Certificate of Certified Reference Material

NCS HC19817 -- HC19818

Vanadium Slag

Issued in 2017

Approved by China National Analysis Center for Iron and Steel

(Beijing China)

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

No.		TFe	SiO_2	Al_2O_3	CaO	MgO	MnO
NCS HC 19817	Certified Value	30.48	16.90	3.84	1.96	3.34	6.87
	uncertainty	0.15	0.11	0.05	0.03	0.11	0.03
NCS HC 19818	Certified Value	28.96	15.93	4.05	1.57	3.28	7.80
	uncertainty	0.14	0.13	0.08	0.03	0.07	0.10
No.		P	S	V_2O_5	TiO_2	Cr_2O_3	
NCS HC 19817	Certified Value	0.054	0.054	16.18	10.87	2.40	
	uncertainty	0.001	0.002	0.12	0.06	0.03	
NCS HC 19818	Certified Value	0.037	0.053	17.69	11.53	3.03	
	uncertainty	0.001	0.002	0.11	0.12	0.02	

Note:

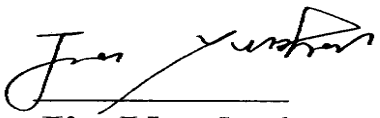
Extended Uncertainty: $U=ku_{CRM}$; $u_{CRM}=\sqrt{u_{char}^2+u_{bb}^2+u_{lts}^2+u_{sts}^2}$; $u_{char}=s/\sqrt{n}$

U_{CRM} combined uncertainty; U_{bb} between bottle uncertainty;
Ults long time stability uncertainty, neglectable;
Usts short time stability uncertainty, neglectable;
Uchar standard uncertainty of analysis;
s standard deviation;
n number of data;
k cover factor;
k=2 with confidence interval at 95%.

1.Each certified value is the mean of analytical results of 8 independent laboratories.
2.The sample should be stoved at 105°C for 1 hours before using and stored in drier.
3.The sample is powder with size less0.125mm packed in glass bottle.
The minimum package is 100 grams. The minimum weight for analysis is 0.25g.
4.The valid time of the sample is 10 years, although we reserve the right to make change as issue revisions.

Analytical Methods

Composition	Methods
SiO_2	Gravimetric method; ICP-AES
Al_2O_3	EDTA titrimetric method; ICP-AES
CaO	AAS; ICP; EDTA-titrimetric method
MgO	AAS; ICP; EDTA-titrimetric method
TFe	$SnCl_2$-$HgCl_2$-Potassium dichromate titrimetric method; $TiCl_3$- Potassium dichromate titrimetric method
S	Barium sulfate gravimetric method; Combustion-potassium iodate volumetric method Infrared absorption method; ICP-AES
P	Bismuth-phosphorus-molybdenum blue photometric method; ICP-AES The butyl acetate extraction molybdenum blue photometric method
TiO_2	Titrimetric method with ammonium ferric sulfate; ICP-AES
V_2O_5	Titrimetric method with ferrous sulfate; ICP-AES
MnO	The sodium arsenite-sodium nitrite titrimetric method; ICP-AES
Cr_2O_3	Titrimetric method; ICP-AES; Atomic absorption spectrophotometric method



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