

# GEOSTATS PTY LTD

Mining Industry Consultants  
Reference Material Manufacture and Sales

Certified Geochem Base Metal Reference Material Product Code

## GBM312-5

Certified Control Values



GBM312-5

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

Element	Grade	Standard Deviation	Num of Analyses	Confidence Interval
Nickel (ppm)	114	10	87	+/- 2.2
Copper (ppm)	8239	323	109	+/- 61.5
Zinc (ppm)	398	32	99	+/- 6.4
Lead (ppm)	75	8	90	+/- 1.7
Arsenic (ppm)	17	3	67	+/- 0.7
Cobalt (ppm)	34	7	91	+/- 1.4
Silver (ppm)	5.0	0.5	100	+/- 0.1

### CRM Details

<u>Control Statistic Details</u> Control statistics were produced from results accumulated in the April-2012 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 Cu / Gold Sulphide ore.	Antimony	8.5	Fe
<u>Colour Designation (ISCC-NBS, SP440)</u> This material is light gray in colour.	Arsenic	18	SiO <sub>2</sub>	59.37
<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	430	Al <sub>2</sub> O <sub>3</sub>	14.07
<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	0.7	TiO <sub>2</sub>	1.064
<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	<10	MnO	0.11
<u>Stability</u> This product remains stable in its original packaging, away from direct sunlight.	Caesium	2.6	CaO	5.58
<u>Material Safety</u> This product is not hazardous and non-toxic.	Calcium (%)	nr	P	0.054
	Cerium	40	S	1.03
	Chromium	100	MgO	3.08
	Cobalt	41.6	K <sub>2</sub> O	2.09
	Europium	1.2	Na <sub>2</sub> O	3.4
	Gold (ppb)	1200	LOI1000	0.94
	Hafnium	4.4		
	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 (%)	6.2	'nr': Not Reported	
	Lanthanum	24		
	Lutetium	0.4		
	Mercury	nr		
	Molybdenum	36		
	Neodymium	nr		
	Nickel	110		
	Potassium (%)	nr		
	Rubidium	100		
	Samarium	4.4		
	Scandium	19.9		
	Selenium	<5		
	Silver	4		
	Sodium (%)	2.47		
	Strontium	nr		
	Tantalum	1.1		
	Tellurium	<10		
	Terbium	0.8		
	Thorium	13.6		
	Tin	<100		
	Tungsten	35		
	Uranium	7.5		
	Ytterbium	2.66		
	Zinc	415		
	Zirconium	<200		

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