



Since 1890

THE AKRON PORCELAIN & PLASTICS COMPANY

Manufacturers of Ceramic & Plastic Components

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Properties of Ceramic Formulations

		ELECTRICAL PORCELAIN FORMULATIONS							
UNITS		White Porcelain			Steatite	Grey Porcelain			
		Regular	1/8 Reg.	9/64 Reg.	S - 313	Everett	1/8 Grey	9/64 Grey	Pyro
		AP-099	AP-102	AP-098		AP-089	AP-088	AP-100	AP-086
Shrink	%	11.3	12.5	14.1	21.0	11.9	12.5	13.6	11.8
Absorption	%	1.0	1.0	1.0	4.0	1.0	1.0	1.0	1.0
Apparent Specific Gravity		2.4	2.4	2.4	2.6	2.4	2.4	2.4	2.4
MOR	psi	4,400	4,000	3,700	7,600	4,535	3,500	4,200	4,200
Thermal Expansion (25 - 700C)	1E ⁻⁶ in/inC	5.25E ⁻⁶	5.25E ⁻⁶	5.25E ⁻⁶	7.5E ⁻⁶	5.23E ⁻⁶	5.23E ⁻⁶	5.23E ⁻⁶	5.23E ⁻⁶
Thermal Conductivity 25°C	W/m [°] K	1.5	1.5	1.5	2.0	1.5	1.5	1.5	1.5
Tensile Strength	psi	2,500	2,500	2,500	10,000	2,500	2,500	2,500	2,500
Compressive Strength	psi	40,000	40,000	40,000	80,000	40,000	40,000	40,000	40,000
Dielectric Strength	volts/mil	82.0	50.0	50.0	240.0	67.0	50.0	50.0	50.0
Resistance to Impact	Inch-lbs	2.4	2.4	2.4	n/a	2.4	2.4	2.4	2.4

		REFRACTORY CERAMIC BODY							
UNITS		Alumina **	Semi Cordierite			Semi Mullite			Fused Silica
		AL HP 5	Mullite	Capitol	C109-9	Ford	SC-28	SC-34	RB-6B
		AP-120	AP-330	AP-305	AP-807	AP-465	AP-472	AP-471	AP-700
Shrink	%	14.7	8.7	5.0	5.1	8.2	5.5	6.0	3.8
Absorption	%	3.4	12.0	15.0	15.0	16.0	11.0	13.0	15.0
Apparent Specific Gravity		3.35	2.57	3.03	2.68	2.77	2.86	2.35	2.40
MOR	psi	6,500	2,700	2,200	2,000	1,650	1,800	1,500	1,500
Color		White	Buff	Cream	Buff	White	White	White	White
Thermal Expansion (25 - 700C)	1E ⁻⁶ in/inC	7.1E ⁻⁶	3.65E ⁻⁶	n/a	3.64E ⁻⁶	8.2E ⁻⁶	n/a	6.68E ⁻⁶	2.03E ⁻⁶
Dielectric Strength	volts/mil	n/a	n/a	68.0	59.0	n/a	n/a	n/a	n/a
Thermal Conductivity 25°C	W/m [°] K	4.0			1.8				

		INJECTION MOLDED BODY											
UNITS		Leachable Core Bodies				Electrical					Refractory		
		IM 147	IM 149	IM 150	IM 159	IM 191	IM 192	IM 270	IM 276	IM 198**	IM 308	IM 400	IM 500
		AP-510	AP-503	AP-511	AP-505	AP-506	AP-512	AP-508	AP-513	AP-504	AP-507	AP-501	AP-509
		96% Fused Silica	74% Fused Silica; 24% Zr	74% Fused Silica; 24% Zr	Regular Porcelain	White Porcelain	Alumina Porcelain (57% Al)	Grey Porcelain	Tan Alumina Porcelain (55% Al)	99.8% Alumina	Steatite	Cordierite	Capital
Shrink	%	1.0	1.0	1.0	14.0	15.3	19.7	18.4	20.200	19.2	15.8	9.2	8.6
Absorption	%	24.0	21.0	21.0	1.0	1.0	0.0	0.2	0.0	0.0	0.0	17.0	16.0
Apparent Specific Gravity		2.35	2.64	2.67	2.45	2.42		2.47		3.87	2.50	2.68	2.40
MOR	psi	1,370	1,600	2,280	5,600	6,500	15,000	10,000	22,500	20,000	19,000	6,000	4,000
Dielectric Strength (ASTM D-149)	V/mil				93	93	159	174	218	199	195	70	61
Color		White	White	White	White	White	White	Grey	Tan	White	Buff	Buff	Buff
Thermal Expansion (25 - 700C)	1E ⁻⁶ in/inC	13.95	n/a	16.36	5.25	5.25	n/a	5.25	n/a	8.20	8	n/a	n/a
Thermal Conductivity 25°C	W/m [°] K				1.5	1.5		1.5		28	2	1.8	
Leachability in 230F, 45% NaOH		Very Good				n/a					n/a		

** High Temperature Firing Required

6/26/15

The information and data presented on this sheet is based on testing and research and believed to be accurate. Due to the variant nature of mineral deposits as they are mined, the user is responsible for determining the suitability for their process and their products/production needs. AP&P does not warrant the results and disclaims all liability for any inaccuracies or omissions, or for any direct, special or indirect or consequential damages or losses of whatever kind resulting from any any causes, or from products and information mentioned on this sheet.



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