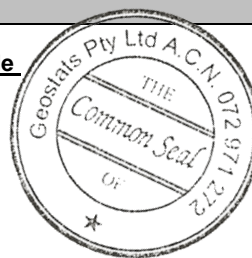


GEOSTATS PTY LTD

Mining Industry Consultants
Reference Material Manufacture and Sales

Certified Ore Grade Base Metal Reference Material Product Code

GBM317-12



Certified Control Values

Element	Grade	Standard Deviation	Num of Analyses	Confidence Interval
Nickel (ppm)	21	6	63	+/- 2
Copper (ppm)	24309	793	124	+/- 141
Zinc (ppm)	5049	217	103	+/- 43
Lead (ppm)	544	52	101	+/- 10
Cobalt (ppm)	nr	nr	nr	nr
Silver (ppm)	16.3	1.3	101	+/- 0.27
Sulphur (%)	18.72	0.46	86	+/- 0.1

CRM Details

Control Statistic Details Control statistics were produced from results accumulated in the April-2017 round robin. The number of results used to certify each analyte is shown in the table above.	Neutron Activation Analysis Results (ppm, unless otherwise noted)		Major Elements by Fusion / XRF (%)	
	Material Description This material is described as a Cu / Zn Sulphide Tailings and Feed Composite ex Western Australia.	Antimony	11.1	Fe
Colour Designation (ISCC-NBS, SP440) This material is dark gray in colour.	Arsenic	226	SiO ₂	31.15
Usage This product is for use in the mining industry as a reference material for monitoring and testing the accuracy of laboratory assaying.	Barium	<50	Al ₂ O ₃	5.24
Preparation and Packaging 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	TiO ₂	0.182
Assay Testwork 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	16	MnO	0.099
Stability This product remains stable in its original packaging, away from direct sunlight.	Caesium	<2	CaO	1.28
Material Safety This product is not hazardous and non-toxic.	Calcium (%)	nr	P	0.053
	Cerium	13	S	18.8
	Chromium	<20	MgO	3.27
	Cobalt	494	K ₂ O	0.136
	Europium	1.6	Na ₂ O	0.12
	Gold (ppb)	439	LOI1000	13.81
	Hafnium	<5		
	Iridium (ppb)	<50	Neutron Activation Analyses and Fusion / XRF Analyses are single results and are indicative only. These are provided for matrix identification purposes.	
	Iron (%)	29.3	'nr': Not Reported	
	Lanthanum	12		
	Lutetium	0.4		
	Mercury	nr		
	Molybdenum	<10		
	Neodymium	nr		
	Nickel	<20		
	Potassium (%)	nr		
	Rubidium	<20		
	Samarium	3		
	Scandium	7.5		
	Selenium	31		
	Silver	16		
	Sodium (%)	0.1		
	Strontium	nr		
	Tantalum	<2		
	Tellurium	<20		
	Terbium	<1		
	Thorium	1.9		
	Tin	<200		
	Tungsten	5		
	Uranium	<1		
	Ytterbium	0.5		
	Zinc	5450		
	Zirconium	<500		

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