ASTM D150
--	--	3.00 to 3.10		IEC 60250
100 Hz	2.91	--		IEC 60250
1 MHz	2.85	--		IEC 60250
--	--	2.90		IEC 60250
Dissipation Factor				
--	--	4.0E-4 to 0.078		ASTM D150
--	--	4.0E-4 to 0.012		IEC 60250
100 Hz	6.6E-4	--		IEC 60250
1 MHz	9.2E-3	--		IEC 60250
--	--	1.0E-3 to 0.010		IEC 62631-2-1
Arc Resistance	110	88.7 to 120	sec	ASTM D495
Comparative Tracking Index	--	113 to 250	V	IEC 60112
High Amp Arc Ignition (HAI)	--	90.0 to 120		UL 746A
Hot-wire Ignition (HWI)	--	23 to 45	sec	UL 746A
<b>Flammability</b>	<b>TARFLON™ #1700</b>	<b>Generic PC</b>	<b>Unit</b>	<b>Test Method</b>
Burning Rate	--	99 to 100	mm/min	ISO 3795
Flame Rating				UL 94
2.5 mm	HB	--		
3.0 mm	HB	--		
6.0 mm	HB	--		
0.36 mm	V-2	--		
2.4 mm	V-2	--		
Glow Wire Flammability Index	--	849 to 960	°C	IEC 60695-2-12
Glow Wire Ignition Temperature	--	788 to 883	°C	IEC 60695-2-13
Oxygen Index				
--	--	25 to 37	%	ASTM D2863
--	--	25 to 36	%	ISO 4589-2
<b>Optical</b>	<b>TARFLON™ #1700</b>	<b>Generic PC</b>	<b>Unit</b>	<b>Test Method</b>
Gloss	--	3 to 100		ISO 2813
Refractive Index				
--	1.585	1.584 to 1.587		ASTM D542
--	--	1.566 to 41.18		ISO 489
Light Transmittance	85.0 to 89.0	86.7 to 89.1	%	ASTM D1003
Haze	--	-0.500 to 2.01	%	ASTM D1003
<b>Fill Analysis</b>	<b>TARFLON™ #1700</b>	<b>Generic PC</b>	<b>Unit</b>	<b>Test Method</b>
Melt Density	--	1.01	g/cm <sup>3</sup>	
Melt Thermal Conductivity	--	0.24	W/m/K	ASTM C177
<b>Injection</b>	<b>TARFLON™ #1700</b>	<b>Generic PC</b>	<b>Unit</b>	
Drying Temperature	--	119 to 122	°C	



Injection	TARFLON™ #1700	Generic PC	Unit
Drying Time	--	2.4 to 5.2	hr
Drying Time, Maximum	--	28	hr
Dew Point	--	-29	°C
Suggested Max Moisture	--	0.020 to 0.025	%
Suggested Shot Size	--	50	%
Suggested Max Regrind	--	20	%
Hopper Temperature	--	70	°C
Rear Temperature	--	254 to 304	°C
Middle Temperature	--	268 to 311	°C
Front Temperature	--	277 to 323	°C
Nozzle Temperature	--	277 to 316	°C
Processing (Melt) Temp	--	277 to 322	°C
Melt Temperature (Optimum)	--	285	°C
Mold Temperature	--	75 to 100	°C
Injection Pressure	--	84.5 to 103	MPa
Holding Pressure	--	87.9 to 90.0	MPa
Back Pressure	--	0.413 to 0.787	MPa
Screw Speed	--	52 to 57	rpm
Clamp Tonnage	--	4.8	kN/cm <sup>2</sup>
Vent Depth	--	0.047 to 0.056	mm

**Injection Notes**

Generic PC This data represents typical values that have been calculated from all products classified as: Generic PC  
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Extrusion	TARFLON™ #1700	Generic PC	Unit
Drying Temperature	--	109 to 124	°C
Drying Time	--	3.3 to 13	hr
Cylinder Zone 1 Temp.	--	267 to 270	°C
Cylinder Zone 2 Temp.	--	283 to 287	°C
Cylinder Zone 3 Temp.	--	281 to 285	°C
Cylinder Zone 4 Temp.	--	282 to 285	°C
Adapter Temperature	--	289 to 294	°C
Melt Temperature	--	274 to 312	°C
Die Temperature	--	276 to 298	°C

**Extrusion Notes**

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**Notes**

- <sup>1</sup> These links provide you with access to supplier literature. We work hard to keep them up to date; however you may find the most current literature from the supplier.
- <sup>2</sup> A UL Yellow Card contains UL-verified flammability and electrical characteristics. UL Prospector continually works to link Yellow Cards to individual plastic materials in Prospector, however this list may not include all of the appropriate links. It is important that you verify the association between these Yellow Cards and the plastic material found in Prospector. For a complete listing of Yellow Cards, visit the UL Yellow Card Search.
- <sup>3</sup> Typical properties: these are not to be construed as specifications.



Where to Buy

Supplier

TARFLON™ #1700

**Formosa Idemitsu Petrochemical Corporation**

Taipei, Taipei Taiwan

Telephone: +886-2-2712-2211

Web: <http://www.fcfc.com.tw/plastic/en/>

Generic PC

**Generic**

Distributor

TARFLON™ #1700

Please contact the supplier to find a distributor for TARFLON™ #1700

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