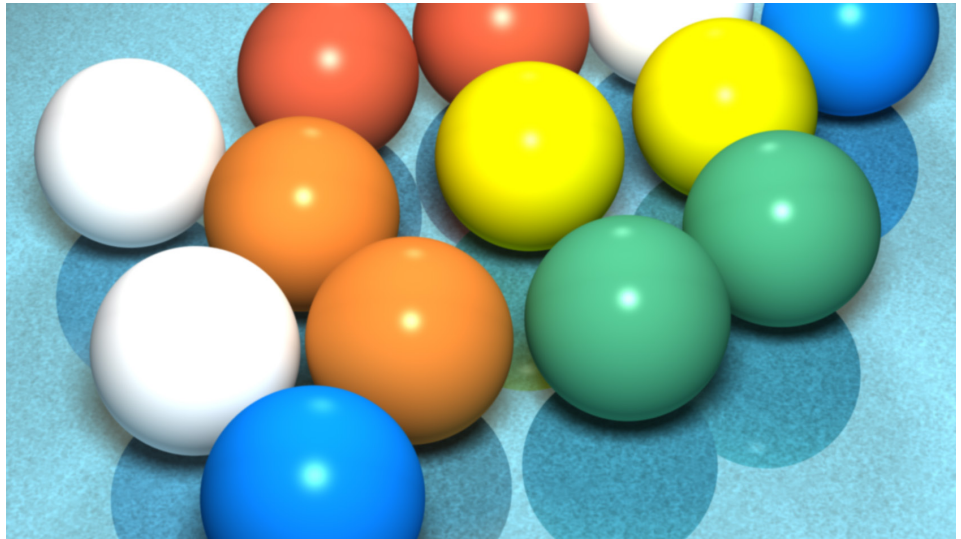


TECHNICAL BULLETIN: PTFE BALLS

IPM-TEK produces solid PTFE Balls in a range of sizes, colors, and PTFE materials (Polytetrafluoroethylene), including our G400 (Virgin PTFE). The Virgin PTFE ball is a unique, low friction product, inert to most liquids and corrosives, and is non-contaminating, making it the ideal material for use in applications where metals and alloys would corrode quickly. Capable of withstanding temperatures from -328°F up to +500°F, Virgin PTFE can handle an extremely wide range of environments and is often used in high temperature applications, and others, including, column packing, check, relief & float type ball valves, carburetors and switches, and can also be used as light load ball bearings, or as mixing beads. PTFE balls (in their natural state) are heavier than water.

While Virgin PTFE balls are White or Off-White in color, PTFE Balls can also be made from blended materials, such as 50% Stainless Steel filled, glass filled, bronze, etc. Adding a filler will generally color the ball to match the filler, but other custom colors can be achieved. Colored balls are useful for color coding purposes and can help identify the balls used in your production line. You must request custom colors prior to fabrication. Certain fillers or colors may affect the physical properties of the ball. Please inform us if testing of a certain blend is required.

Whether you're looking for virgin PTFE Balls or custom blended compounds & colors, give IPM-TEK a call and we can design and produce a solution for your application.



PTFE G400 (Virgin PTFE)			
Properties	Unit	Method	Typical Value
PHYSICAL - MECHANICAL			
Density	g/cm ³	ASTM D792	2.14 - 2.18
Hardness - Shore D	points	ASTM D2240	51 - 60
Tensile strength - CD	MPa	ISO 527	≥ 20
Elongation at break - CD	%	ISO 527	>200
Compressive strength at 1% deformation - CD	psi	ASTM D695	580 - 725
Deformation under load at room temperature after 24 hours at 13.7 N/mm ² - CD	%	ASTM D621	14 - 17
Permanent deformation as above after 24 hours of rest at room temperature - CD	%	ASTM D621	7 - 8
Deformation under load at 260°C, after 24 hours at 41 N/mm ² - CD	%	ASTM D621	
Permanent deformation as above after 24 hours of rest at room temperature - CD	%	ASTM D621	7 - 8
Impact strength Izod	J/m	ASTM D256	153
TRIBIOLOGICAL			
Dynamic coefficient of friction	/	ASTM D1894 ASTM D3702	0.06
Wear factor K	/	ASTM D3702	2.900
PV limit	at 3 m/min at 30 m/min at 300 m/min	N/mm ² • m/min	2.4 4.2 5.7
THERMAL			
Service Temperature (min - max)	°F	/	-328 / +500
Thermal expansion coefficient (linear) 25 - 100°C	10 ⁻⁵ in/in/°F	ASTM D696	6.625 - 7.206
ELECTRICAL			
Dielectric strength (specimen 0.5 mm thick)	KV/mm	ASTM D149	≥ 40
Dielectric Constant at 60 Hz and 106 Hz	/	ASTM D150	2.05 - 2.10
Volume Resistivity	Ω • cm	ASTM D257	10 ¹⁸
Surface Resistivity	Ω	ASTM D257	10 ¹⁷

CD = Cross Direction

The data we are herewith providing are all based on laboratory testing and are proposed to technical designers as possible and useful advice. Deviations from the values indicated may occur, but they do not constitute themselves either detriment of quality or reason for rejection.

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IPM TEK
THE AMERICAN PTFE MANUFACTURER