



Certificate of Analysis

Standard Reference Material 82b

Nickel-Chromium Cast Iron

ANALYST	C		Mn	P	S	Si	Cu	Ni	Cr	V	Mo	Ti
	Total	Graphitic	Persulfate-Arsenite	Photometric	Combustion Iodate titration	Perchloric acid dehydration	Photometric	Weighed as nickel dimethylglyoxime	FeSO ₄ -KMnO ₄ titration		Photometric	H ₂ O ₂ photometric
1.....	2.82	2.37	^a 0.745	^b 0.024	^c 0.006	^d 2.10	^e 0.038	^f 1.22	^g 0.336	^h 0.026	0.002	ⁱ 0.028
.....	^j 2.86	2.37	^k 0.750	^l 0.022	^m 0.008	2.12	ⁿ 0.036	1.22	^o 0.338	^{p,q} 0.024	.003	^r 0.025
.....	2.87	2.36	^k 0.74	{ ^r 0.026 ^s 1.027}	.007	^d 2.11	^s 0.035	1.22	.33	^t 0.031	.003	^u 0.027
4.....	2.85	2.39	.....	^l 0.026	.....	^v 2.08	^w 0.042	1.22	.33	.....	^x 0.002	.027
Average.....	2.85	2.37	0.745	0.025	0.007	2.10	0.038	1.22	0.333	0.027	0.002	0.027

^a Potentiometric titration.
^b Molybdenum-blue photometric method. See J. Res. NBS 26, 405 (1941) RP1386.
^c 1-g sample burned in oxygen at 1,425 °C and sulfur dioxide absorbed in starch-iodide solution. Iodine liberated from iodide by titration, during the combustion, with standard KIO₃ solution. Titer is based on 93 percent of the theoretical factor.
^d Double dehydration with intervening filtration.
^e Diethyldithiocarbamate photometric method. See J. Res. NBS 47, 380 (1951) RP2265.
^f Photometric method.
^g Persulfate oxidation, potentiometric titration with ferrous ammonium sulfate.

^h Vanadium separated from the bulk of the iron by hydrolytic precipitation with NaHCO₃, oxidized with HNO₃ and titrated potentiometrically with ferrous ammonium sulfate.
ⁱ Titanium separated from the bulk of the iron with cupferron and determined polarographically in a sodium acetate-EDTA supporting electrolyte.
^j Combustion-volumetric method.
^k Titrating solution standardized by the use of a standard iron or steel.
^l Alkali-molybdate method.
^m Combustion gases absorbed in NaOH-H₂O₂, and excess NaOH titrated with H₂SO₄.

ⁿ Neocuproine photometric method.
^o Persulfate oxidation, titration with FeSO₄-Ce(SO₄)₂.
^p Vanadium oxidized with HNO₃.
^q Vanadium separated by Na₂CO₃ fusion.
^r Molybdate-Mg₂P₂O₇.
^s Copper precipitated with Na₂S₂O₃ and determined by electrolysis.
^t Spectrographic method.
^u Vanadium separated by treatment with NaOH.
^v Sulfuric acid dehydration.
^w H₂S-CuS-CuO.
^x Alpha benzoinoxime gravimetric method.

List of Analysts

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W. Wayne Meinke, Chief
 Office of Standard Reference Materials