



Certificate of Certified Reference Material

NCS HC 41230

38CrMoAl

Alloy Structure Steel

Reissued in 2004

Approved by China National Analysis Center for Iron and Steel

(Beijing China)

Certified Values and Standard Uncertainty

(%)

No.		C	Si	Mn	P	S	Cr	Ni	N	Cu
NCS HC 41230	Certified Value	0.395	0.312	0.441	0.014	0.0028	1.53	0.185	(0.008)	0.067
	Standard Uncertainty	0.004	0.006	0.005	0.001	0.0005	0.01	0.003		0.002
		V	Mo	Al	Ti	Sn	As	Sb	Co	W
NCS HC 41230	Certified Value	(0.002)	0.178	0.933	(0.0048)	0.010	(0.006)	0.0014	0.011	0.0078
	Standard Uncertainty		0.005	0.006		0.001		0.0001	0.001	0.0005

Note: Value in () is for reference only.

1. Each certified value is the mean of analytical results of 7 independent laboratories.
2. The sample is chips with size 0.25 to 1.19mm packed in glass bottle.
The minimum package is 100 grams. The minimum weight for analysis is: C,S: 0.5g, P: 0.1g, others is 0.2g
3. The sample should be stored at dry place.
4. The valid time of the sample is 15 years, although we reserve the right to make change as issue revisions.

Analytical Method

Element	Analytical method
C	Combustion-infrared absorption method; Combustion-gas volumetric method
Si	Gravimetric method after dehydration with perchloric acid; Molybdenum blue photometric method.
Mn	The sodium arsenite-sodium nitrite titrimetric method; Potassium periodate oxidation photometric method
P	The butyl acetate extraction molybdenum blue photometric method; Ammonium phosphomolybdate titrimetric method; Gravimetric method.
S	The aluminum oxide chromatographic separation-barium sulfate gravimetric method; Combustion-infrared absorption method; Ion selected electrode titrimetric method after distillation.
Cr	Ammonium peroxosulfate oxidation titrimetric method
Ni	The dimethylglyoxime photometric method; Atomic absorption spectrometry
Cu	The neocuprone-trichloromethane extraction photometric method; AAS method
Mo	The thiocyanate photometric method ;The α -benzoinoxime gravimetric method
Al	Chromazurol S photometric method; Fluoride replacement-EDTA titrimetric method; AAS
V	N-benzoyl phenylhydroxylamine extraction photometric method; Permanganate oxidation ferrous titrimetric method
Sn	Phenylflurone photometric method after extraction with iodide; AAS
As	The butyl acetate extraction photometric method; AAS; Gravimetric method.
Sb	Photometric method with malachite green with benzene extraction; AAS
Co	5-Cl-PADAB photometric method; AAS
N	Distillation separation neutralisation titrimetric method
W	Chlorpromazine hydrochloride-sodium thiocyanate-trichloromethane extraction photometric method Tetraphenylarsonium chloride-thiocyanate-chloroform extraction photometric method
Ti	The diantipyrylmethane photometric method; The chromotropic acid photometric method



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