

BRUSHWELLMAN

ENGINEERED MATERIALS

MATERIAL CERTIFICATION

Customer: General Services Administration
 Stockpile Acquisitions Div.
 Rm. 5207, Attn: R. A. Talbott
 18th & F Streets, N.W., Washington, DC 20405

Date: September 25, 1984
 S.O.#: EMA-202
 P.O.#: GS0083-DXXC-0006
 Specification: P110a-R1,
 Grade A, Type I

Material Description:

Lot No. 3224, One (1) Beryllium Metal Hot Pressed Block.
 Net Weight = 2,820 lbs.
 Gross Weight = 3,375 lbs.

CHEMICAL COMPOSITION: (WT. %)					MECHANICAL PROPERTIES														
ELEMENT	Top 3224	Bot. 3224		Dirct.	Y.P. DIR:	FTU (psi)ksi	FTY (psi)ksi	% EL	Yld./Ult.	Temp.									
Be	99.4	99.2		Top:															
BeO	.8	.9		Long.	33.7	48.9	33.5	3.3	.68	Room									
Fe	.07	.07		Long.	33.7	48.9	32.9	3.4	.67	Room									
C	.07	.06		Trans.	34.4	53.0	33.7	4.4	.64	Room									
Al	.03	.03		Trans.	34.8	54.3	34.0	6.6	.63	Room									
Mg	.01	.03		Trans.	---	14.7	---	12.7	---	1200°									
Si	.02	.02																	
S	-.01	-.01		Bot.:															
U	-.01	-.01		Long.	---	48.5	33.2	3.1	.68	Room									
Ni	-.01	-.01		Long.	---	48.7	33.3	3.1	.68	Room									
Cr	-.01	-.01		Trans.	---	53.8	32.5	6.5	.60	Room									
Mn	.01	.01		Trans.	---	53.6	32.5	6.5	.61	Room									
Cu	-.01	-.01		Trans.	---	15.4	---	13.4	---	1200°									
Ti	-.01	-.01																	
					DENSITY gm/cc: x Theoretical			AVG GRAIN SIZE: (Microns)											
					99.8%			<table style="width: 100%; border: none;"> <tr> <td style="border: none;"></td> <td style="border: none; text-align: center;">Top</td> <td style="border: none; text-align: center;">Bot.</td> </tr> <tr> <td style="border: none;">Avg.</td> <td style="border: none; text-align: center;">11.7</td> <td style="border: none; text-align: center;">11.5</td> </tr> <tr> <td style="border: none;">Max.</td> <td style="border: none; text-align: center;">37</td> <td style="border: none; text-align: center;">40</td> </tr> </table>				Top	Bot.	Avg.	11.7	11.5	Max.	37	40
	Top	Bot.																	
Avg.	11.7	11.5																	
Max.	37	40																	
					RADIOGRAPHIC INSP. PER P110a-R1			PENETRANT INSP. PER MIL-I-63661B											
					ADDITIONAL INFORMATION:														
BATCH NO.					Ultrasonic inspection in accordance with P110a-R1. X-ray No. G-3484														
OTHER ELEM.EA.																			
OTHERS TOTAL																			

This is to certify that the above material satisfies the requirements of Specification see above
 Drawing _____ Purchase Order see above and was removed from Pressing No. 3224

R. P. Garner
BRUSHWELLMAN INC. R. P. Garner
 QUALITY CONTROL

cc:
 Shipping (3) Sales (1) File (1)