

DEPARTMENT OF COMMERCE

Bureau of Standards

Certificate of Analyses

OF

STANDARD SAMPLE No. 104

BURNED MAGNESITE

(All results are calculated on a loss on ignition basis)

ANALYST*	SiO <sub>2</sub>	Fe <sub>2</sub> O <sub>3</sub>	Al <sub>2</sub> O <sub>3</sub>	Cr <sub>2</sub> O <sub>3</sub>	P <sub>2</sub> O <sub>5</sub>	TiO <sub>2</sub>	CaO	MgO	MnO	Na <sub>2</sub> O	K <sub>2</sub> O
1.....	2.55	7.06	0.87	0.028	0.05	0.03	3.38	85.63	0.42	0.04	<0.01
2.....	2.59	7.10	.87	.028	.06	.02	3.36	85.64	.41	.04	<.01
3.....	2.49	7.06	.85	.030	.065	.03	3.36	85.63	.46	trace	.03
4.....	2.55	7.09	.78	.....	.04	.04	3.38	85.60	.44	.....	.....
5.....	2.54	7.09	<sup>a</sup> .88	.024	.07	.....	3.33	85.59	.45	.24	.08
6.....	2.50	6.98	<sup>a</sup> .92	.026	.06	.....	3.35	85.69	.42	.....	.....
7.....	2.62	7.08	.82	.02	.06	.03	<sup>b</sup> 3.22	85.72	.43	.05	.08
8.....	2.54	7.09	<sup>a</sup> .90	.022	.....	.03	3.35	85.88	.43	.....	.....
9.....	2.52	7.12	.83	.026	.047	.04	3.28	85.63	.41	.005	.006
Average.....	2.54	7.07	.84	.026	.057	.03	3.35	85.67	.43	<sup>c</sup> .075	<sup>d</sup> .049

<sup>a</sup> Includes either TiO<sub>2</sub> or P<sub>2</sub>O<sub>5</sub> and is omitted from average.  
<sup>b</sup> Omitted from average.

<sup>c</sup> Recommended value 0.04 percent.  
<sup>d</sup> Recommended value <0.01 percent.

\*LIST OF ANALYSTS

1. H. B. Knowles, Bureau of Standards.
2. M. O. Lamar, Norton Co., Worcester, Mass.
3. Frederick Wynkoop, Booth, Garrett & Blair, Philadelphia, Pa.
4. E. B. Read, American Refractories Institute, Mellon Institute, Pittsburgh, Pa.
5. Plymouth Meeting Laboratory, E. J. Lavino and Co., Plymouth Meeting, Pa.

6. H. H. Hartzell, Bald Eagle Mine Laboratory, Sierra Magnesite Co., Ltd., Newark, Calif.
7. R. H. H. Pierce, Harbison-Walker Refractories Co., Pittsburgh, Pa.
8. L. J. Trostel, General Refractories Co., Baltimore, Md.
9. A. Craig, Ledoux & Co., 155 Sixth Ave., New York, N.Y.

Washington, D.C.  
 July 10, 1933

LYMAN J. BRIGGS,  
 Director.

\*See attached sheet for revised values for Na<sub>2</sub>O, K<sub>2</sub>O, and Li<sub>2</sub>O. (3-1-55)

REVISED VALUES FOR ALKALIES IN NBS

STANDARD SAMPLES 76, 77, 78, 97, 98, 102, and 104

When these standards were issued originally, data on the alkalies were included at that time though recognized as somewhat incomplete. Later spectrographic examination indicated the presence of significant amounts of lithium in some of these materials. Recently, the alkali contents of these standards have been redetermined at the National Bureau of Standards by flame-photometric methods. New certificates of analysis will be prepared, but in the interim the following new tentative values are indicated for the alkalies in these standard samples:

<u>Standard</u>	<u>Na<sub>2</sub>O</u> <u>%</u>	<u>K<sub>2</sub>O</u> <u>%</u>	<u>Li<sub>2</sub>O</u> <u>%</u>
Refractory No. 76	0.15	1.54	0.11
Refractory No. 77	.06	-*	.35
Refractory No. 78	.06	-	.20
Clay 97	.07	-	.23
Clay 98	.26	-	.03
Silica Brick 102	.01 <sub>5</sub>	0.32	.001
Magnesite 104	.01 <sub>5</sub>	.01 <sub>5</sub>	.001

\*Dash indicates no changes.

Washington, D. C.  
March 1, 1955  
(Revised 9-1-55)