

Certificate of Certified Reference Material

NCS HC93638 -- HC93642

Ferrosilicon

Issued in 2016

Approved by China National Analysis Center for Iron and Steel

(Beijing China)

This Certified Reference Materials is prepared in accordance with the ISO guides 30-35. The intended use for this CRM is for the quality control in ferrosilicon analysis, the evaluating methods of analysis and the calibration of analytical instruments.

Certified Values and Extended uncertainty (k=2) (%)

No.		C	Si	Mn	P	S	Cr
NCS HC 93638	Certified Value	0.90	65.74	0.182	0.025	0.037	0.099
	Uncertainty	0.03	0.13	0.005	0.002	0.002	0.003
NCS HC 93639	Certified Value	0.73	41.29	0.256	0.030	0.010	0.11
	Uncertainty	0.03	0.10	0.006	0.002	0.001	0.01
NCS HC 93640	Certified Value	1.12	63.21	0.15	0.022	0.055	0.088
	Uncertainty	0.04	0.13	0.02	0.002	0.004	0.004
NCS HC 93641	Certified Value	0.44	71.2	0.242	0.028	0.013	0.089
	Uncertainty	0.02	0.14	0.005	0.002	0.002	0.003
NCS HC 93642	Certified Value	0.56	73.39	0.216	0.032	0.013	0.084
	Uncertainty	0.02	0.2	0.006	0.002	0.002	0.003
No.		Al	Ca	Fe	Cu	Ni	Ti
NCS HC 93638	Certified Value	1.27	3.15	18.67	0.054	0.029	0.131
	Uncertainty	0.04	0.05	0.09	0.003	0.001	0.003
NCS HC 93639	Certified Value	2.40	0.28	52.26	0.132	0.056	0.209
	Uncertainty	0.03	0.02	0.08	0.003	0.002	0.004
NCS HC 93640	Certified Value	1.33	4.40	16.85	0.069	0.024	0.125
	Uncertainty	0.03	0.07	0.07	0.002	0.002	0.003
NCS HC 93641	Certified Value	1.21	1.26	22.07	0.033	0.035	0.137
	Uncertainty	0.05	0.03	0.08	0.002	0.002	0.005
NCS HC 93642	Certified Value	1.12	1.14	18.96	0.032	0.046	0.135
	Uncertainty	0.03	0.02	0.08	0.002	0.002	0.004

Note:

1. 8 independent laboratories take part in the analysis work.
2. The sample is powder with size less 0.080mm packed in glass bottle.
The minimum package is 50 grams.
The minimum weight for analysis is 0.1g.
3. The valid time of the sample is 10 years, although we reserve the right to make change as issue revisions.

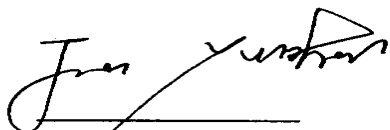
Analytical Methods

Element	Analytical method
C	The gasometric method; Infrared absorption method
S	Infrared absorption method, Combustion-titrimetric method
Si	Gravimetric method after dehydration with perchloric acid; Potassium silicofluoride titrimetric method
Mn	AAS; Potassium periodate photometric method; ICP-AES
P	Bismuth-phosphorus- molybdenum blue photometric method; ICP-AES
Cr	AAS; ICP-AES
Al	EDTA titrimetric method; ICP-AES; CuSO ₄ titrimetric method after fluoride replacement.
Ca	EDTA titrimetric method; ICP-AES;AAS
Fe	Potassium dichromate titrimetric method
Cu	AAS; ICP-AES
Ni	AAS; ICP-AES
Ti	Diantipyryl methane photometric method; ICP-AES

Statement:

This material is used only in labs and for analysis work, producer will be not responsible for any problem caused by misuse or not properly store.

Please check carefully the package, quantity and type of the material after receiving it. Related compensation is only limited in the certified materials, any other losses will be not included.



Jia Yunhai

Laboratory Director