

Certificate of Certified Reference Material

NCS DC 35001 — NCS DC 35002

Tin Concentrate

Reissued in 2013

Approved by China National Analysis Center for Iron and Steel

(Beijing China)

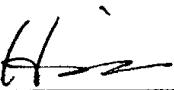
Certified Values and Uncertainty

No.		Sn	Pb	Fe	As	Sb	Bi	Zn	(%)
NCS DC 35001	Certified Value	45.80	2.89	21.33	0.574	0.024	0.034	0.264	
	Standard Deviation	0.05	0.03	0.06	0.006	0.003	0.002	0.004	
NCS DC 35002	Certified Value	62.49	1.62	9.53	0.306	0.016	0.020	0.120	
	Standard Deviation	0.06	0.01	0.03	0.004	0.002	0.002	0.004	
		S	Ag*	Cu	SiO ₂	WO ₃			
NCS DC 35001	Certified Value	0.183	25.5						
	Standard Deviation	0.010	1.2						
NCS DC 35002	Certified Value	0.090		0.043	0.930	0.182			
	Standard Deviation	0.005		0.001	0.026	0.007			

- Note:
1. *The unit of Ag is g/ton. Each certified value is the mean of analytical results of 10 independent laboratories.
 2. The sample should be stored at dry place.
 3. The minimum package is 100 grams.

Analytical Methods

- Sn: Iodine titrimetric method
 Fe: Potassium dichromate titrimetric method; Cerium salt titrimetric method
 Pb: Polarographic method; Atomic absorption spectrometric method; Complex titrimetric method
 As: Hypophosphite-reduction iodometry; KBrO₃ titrimetric method; Iodine titrimetric method after distillation; Arsenic-antimony molybdenum blue photometric method
 Sb: Photometric method with malachite green with methylbenzene extraction; Atomic absorption spectrometry
 Bi: Photometric thiourea method; Atomic absorption spectrometric method;
 Dithiodiantipyrylmethan photometric method
 Zn: Atomic absorption spectrometric method; Polarographic method
 S: The combustion-potassium iodate volumetric method; Infrared absorption method
 Cu: Photometric method with bis-cyclohexanone oxalylbifhydrazone; Polarographic method;
 The neocuprone-trichloromethane extraction photometric method
 Ag: The wet-fire assay method; Atomic absorption spectrometric method; Dithizone photometric method
 SiO₂: Molybdenum blue photometric method; Gravimetric method
 WO₃: Thiocyanate photometric method


Professor Wang Haizhou, Chief
China National Analysis Center for Iron and Steel