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 iodimetry; $KBrO_3$ 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 oxalylbihydrazone; Polarographic method; The neocuprone-trichloromethane extraction photometric method

Ag: The wet-fire assay method; Atomic absorption spectrometric method; Dithizone photometric method

SiO_2: Molybdenum blue photometric method; Gravimetric method

WO_3: Thiocyanate photometric method

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