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INTER-OFFICE MEMORANDUM

DATE July 17, 1947

357

TO: Dr. N. E. Bradbury

FROM: Harry S. Allen

SUBJECT: Meeting on Beryllium at MSA, June 27, 1947

Symbol: IAB-A-4

The meeting at MSA's offices on June 27 for the purpose of discussing the Commission's beryllium program was roughly divided into three main topics.

1. Supply and Purity of Beryllium:

   I am attaching a table showing the analyses of the five different types of beryllium now available to AEC projects. Brush is in a position to produce approximately 1500 lbs. per month total of both their grades. Beryllium Corporation Acetate is operating at a capacity of 600 lbs. per month. The Clifton Flake production varies from between 200 to 500 lbs. a month and only the minimum can be counted on at present. (The latter grade is entirely used at the present in making small pressings.)

   Apparently the purest material is that produced by the Beryllium Corporation's acetate process. This consists of making pure hydroxide into acetate and then distilling. The distillation gives a purification which is more effective than any other beryllium purification method yet discovered. The material is changed to the fluoride and then to metal by conventional methods.

2. Requirements of the Different AEC Projects:

   Scheduling of Commission requirements was done with the following understanding reached as to delivery here of our orders: AL-5 (the beryllium blocks) to be delivered completely by August 15, the balance of AL-4 (rod order) to be completed by October 1 with partial delivery of 1" and possibly some more 3" by September 1.

   I might say in connection with this that Schenectady, Brookhaven and Oak Ridge all wanted comparatively large quantities, a ton or more, immediately. As all of these requirements were for experimental work programmed at these places, I stated that Project "Y" did not want their 20 months old orders diverted under any circumstances to make way for these new requests. I did, however, compromise on the delivery of the balance of the rod order to allow some satisfaction of a pressing Oak Ridge need.

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Form 25

3. New Developments in Fabricating Beryllium:

Some samples were present of machined rolled and cast beryllium. Machine work shown in no case was any better than we have produced in our own shop. The rolled sheet was in pieces approximately 3" by 12" and about 1/8" thick. It was not uniform and had flaws particularly near the edges in the form of cracks. The most interesting samples were relatively thin wall tubes with fins welded on them. Considerable research has been done at MIT in welding two pieces of beryllium together and they are now capable of making several shapes by this method. The most practical application seems to be the finned tubes.

HSA/as
enc.

Hy Allen

cc: Dr. Jette
Dr. Froman
Associate Director
File

(unless otherwise shown)

Element	Brush Premium	Brush Tech	Vacuum Cast Tech (made from Brush Tech)	Be Corp. Acetate	Clifton Flake
Ag	50	50	1	2.5	
Al	less than 1000	less than 1000	900	50	300
B	2	2	3	not detected	1 to 5
Be	99% min.	90 - 99%	99.7%	-	99.7 - 99.8%
Ca				150	
Cr	25	25	100		
Cu	less than 1000	less than 1000	50	150	50
Fe	1000	1000		500	25
Li				not detected	
Mg	2000	5% or less	200	3000	25
Mn	less than 5	less than 5	80	150	not detected
Na	500	500	not detected		100
Ni	25	25	less than 20	.01 - 0.1%	
Pb	30	30	less than 2	15	
Si	less than 100	less than 100	500	.01 - 0.1%	5
Sn				.001 - .01%	
Zn	400	400	not detected		
Ba				not detected	