

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

National Bureau of Standards

Certificate of Analyses

Standard Sample 126B High-Nickel Steel

ANALYST	Ni Weighed as nicked dimethylglyoxime	C Direct combustion	Mn Persulfate- arsenite	Si Perchloric acid dehydration	Cu	Cr	Co Colorimetric Nitroso-R-salt	Mo Colorimetric	V
1.....	^a 35.99	0.083	0.387	^b 0.202	^c 0.083	^d 0.065	0.031	0.006	^e 0.001
2.....	{ ^f 35.97 ^g 36.00 }	.090	{ ^h 376 ⁱ 378 }	^b .203	^j .084	^k .068	^l .031		
3.....	{ ^m 35.98 ⁿ 35.99 }	.092	ⁱ .376	^b .201	^j .084	^o .063	.030		
4.....	^p 35.97	.087	^q .384	.201	^j .087	^d .063	.029		
5.....	35.96	.092	^q .378	.199	{ ^j .079 ^r .078 }	^s .065	.044		
6.....	^t 36.04	.088	ⁱ .381	{ ^u .198 ^v .197 }	^r .082	^o .069	.027		
Average.....	35.99	0.090	0.380	0.200	0.082	0.066	0.032		

^a 0.25-g sample and double precipitation. Precipitate dried at 155° C.

^b Double dehydration with intervening filtration.

^c Diethylthiocarbamate photometric method. See J. Research NBS 47, 380 (1951) RP2265.

^d Ether extraction on a 10-g sample. Chromium oxidized with persulfate and titrated potentiometrically with ferrous ammonium sulfate.

^e Vanadium separated as in (d), oxidized with HNO₃ and titrated potentiometrically with ferrous ammonium sulfate.

^f 0.2-g sample aliquoted from a 2-g sample.

^g Photometric titration with cyanide. See Ind. Eng. Chem. Anal. Ed. 10, 175 (1938).

^h ZnO-Bismuthate-FeSO₄-KMnO₄ method.

ⁱ Periodate photometric method.

^j H₂S-electrolysis method.

^k As in (d) except 5-g sample.

^l Ether-alpha-nitroso-beta-naphthol method. Weighed as Co₂O₃.

^m Single precipitation on a 0.5-g sample.

ⁿ Finished by electrolysis.

^o Diphenylcarbazide photometric method.

^p Single precipitation on a 0.2-g sample.

^q Titrating solution standardized with a standard steel.

^r Neo-cuproine photometric method.

^s Ether separation on 10-g sample, persulfate oxidation, FeSO₄-KMnO₄ titration.

^t 0.1-g sample aliquoted from a 1-g sample.

^u Double dehydration with H₂SO₄.

Analyst 2 reported 0.003 percent nitrogen.

List of Analysts

1. Ferrous Laboratory, National Bureau of Standards. J. I. Shultz in charge. Analysis by E. June Maienthal, J. R. Spann, R. E. McIntyre, E. J. Meros.
2. M. J. Noll, A. L. Sloan, J. O. Strauss, The Carpenter Steel Co., Reading, Pa.
3. A. D. Middleton and W. J. Moore, The International Nickel Co., Inc., Huntington Works, Huntington, W. Va.

4. T. L. Fluck, Driver-Harris Co., Harrison, N. J.
5. K. H. Storks, J. F. Jensen, Mary E. Campbell, F. W. Ryan, Bell Telephone Laboratories, Inc., Murray Hill Laboratory, Murray Hill, N. J.
6. J. Penkrot, R. Pristera, S. Oliverio, Materials Engineering Department, Chemical Laboratory, Westinghouse Electric Corp., East Pittsburgh, Pa.

The steel for the preparation of this standard sample was furnished by the Carpenter Steel Company.

WASHINGTON, D. C., August 20, 1957

A. V. ASTIN, *Director*.