

Certificate of Certified Reference Material

NCS HS 39701-1 — NCS HS 39701-6

Carbon Steel

Reissued in 2014

Approved by China National Analysis Center for Iron and Steel

(Beijing China)

Certified Values and Standard Deviation										
No.		Chemical Composition (Weight Percent)								
		C	Si	Mn	P	S	Cr	Ni	Cu	Al
NCS HS	Certified Value	0.108	0.029	1.15	0.0038	0.070	0.379	0.252	0.276	0.073
39701-1	Standard Deviation	0.005	0.003	0.01	0.0002	0.002	0.007	0.006	0.006	0.005
NCS HS	Certified Value	0.172	0.103	1.07	0.014	0.012	0.241	0.210	0.14	/
39701-2	Standard Deviation	0.007	0.003	0.02	0.001	0.002	0.002	0.005	0.01	
NCS HS	Certified Value	0.29	0.156	0.62	0.032	0.026	0.153	0.181	0.193	/
39701-3	Standard Deviation	0.02	0.007	0.01	0.001	0.001	0.004	0.005	0.006	
NCS HS	Certified Value	0.30	0.247	0.86	0.023	0.040	0.092	0.065	0.097	/
39701-4	Standard Deviation	0.01	0.007	0.02	0.001	0.001	0.002	0.002	0.003	
NCS HS	Certified Value	0.44	0.46	0.41	0.039	0.040	0.275	0.062	0.325	0.40
39701-5	Standard Deviation	0.01	0.02	0.01	0.001	0.003	0.006	0.002	0.005	0.01
NCS HS	Certified Value	0.58	0.374	0.163	0.054	0.0033	0.34	0.343	0.38	0.463
39701-6	Standard Deviation	0.02	0.007	0.005	0.001	0.0002	0.01	0.007	0.01	0.007

Note:

- 1.Each certified value is the mean of analytical results of 5 independent laboratories.
- 2.The sample is cylinder bar with a \varnothing 33×35 mm and packed in wooden box.
- 3.The sample should be stored at dry place.

Analytical Methods

C: Gas volumetric method; Infrared absorption method.

S: Infrared absorption method;The combustion-potassium iodate volumetric method

Si: Gravimetric method after dehydration with perchloric acid;
The oxalic acid-ferrous sulfate silicon-molubdenum blue photometric method

Mn: The sodium arsenite-sodium nitrite volumetric method;
Potassium periodate oxidation photometric method;
Ammonium persulfate oxidation photometric method;
Atomic absorption spectrophotometry

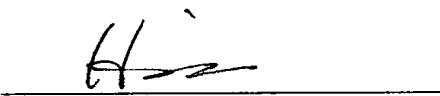
P: Butyl acetate extraction- phosphorus molybdate blue photometric method;
Molybdovanadophosphate sepectrophotometry;
The sodium fluoride-stannous chloride photometric method

Cr: Diphenylcarbazide direct photometric method;
Sodium carbonate separation diphenylcarbazide photometric method;
Ammonium persulfate oxidation photometric method

Ni: Dimethylglyoxime photometric method;
Dimethylglyoxime- trichloromethane extraction photometric method;
Atomic absorption spectrophotometry

Cu: BCO photometric method; Atomic absorption spectrophotometry;
The neocuprone-trichloromethane extraction photometric method

Al: Chromeazurol S photometric method; Cupferron separation-chromezurol S photometric method



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