

# GEOSTATS PTY LTD

Mining Industry Consultants  
Reference Material Manufacture and Sales

Certified Geochem Base Metal Reference Material Product Code

## GBM320-4



### Certified Control Values

#### Total Digest

Element	Grade	Standard Deviation	Num of Analyses	Confidence Interval
Nickel (ppm)	743	39	60	+/- 10.3
Copper (ppm)	3238	116	61	+/- 29.9
Zinc (ppm)	90	10	59	+/- 2.5
Lead (ppm)	9	2	46	+/- 0.6
Arsenic (ppm)	32	2	51	+/- 0.6
Cobalt (ppm)	49	3	60	+/- 0.7
Silver (ppm)	0.5	0.1	34	+/- 0.03

#### Partial Digest

Element	Grade	Standard Deviation	Num of Analyses	Confidence Interval
Nickel (ppm)	668	64	52	+/- 18
Copper (ppm)	3182	126	73	+/- 29.7
Zinc (ppm)	42	5	42	+/- 1.6
Lead (ppm)	8	1	45	+/- 0.4
Arsenic (ppm)	29	2	52	+/- 0.7
Cobalt (ppm)	46	3	49	+/- 1
Silver (ppm)	0.4	0.1	33	+/- 0.03

### CRM Details

Control Statistic Details	Neutron Activation Analysis Results (ppm, unless otherwise noted)		Major Elements by Fusion / XRF (%)	
	Control statistics were produced from results accumulated in the April-2020 round robin. The number of results used to certify each analyte is shown in the table above.	Antimony	10.8	Fe
<b>Material Description</b> This material is described as an Acurite and Malachite, with Carbonate, Quartz, Talc and Fuchsite ex Turkey.	Arsenic	33	SiO <sub>2</sub>	49.58
	<b>Colour Designation (ISCC-NBS, SP440)</b> This material is grayish orange in colour.	Barium	1510	Al <sub>2</sub> O <sub>3</sub>
<b>Usage</b> This product is for use in the mining industry as a reference material for monitoring and testing the accuracy of laboratory assaying.		Bromine	<2	TiO <sub>2</sub>
	<b>Preparation and Packaging</b> 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.	Cadmium	<10	MnO
<b>Assay Testwork</b> 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.		Caesium	<2	CaO
	<b>Stability</b> This product remains stable in its original packaging, away from direct sunlight.	Calcium (%)	nr	P
<b>Material Safety</b> This product is not hazardous and non-toxic.		Cerium	<5	S
	<b>Neutron Activation Analysis Results (ppm, unless otherwise noted)</b>	Chromium	2030	MgO
<b>Major Elements by Fusion / XRF (%)</b>		Cobalt	54	K <sub>2</sub> O
	Antimony	Europium	<0.5	Na <sub>2</sub> O
Arsenic		Gold (ppb)	22	LOH1000
	Barium	Hafnium	<5	Neutron Activation Analyses and Fusion / XRF Analyses are single results and are indicative only. These are provided for matrix identification purposes.
Bromine		Iridium (ppb)	<50	'nr': Not Reported
	Cadmium	Iron (%)	4.5	
Caesium		Lanthanum	<2	
	Calcium (%)	Lutetium	<0.2	
Cerium		Mercury	nr	
	Chromium	Molybdenum	<10	
Cobalt		Neodymium	nr	
	Europium	Nickel	740	
Gold (ppb)		Potassium (%)	nr	
	Hafnium	Rubidium	<20	
Iridium (ppb)		Samarium	0.2	
	Iron (%)	Scandium	3.6	
Lanthanum		Selenium	<10	
	Lutetium	Silver	<5	
Mercury		Sodium (%)	0.047	
	Molybdenum	Strontium	nr	
Neodymium		Tantalum	<2	
	Nickel	Tellurium	<20	
Potassium (%)		Terbium	<1	
	Rubidium	Thorium	<0.5	
Samarium		Tin	<200	
	Scandium	Tungsten	<5	
Selenium		Uranium	<1	
	Silver	Ytterbium	<0.5	
Sodium (%)		Zinc	<200	
	Strontium	Zirconium	<500	

20 Hines Road, O'Connor, Western Australia 6163

Phone: +61 8 9314 2566 | Email: info@geostats.com.au

Website: www.geostats.com.au

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