

# GEOSTATS PTY LTD

Mining Industry Consultants  
Reference Material Manufacture and Sales

Certified Geochem Base Metal Reference Material Product Code

## GBM399-4

Certified Control Values



GBM399-4

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

Element	Grade	Standard Deviation	Num of Analyses	Confidence Interval
Nickel (ppm)	54	10	123	+/- 1.8
Copper (ppm)	989	109	159	+/- 17.1
Zinc (ppm)	57	7	134	+/- 1.3
Lead (ppm)	97	11	135	+/- 2
Arsenic (ppm)	15	7	88	+/- 1.4
Cobalt (ppm)	15	4	109	+/- 0.7
Silver (ppm)	0.8	0.5	63	+/- 0.1

### CRM Details

<u>Control Statistic Details</u> Control statistics were produced from results accumulated in the October-1998 & April-1999 round robins. The number of results used to certify each analyte is shown in the table above.	<u>Neutron Activation Analysis Results (ppm, unless otherwise noted)</u>		<u>Major Elements by Fusion / XRF (%)</u>	
	<u>Material Description</u> This material is described as an Oxide ore with laterite / kaolin.	Antimony	3.1	Fe
<u>Colour Designation (ISCC-NBS, SP440)</u> This material is grayish orange in colour.	Arsenic	14.7	SiO <sub>2</sub>	nr
<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	<200	Al <sub>2</sub> O <sub>3</sub>	nr
<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	1.775	TiO <sub>2</sub>	nr
<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	nr	MnO	nr
<u>Stability</u> This product remains stable in its original packaging, away from direct sunlight.	Caesium	2.665	CaO	nr
<u>Material Safety</u> This product is not hazardous and non-toxic.	Calcium (%)	<1	P	nr
	Cerium	50.3	S	nr
	Chromium	140.5	MgO	nr
	Cobalt	14	K <sub>2</sub> O	nr
	Europium	1.065	Na <sub>2</sub> O	nr
	Gold (ppb)	763	LOI1000	nr
	Hafnium	4.485		
	Iridium (ppb)	<20	Neutron Activation Analyses and Fusion / XRF Analyses are single results and are indicative only. These are provided for matrix identification purposes.	
	Iron (%)	3.765	'nr': Not Reported	
	Lanthanum	22.6		
	Lutetium	<0.3		
	Mercury	nr		
	Molybdenum	<10		
	Neodymium	nr		
	Nickel	nr		
	Potassium (%)	<0.5		
	Rubidium	52.25		
	Samarium	4.22		
	Scandium	14.5		
	Selenium	<5		
	Silver	<5		
	Sodium (%)	0.161		
	Strontium	nr		
	Tantalum	<2		
	Tellurium	<5		
	Terbium	nr		
	Thorium	8.06		
	Tin	nr		
	Tungsten	10.455		
	Uranium	2.45		
	Ytterbium	1.345		
	Zinc	<100		
	Zirconium	<500		

20 Hines Road, O'Connor, Western Australia 6163

Phone : +61 8 9314 2566, Fax : +61 8 9314 3699

e-mail : pjh@geostats.com.au, srr@geostats.com.au

Website <http://www.geostats.com.au>