

GEOSTATS PTY LTD

Mining Industry Consultants
Reference Material Manufacture and Sales

Certified Geochem Base Metal Reference Material Product Code

GBM311-3

Certified Control Values



GBM311-3

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

Element	Grade	Standard Deviation	Num of Analyses	Confidence Interval
Nickel (ppm)	642	29	68	+/- 7
Copper (ppm)	10089	400	87	+/- 85.8
Zinc (ppm)	14291	697	77	+/- 159.2
Lead (ppm)	3522	203	83	+/- 44.7
Arsenic (ppm)	359	27	69	+/- 6.5
Cobalt (ppm)	122	8	67	+/- 2
Silver (ppm)	20.4	1.6	89	+/- 0.33

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	37.4	Fe
<u>Colour Designation (ISCC-NBS, SP440)</u> This material is moderate yellowish brown in colour.	Arsenic	380	SiO ₂	45.69
<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	282	Al ₂ O ₃	11.25
<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	0.716	TiO ₂	0.816
<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	48	MnO	0.11
<u>Stability</u> This product remains stable in its original packaging, away from direct sunlight.	Caesium	7.41	CaO	3.17
<u>Material Safety</u> This product is not hazardous and non-toxic.	Calcium (%)	nr	P	0.051
	Cerium	36.7	S	4.37
	Chromium	483	MgO	2.53
	Cobalt	133	K ₂ O	1.45
	Europium	0.831	Na ₂ O	1.483
	Gold (ppb)	5200	LOI1000	7.38
	Hafnium	4.79		
	Iridium (ppb)	<20	Neutron Activation Analyses and Fusion / XRF Analyses are single results and are indicative only. These are provided for matrix identification purposes.	
	Iron (%)	14.1	'nr': Not Reported	
	Lanthanum	20.2		
	Lutetium	nr		
	Mercury	nr		
	Molybdenum	20		
	Neodymium	nr		
	Nickel	655		
	Potassium (%)	nr		
	Rubidium	146		
	Samarium	3.58		
	Scandium	12.8		
	Selenium	6.26		
	Silver	20		
	Sodium (%)	0.95		
	Strontium	nr		
	Tantalum	1.19		
	Tellurium	<5		
	Terbium	0.293		
	Thorium	13		
	Tin	<100		
	Tungsten	18.9		
	Uranium	3.31		
	Ytterbium	<1		
	Zinc	14700		
	Zirconium	<400		

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