

GEOSTATS PTY LTD

Mining Industry Consultants
Reference Material Manufacture and Sales

Certified Geochem Base Metal Reference Material Product Code

GBM311-10

Certified Control Values



GBM311-10

Geostats Pty Ltd, Certified Geochem Base Metal Reference Material, Product Code:

Element	Grade	Standard Deviation	Num of Analyses	Confidence Interval
Nickel (ppm)	31	7	73	+/- 1.6
Copper (ppm)	17334	694	83	+/- 152.4
Zinc (ppm)	841	80	83	+/- 17.5
Lead (ppm)	505	33	78	+/- 7.6
Arsenic (ppm)	40	4	57	+/- 1
Cobalt (ppm)	65	8	69	+/- 1.9
Silver (ppm)	3.8	0.5	79	+/- 0.11

CRM Details

<u>Control Statistic Details</u> Control statistics were produced from results accumulated in the April-2011 round robin. The number of results used to certify each analyte is shown in the table above.	<u>Neutron Activation Analysis Results (ppm, unless otherwise noted)</u>		<u>Major Elements by Fusion / XRF (%)</u>	
	<u>Material Description</u> This material is described as a Copper Sulphide ore.	Antimony	8.86	Fe
<u>Colour Designation (ISCC-NBS, SP440)</u> This material is medium light gray in colour.	Arsenic	40.6	SiO ₂	57.5
<u>Usage</u> This product is for use in the mining industry as a reference material for monitoring and testing the accuracy of laboratory assaying.	Barium	261	Al ₂ O ₃	12.86
<u>Preparation and Packaging</u> All CRMs are dried in an oven for a minimum of 12 hours at 110°C. The dry material is then pulverised to better than 75 micron (nominal mean of 45 micron) using an air classifier. The material is then homogenised and stored in a sealed, stable container ready for final packaging. Materials are statistically sampled from stores, then packaged into either heat sealed, air tight, plastic pulp packets or screw top sealed plastic containers ready for distribution. All packaging has been chosen to ensure minimal contamination from outside sources during shipment, use and storage.	Bromine	<0.369	TiO ₂	1.139
<u>Assay Testwork</u> All standards are tested thoroughly in the Geostats bi-annual laboratory survey. This involves assaying by multiple laboratories from around the world. Results are compiled into a comprehensive report detailing statistics for each standard. Assay distributions are checked and processed statistically, producing monitoring statistics for these standards. Materials are tested regularly to ensure stability and homogeneity.	Cadmium	82	MnO	0.11
<u>Stability</u> This product remains stable in its original packaging, away from direct sunlight.	Caesium	2.33	CaO	6.12
<u>Material Safety</u> This product is not hazardous and non-toxic.	Calcium (%)	nr	P	0.062
	Cerium	41.1	S	1.95
	Chromium	83.9	MgO	3.04
	Cobalt	74.2	K ₂ O	1.85
	Europium	0.874	Na ₂ O	2.885
	Gold (ppb)	1860	LOI1000	1.67
	Hafnium	3.84		
	Iridium (ppb)	<20		
	Iron (%)	6.95		
	Lanthanum	20		
	Lutetium	nr		
	Mercury	nr		
	Molybdenum	23		
	Neodymium	nr		
	Nickel	27.7		
	Potassium (%)	nr		
	Rubidium	86.1		
	Samarium	4.61		
	Scandium	19.1		
	Selenium	6.41		
	Silver	4		
	Sodium (%)	1.98		
	Strontium	nr		
	Tantalum	1.36		
	Tellurium	<5		
	Terbium	0.809		
	Thorium	11.9		
	Tin	<100		
	Tungsten	<2.65		
	Uranium	7.34		
	Ytterbium	<1		
	Zinc	850		
	Zirconium	<400		

20 Hines Road, O'Connor, Western Australia 6163

Phone : +61 8 9314 2566, Fax : +61 8 9314 3699

e-mail : pjh@geostats.com.au, srr@geostats.com.au

Website <http://www.geostats.com.au>