

GEOSTATS PTY LTD

Mining Industry Consultants
Reference Material Manufacture and Sales

Certified Geochem Base Metal Reference Material Product Code

GBM319-3



Certified Control Values

Total Digest

Element	Grade	Standard Deviation	Num of Analyses	Confidence Interval
Nickel (ppm)	25	2	53	+/- 0.7
Copper (ppm)	4055	130	71	+/- 30.9
Zinc (ppm)	4067	179	68	+/- 43.6
Lead (ppm)	1116	64	65	+/- 16
Arsenic (ppm)	887	55	54	+/- 15.1
Cobalt (ppm)	211	10	64	+/- 2.5
Silver (ppm)	7.4	0.4	61	+/- 0.11

Partial Digest

Element	Grade	Standard Deviation	Num of Analyses	Confidence Interval
Nickel (ppm)	10	1	54	+/- 0.4
Copper (ppm)	4079	145	79	+/- 32.6
Zinc (ppm)	4115	180	67	+/- 44.3
Lead (ppm)	1133	62	64	+/- 15.5
Arsenic (ppm)	902	47	58	+/- 12.5
Cobalt (ppm)	204	16	59	+/- 4.3
Silver (ppm)	7.5	0.5	72	+/- 0.13

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	1.2	Fe
<u>Material Description</u> This material is described as a Low grade copper ore.	Arsenic	882	SiO ₂	60.25
	Barium	315	Al ₂ O ₃	13.81
<u>Colour Designation (ISCC-NBS, SP440)</u> This material is light gray in colour.	Bromine	<2	TiO ₂	1.09
	Cadmium	<10	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	5.83
	Calcium (%)	nr	P	0.052
<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	34	S	0.45
	Chromium	104	MgO	3.35
<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	220	K ₂ O	1.86
	Europium	1.2	Na ₂ O	3.24
<u>Stability</u> This product remains stable in its original packaging, away from direct sunlight.	Gold (ppb)	2230	LOH000	1.46
	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 (%)	5.2		
	Lanthanum	17		
	Lutetium	0.4		
	Mercury	nr		
	Molybdenum	<10		
	Neodymium	nr		
	Nickel	30		
	Potassium (%)	nr		
	Rubidium	73		
	Samarium	4.1		
	Scandium	19.3		
	Selenium	<10		
	Silver	7		
	Sodium (%)	2.3		
	Strontium	nr		
	Tantalum	<2		
	Tellurium	<20		
	Terbium	1		
	Thorium	10.8		
	Tin	<200		
	Tungsten	<5		
	Uranium	6		
	Ytterbium	2.5		
	Zinc	4100		
	Zirconium	<500		

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