

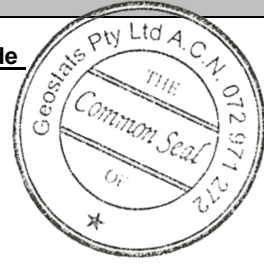
GEOSTATS PTY LTD

Mining Industry Consultants
Reference Material Manufacture and Sales

Certified Ore Grade Base Metal Reference Material Product Code

GBM319-13

Certified Control Values



GBM319-13

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

Element	Grade	Standard Deviation	Num of Analyses	Confidence Interval
Nickel (ppm)	75	15	83	+/- 3
Copper (ppm)	15964	568	124	+/- 101
Zinc (ppm)	454	39	107	+/- 7
Lead (ppm)	66	11	72	+/- 3
Cobalt (ppm)	nr	nr	nr	nr
Silver (ppm)	7.4	0.7	107	+/- 0.14
Sulphur (%)	2.18	0.09	89	+/- 0.02

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.			Fe
<u>Material Description</u> This material is described as a Copper ore.	Antimony	4.9	SiO ₂	49.15
<u>Colour Designation (ISCC-NBS, SP440)</u> This material is olive black in colour.	Arsenic	54.6	Al ₂ O ₃	13.89
<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	120	TiO ₂	1.73
<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	<2	MnO	0.15
<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	CaO	8.9
<u>Stability</u> This product remains stable in its original packaging, away from direct sunlight.	Caesium	<2	P	0.083
<u>Material Safety</u> This product is not hazardous and non-toxic.	Calcium (%)	nr	S	2.18
	Cerium	28	MgO	4.96
	Chromium	177	K ₂ O	0.39
	Cobalt	80	Na ₂ O	2.8
	Europium	1.8	LOI1000	1.3
	Gold (ppb)	7790		
	Hafnium	<5	Neutron Activation Analyses and Fusion / XRF Analyses are single results and are indicative only. These are provided for matrix identification purposes.	
	Iridium (ppb)	<50	'nr': Not Reported	
	Iron (%)	9.6		
	Lanthanum	12		
	Lutetium	0.4		
	Mercury	nr		
	Molybdenum	203		
	Neodymium	nr		
	Nickel	100		
	Potassium (%)	nr		
	Rubidium	25		
	Samarium	4.9		
	Scandium	29.7		
	Selenium	<10		
	Silver	8		
	Sodium (%)	2.07		
	Strontium	nr		
	Tantalum	<2		
	Tellurium	<20		
	Terbium	1		
	Thorium	2		
	Tin	<200		
	Tungsten	<5		
	Uranium	<1		
	Ytterbium	3		
	Zinc	440		
	Zirconium	<500		

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