U. S. Department of Commerce
Maurice H. Stans
Secretary

National Bureau of Standards
A. V. Astin, Director

Certificate of Analysis

Standard Reference Material 3c
White Iron

ANALYST	C	Mn	P	S	Si	Cu	Ni	Cr	V	Mo
	Direct Combustion	Persulfate-arsenite	Photometric	Combustion-Titration	Perchloric Acid dehydration	Photometric	Photometric			Photometric
1	2.28	0.302 [a] .308	0.100[b]	0.103[c]	1.26[d]	0.055[e]	0.014	0.044[f]	0.006 [g] .008 [h]	0.002
2	2.28	.311	.100[b]	.096	1.27	.051[i]	----	.045[j]	----	----
3	2.29[k]	.311	.099[l]	.095 [m] .094 [n]	1.29	.054[o]	.010[p]	.047[f]	.005[g]	.002
4	2.30[q]	.30	----	.095	1.30	----	----	.043[r]	----	----
5	2.31[k]	.315	.097	.093	1.28	----	.010[p]	.050[s]	----	.01
6	2.31	.31	.104[l]	.096	1.25[d]	.051[t]	.012	.049[j]	.008[u]	<.002
Average	2.30	0.308	0.100	0.096	1.28	0.053	0.012	0.046	0.007	0.002

[a] Periodate photometric method.

[b] Molybdenum-blue photometric method. See J. Res. NBS 26, 405 (1941) RP 1386.

[c] 1-g sample burned in oxygen at 1,450 °C and sulfur dioxide absorbed in starch-iodide solution. Iodine liberated from iodide by titration, during the combustion, with standard KIO_3 solution.

[d] Double dehydration

[e] Atomic absorption method.

[f] Chromium separated from the bulk of the iron in a 10-g sample by hydrolytic precipitation with $NaHCO_3$, oxidized with persulfate and titrated potentiometrically with ferrous ammonium sulfate.

[g] Vanadium separated as in (f), oxidized with HNO_3 and titrated potentiometrically with ferrous ammonium sulfate.

[h] Neutron activation analysis.

[i] Diethyldithiocarbamate photometric method.

[j] Diphenylcarbazide photometric method.

[k] Volumetric method.

[l] Alkali-molybdate method.

[m] Sulfur gases absorbed in $NaOH$-H_2O_2 solution and excess NaOH titrated with H_2SO_4.

[n] Gravimetric method.

[o] Neocuproine photometric.

[p] Weighed as nickel dimethylglyoxime.

[q] Gasometric method.

[r] Persulfate oxidation, titration with $FeSO_4$-$Ce(SO_4)_2$.

[s] $FeSO_4$-$KMnO_4$ titration.

[t] Copper-ammonia Complex photometric method.

[u] H_2O_2 photometric method.

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