Certificate of Certified Reference Material

NCS HS 11760c

Alloy Structure Steel

Issued in 2012

Approved by China National Analysis Center for Iron and Steel

(Beijing China)

Certified Values and Standard Deviation (%)

No.		C	Si	Mn	P	S	Cr	Ni	Cu
NCS HS	Certified Value	0.168	0.348	1.36	0.018	0.014	0.059	0.020	0.038
11760c	Standard Deviation	0.004	0.005	0.01	0.001	0.002	0.003	0.001	0.002
No.		V	Mo	Nb	Al(tot)	Ca*	N		
NCS HS	Certified Value	0.069	0.025	0.044	0.081	0.0003	0.011		
11760c	Standard Deviation	0.002	0.002	0.002	0.003		0.001		

Note: Value with * is for reference only.

1. Each certified value is the mean of 6 analytical results of independent labs.
2.The sample is cylinder bar. The size of sample is Φ37×40 mm.
3.The sample should be stored at dry place.

Analytical Methods

C: Combustion- infrared absorption method

Si: The perchloric acid dehydration-gravimetric method; ICP-AES method;
Silicon-molybdenum blue photometric method with ferrous reduction

Mn: Potassium periodate oxidation photometric method; ICP-AES method; AAS

P: Bismuth-phosphorus-molybdenum blue photometric method; ICP-AES method
The n-butyric alcohol-trichloromethane extraction photometric method;

S: Combustion-infrared absorption method

Cr: Ammonium persulfate oxidation titrimetric method; ICP-AES method

Ni: Dimethylglyoxime photometric method; ICP-AES method; AAS

Cu: Photometric method with bis-cyclohexanone oxalylbihydrazone; ICP-AES method;
The neocuprone-trichloromethane extraction photometric method; AAS

V: N-benzoyl phenylhydroxylamine extraction photometric method; ICP-AES method

Mo: ICP-AES method; Thiocyanate photometric method;

Nb: Sulphochlorophenol S photometric method; ICP-AES method

Al: ICP-AES; chrome azuol S photometric method;

Ca: ICP-AES method

N: Combustion thermal conduction method

Jia Yunhai
Laboratory Director