

GEOSTATS PTY LTD

Mining Industry Consultants
Reference Material Manufacture and Sales

Certified Geochem Base Metal Reference Material Product Code

GBM319-5



Certified Control Values

Total Digest

Element	Grade	Standard Deviation	Num of Analyses	Confidence Interval
Nickel (ppm)	443	22	61	+/- 5.7
Copper (ppm)	4574	107	64	+/- 27
Zinc (ppm)	3833	142	65	+/- 35.4
Lead (ppm)	4022	161	60	+/- 41.9
Arsenic (ppm)	805	38	58	+/- 10.2
Cobalt (ppm)	539	29	64	+/- 7.2
Silver (ppm)	7.4	0.8	63	+/- 0.2

Partial Digest

Element	Grade	Standard Deviation	Num of Analyses	Confidence Interval
Nickel (ppm)	437	24	58	+/- 6.4
Copper (ppm)	4602	165	79	+/- 37.1
Zinc (ppm)	3874	174	67	+/- 42.8
Lead (ppm)	4074	204	64	+/- 51.3
Arsenic (ppm)	802	46	62	+/- 11.7
Cobalt (ppm)	540	37	59	+/- 9.7
Silver (ppm)	7.4	0.6	69	+/- 0.15

CRM Details

<u>Control Statistic Details</u>	<u>Neutron Activation Analysis Results (ppm, unless otherwise noted)</u>		<u>Major Elements by Fusion / XRF (%)</u>	
	Control statistics were produced from results accumulated in the April-2019 round robin. The number of results used to certify each analyte is shown in the table above.	Antimony	369	Fe
<u>Material Description</u> This material is described as a Low grade copper ore.	Arsenic	812	SiO ₂	60.74
	Barium	220	Al ₂ O ₃	13.5
<u>Colour Designation (ISCC-NBS, SP440)</u> This material is light gray in colour.	Bromine	<2	TiO ₂	1.08
	Cadmium	23	MnO	0.11
<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.	Caesium	<2	CaO	5.62
	Calcium (%)	nr	P	0.054
<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.	Cerium	32	S	0.65
	Chromium	108	MgO	3.21
<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.	Cobalt	565	K ₂ O	1.92
	Europium	1.4	Na ₂ O	3.13
<u>Stability</u> This product remains stable in its original packaging, away from direct sunlight.	Gold (ppb)	2760	LOH1000	0.86
	Hafnium	<5	Neutron Activation Analyses and Fusion / XRF Analyses are single results and are indicative only. These are provided for matrix identification purposes.	
<u>Material Safety</u> This product is not hazardous and non-toxic.	Iridium (ppb)	<50	'nr': Not Reported	
	Iron (%)	5.3		
	Lanthanum	18		
	Lutetium	0.4		
	Mercury	nr		
	Molybdenum	168		
	Neodymium	nr		
	Nickel	460		
	Potassium (%)	nr		
	Rubidium	82		
	Samarium	4.4		
	Scandium	18.7		
	Selenium	10		
	Silver	7		
	Sodium (%)	2.32		
	Strontium	nr		
	Tantalum	<2		
	Tellurium	<20		
	Terbium	<1		
	Thorium	11.1		
	Tin	<200		
	Tungsten	<5		
	Uranium	7		
	Ytterbium	2.6		
	Zinc	3860		
	Zirconium	<500		

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