Marketech International, Inc. 107B Louisa Street • Port Townsend, WA 98368 - www.mkt-intl.com
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REPTON Aluminum Oxide Materials

Brand	Composition	Density G/cm²	Porosity %	Bending Strength MPa	Spall Resist C° (1)	Hot Creep Test - mm Def @ C° (2)			Thermal exp. Coef. ppm/C°		Features
						1400	1500	1550	@300	@900	
006	AlOx 99.99	3.9	0.0	>400	-						Ultra high purity
115	AlOx 99.6	3.2	11	>255	500	2	5	14	6.5	8.0	High Density, high purity
125	AlOx 99.6	3.4	1	>182	500	1	1.5	2	6.5	8.0	High Purity, standard
136	AlOx 99.6	3.9	0	>392	550	2	6	15	6.0	8.0	Molding type, structural
214	AlOx 99.6	2.6	35	>56	450	2	17				High porosity, high purity
202	AlOx 99.6	1.8	55	>22	400						
201	AlOx 99.6	1.5	63	>7	400						

Repton Alumina-Silica Materials

Brand	Composition Alox/SiOx	Density G/cm²	Porosity %	Bending Strength MPa	Spall Resist C° (1)	Hot Creep Test - mm Def @ C° (2)			Thermal exp. Coef. ppm/C°		Features
						1400	1500	1550	@300	@900	
314	Mullite 93/7	2.6	28	>13	600	1	1	1	4.2	6	Superior hot creep, spall res.
504	Mullite 90/10	2.5	32	>7	650	1	1	4	3.9	5	Mullite body, max spall res.
601	Mullite 80/20	1.0	70	>11	350	1	4	11	3.8	5	Extra light weight
632	Mullite 80/20	1.5	56	>27	400	1	1	5	4	5	Light weight setter
663	Mullite 80/20	2.4	29	>25	500	1	1	3	4	5	Can be zirconia coated

Repton Zirconia Materials

Brand	Composition	Density G/cm²	Porosity %	Bending Strength MPa	Spall Resist C° (1)	Hot Creep Test - mm Def @ C° (2)			Thermal exp. Coef. ppm/C°		Features
						1400	1500	1550	@300	@900	
827	Zr/Yt 3 mol%	4.1	30	>96							Co-precip, high porosity
868	Zr/Yt 8 mol%	6.0	0	>160					8	10	Hi-density
835	Zr/Ca 4mol%	3.3	43	>22	350	1	5	11	8	8	High porosity
837	Zr/Ca 4.4mol%	4.2	27	>18	500	1	3	6	8	8	Good spalling characteristics
838	Zr/Yt 3 mol%	6.1	0	>1050					9.7	10.3	Co-precip, high strength
848	Zr/Yt 3 mol%	6.1	0	>1050					9.7	10.3	

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New Repton Materials

Brand	Composition	Density G/cm²	Porosity %	Bending Strength MPa	Spall Resist C° (1)	Hot Creep Test - mm Def @ C° (2)			Thermal exp. Coef. ppm/C°		Features
						1400	1500	1550	@300	@900	
902	Cordierite 2Mg 2Al 5SiOx	1.5	35	>35	850	1	13		0.2	1	
914	Magnesia MgO	3.1	11	>98	300				12	14	
922	Yttria Y_2O_3	2.0	60	>7							
EXP 386	Aluminum Titanate	2.7	14	>25	1000				0.0	1.7	
931	Cordierite 2Mg 2Al 5SiOx	1.4	44	>19	750	1	15.5		0.1	2	
EXP 22	Magnesia	3.4	0.1	>89	350				11.2	13.2	
EXP 48	Cordierite 2Mg 2Al 5SiOx	2.3	0.6	>66	750	1	4		1	2	
EXP 93	Cordierite Mullite	2.2	25		900						
EXP 36	Cordierite+ Mullite	1.9	32		950				6	7.8	
EXP 338	Alumina 99.6%	1.0	70	>11	350	1	4	11	6.6	8	High Porosity
EXP 383	Alumina 96%	3.7	0	>275							

Testing Notes:

(1) **Spalling Test:** A 200 x 200 x 2 mm test specimen is supported at the corners by 25 pillars. A 50 gram weight is placed in the center and the plate and pillars are inserted and removed from a furnace at temperature. The highest temperature where no cracking occurs after 5 cycles is determined to be the Spall Resistant Temperature.

(2) **Hot Creep Test:** A 180 x 25 x 2 mm specimen is supported across a 160 mm span with a 35 gram load placed at the center of the specimen. The specimen is heated for 5 hours at several temperatures and the deflection in mm is measured and recorded.