

MgO

Run No.	Temp. (°C)	Pressure (psi)	Time (min)	Results
9A	350*	250,000	11	0.092 micron, bluish color, small grain.
10A	150*	250,000	10	Not dense, poor sample.
11A	280*	250,000	12	Not dense, low power.
15A	790*	250,000	13	Laminated, high density, bluish, 0.379 micron.
20A	800*	250,000	5	Laminated, dark blue sample, 0.114 micron.
21A	620*	250,000	10	Laminated, high density, slightly blue.
22A	720*	250,000	8	Laminated, high density, almost black.
24A	1190	250,000	3	Four pieces white except at ends (blue), 0.314 micron.
25A	725*	250,000	6	Dense, bluish, white.
26A	800*	250,000	3	Disks, transparent and milky pieces.
30A	800*	250,000	5	Disks, delaminated, transparent, translucent thick pieces.
31A	620*	250,000	4	Delaminated, disks 1/16 inch approx. All disks translucent. Some were transparent.
32A	725*	250,000	5	Two phases, present in MgO translucent and opaque.
1B	1060	23,970	12	No delamination present--cracked during cutting.
2B	640	57,900	8	Leak in vacuum. Sample collapsed, very porous.
3B	730	57,900	8	Sample very porous.
4B	1220	15,000	5	Circuit broke.
5B	1050	30,000	5	Sample began to densify. Not held long enough at temperature.
6B	1180	31,000	3	No results.
7B	1530	31,000	4	Pieces of samples scratched Rc57 tool steel.
8B	796	45,000	10	Sample didn't densify. Thermocouple shorted.
9B	350*	63,000	2	Thermocouple shorted 63,000 psi. Punch crack, Porous sample.
10B	1600	45,000	9	1047KHN, density of sample was determined H ₂ O 93% dense, pore open.
11B	725*	72,000	9	70KHN, MgO translucent. Some stuck to Ni. Dense 90% of 10.
12B	920	31,000	2	1128 KHN MgO translucent. Top was opaque. It was fully dense.
13B	1100	31,000	3	MgO pieces were obtained. Seemed dense. Not hard enough to scratch Rc57 steel.
14B	1015	31,000	5	Sample very hard. Scratch Rc57, steel pieces were small.
15B	850*	31,000	3	Sample looked denser. Pieces were grey, some white.
17B	1100	31,000	5	Majority of samples dense. Quite porous.
18B	990*	70,000	4	97%. Dense.
19B	875	75,000	2	Pressed 50% of its length. Smoky quartz, scratch Rc57.
20B	1000*	75,000	5	Large pieces MgO obtained were dense, translucent.
21B	1000	75,000	4	Sample 45°. Sample dense--not as hard as others.
22B	900	60,000	3	450KHN, two large pieces obtained. One sent to metallography to polish.

* Temperature estimated for power.

MgO (Concl'd)

Run No.	Temp. (°C)	Pressure (psi)	Time (min)	Results
19C	910*	250,000	5	Black specks of graphite. Very porous.
21C	870*	250,000	10	Many delaminated transparent disks formed.
20C	920	250,000	10	Many small pieces of transparent MgO.
24C	500*	250,000	3	Temperature too low. Black MgO--unreacted MgO.
25C	900*	250,000	5	Poor run, very porous, not prepressed.
31C	850*	500,000	5	Black MgO obtained. Temperature too low.
33C	1000*	500,000	6	Black material formed. Very porous, poor.
45C	845	250,000	10	Given to AFCRL.
53C	850	250,000	10	
54C	900	250,000	10	
56C	910	250,000	10	
57C	1020	250,000	10	
58C	855	250,000	10	
60C	948	110,000	10	Bend specimen, modulus of rupture 26,000 psi.
61C	1105	110,000	10	
62C	950	110,000	10	Modulus rupture 29,600 psi and 8000 (crazed piece).
63C	800	110,000	10	
68C	950	110,000	45	
69C	930	110,000	30	
70C	960	110,000	32	
74C	1015*	110,000	12	
75C	940	110,000	30	
76C	935	110,000	30	
77C	1100	110,000	30	
78C	970	110,000	30	
79C	940	110,000	30	Modulus rupture 9670 psi (crazed piece).
80C	700	45,000		Vacuum chamber short circuit, sample very porous.
82C	870	110,000	10	Cracked, sent to AFCRL for IR spectra.
83C	800	110,000	10	Submitted, AFCRL for IR spectra.
84C	990	110,000	10	Cracked.
85C	1000	110,000	10	Cracked.
86C	870	110,000	10	Cracked.
87C	990	110,000	13	Sent to AFCRL for IR Spectra.
88C	1105	110,000		Sent to AFCRL for IR Spectra.
89C	1000*	110,000	30	Cracked.
90C	980	110,000	30	Cracked.

*Temperature estimated for power.