

UNITED STATES DEPARTMENT OF COMMERCE
WASHINGTON 25, D.C.

National Bureau of Standards
Certificate of Analyses

Standard Sample 172
Ferroboron

ANALYST	BORON	SILICON	CARBON	ALUMINUM
1.....	{ ^a 13.68 ^b 13.70 }	^c 3.57	0.238	{ ^d 0.050 ^e 0.055 }
2.....	^f 13.73	^g 3.72	.245	^e 0.046
3.....	^c 13.63	^c 3.66	.23	
4.....	^a 13.75	^c 3.71	.233	{ ^e 0.050 ^h 0.055 }
5.....	^a 13.57	^c 3.51	.222	^h 0.060
average.....	13.68	3.63	0.234	0.053

^a One-g sample fused with Na₂O₂. Melt dissolved in dilute HCl and an aliquot (=0.2 g) passed through a column of a strong acid type ion exchange resin. Eluate nearly neutralized, and refluxed to remove CO₂. Solution adjusted to pH 6.9, invert sugar or mannitol added, and solution titrated potentiometrically to pH 6.9 with 0.1N NaOH standardized on H₃BO₃. See method E31-59T, Am. Soc. Testing Materials.
^b Distillation-titration method.

^c Na₂O₂ fusion-H₂SO₄ dehydration. See ASTM method E31-59T.
^d Na₂O₂ fusion. Melt leached with water. Solution boiled to decompose peroxide. An aliquot of the supernatant liquid acidified. Iron and the like precipitated with cupferron. Cupferron, in the filtrate, destroyed with HNO₃ and HClO₄. Aluminum precipitated with NH₄OH, weighed as Al₂O₃, and corrected for P₂O₅ and Fe₂O₃.
^e As in footnote ^d to destruction of excess cupferron, and

aluminum then determined by aurintricarboxylic acid (Aluminon) photometric method. See ASTM method E31-59T.
^f Na₂CO₃-KNO₃ fusion. Melt dissolved in HCl. Iron, etc., precipitated with CaCO₃. Solution filtered. Boron titrated in the filtrate.
^g Na₂CO₃-KNO₃ fusion. HCl dehydration.
^h Eriochrome Cyanin-R photometric method.

List of Analysts

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The alloy for the preparation of this standard was furnished by the Molybdenum Corp. of America.

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A. V. ASTIN, *Director*