

GEOSTATS PTY LTD

Mining Industry Consultants
Reference Material Manufacture and Sales

Certified Geochem Base Metal Reference Material Product Code

GBM311-1

Certified Control Values



GBM311-1

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

Element	Grade	Standard Deviation	Num of Analyses	Confidence Interval
Nickel (ppm)	214	13	69	+/- 3.2
Copper (ppm)	1233	49	91	+/- 10.3
Zinc (ppm)	629	37	81	+/- 8.3
Lead (ppm)	152	11	82	+/- 2.5
Arsenic (ppm)	395	29	71	+/- 7
Cobalt (ppm)	34	2	64	+/- 0.6
Silver (ppm)	6.0	0.7	88	+/- 0.16

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 Gold ore.	Antimony	13.8	Fe
<u>Colour Designation (ISCC-NBS, SP440)</u> This material is light brownish gray in colour.	Arsenic	390	SiO ₂	59.41
<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	139	Al ₂ O ₃	12.21
<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	1.2	TiO ₂	0.666
<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	<5	MnO	0.12
<u>Stability</u> This product remains stable in its original packaging, away from direct sunlight.	Caesium	11	CaO	4.05
<u>Material Safety</u> This product is not hazardous and non-toxic.	Calcium (%)	nr	P	0.045
	Cerium	22.9	S	1.32
	Chromium	146	MgO	1.83
	Cobalt	38.2	K ₂ O	1.61
	Europium	<1	Na ₂ O	0.849
	Gold (ppb)	5470	LOI1000	6.79
	Hafnium	2.51		
	Iridium (ppb)	<20		
	Iron (%)	7.33		
	Lanthanum	10.4		
	Lutetium	nr		
	Mercury	nr		
	Molybdenum	8.81		
	Neodymium	nr		
	Nickel	204		
	Potassium (%)	nr		
	Rubidium	200		
	Samarium	2.63		
	Scandium	17.6		
	Selenium	<5		
	Silver	5		
	Sodium (%)	0.645		
	Strontium	nr		
	Tantalum	0.926		
	Tellurium	<5		
	Terbium	0.422		
	Thorium	3.92		
	Tin	<100		
	Tungsten	11.2		
	Uranium	1.49		
	Ytterbium	<1		
	Zinc	670		
	Zirconium	<400		

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