

# GEOSTATS PTY LTD

Mining Industry Consultants  
Reference Material Manufacture and Sales

Certified Geochem Base Metal Reference Material Product Code

## GBM311-4

Certified Control Values



GBM311-4

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

Element	Grade	Standard Deviation	Num of Analyses	Confidence Interval
Nickel (ppm)	233	17	233	+/- 2.2
Copper (ppm)	6199	216	278	+/- 25.5
Zinc (ppm)	12022	484	243	+/- 61.3
Lead (ppm)	2730	120	261	+/- 14.7
Arsenic (ppm)	241	18	225	+/- 2.4
Cobalt (ppm)	86	6	233	+/- 0.8
Silver (ppm)	15.1	1.0	270	+/- 0.12

### CRM Details

<u>Control Statistic Details</u> Control statistics were produced from results accumulated in the April-2011, October-2011 & April-2012 round robins. 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 Gold ore.	Antimony	37.475	Fe
<u>Colour Designation (ISCC-NBS, SP440)</u> This material is pale yellowish brown in colour.	Arsenic	253.5	SiO <sub>2</sub>	57.11
<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	180.5	Al <sub>2</sub> O <sub>3</sub>	9.495
<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	0.892	TiO <sub>2</sub>	0.753
<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	41.85	MnO	0.115
<u>Stability</u> This product remains stable in its original packaging, away from direct sunlight.	Caesium	4.118	CaO	3.41
<u>Material Safety</u> This product is not hazardous and non-toxic.	Calcium (%)	nr	P	0.049
	Cerium	27.6	S	2.81
	Chromium	215.25	MgO	2.12
	Cobalt	95.2	K <sub>2</sub> O	1.155
	Europium	0.9	Na <sub>2</sub> O	1.236
	Gold (ppb)	10692.5	LOI1000	4.555
	Hafnium	4.028		
	Iridium (ppb)	<10	Neutron Activation Analyses and Fusion / XRF Analyses are single results and are indicative only. These are provided for matrix identification purposes.	
	Iron (%)	10.7	'nr': Not Reported	
	Lanthanum	13.8		
	Lutetium	0.295		
	Mercury	nr		
	Molybdenum	12.525		
	Neodymium	nr		
	Nickel	234		
	Potassium (%)	nr		
	Rubidium	100.125		
	Samarium	2.918		
	Scandium	13.725		
	Selenium	<5		
	Silver	16.25		
	Sodium (%)	0.843		
	Strontium	nr		
	Tantalum	1.36		
	Tellurium	<5		
	Terbium	0.498		
	Thorium	7.673		
	Tin	<100		
	Tungsten	7.808		
	Uranium	2.573		
	Ytterbium	1.54		
	Zinc	12225		
	Zirconium	<200		

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