

GEOSTATS PTY LTD

Mining Industry Consultants
Reference Material Manufacture and Sales

Certified Geochem Base Metal Reference Material Product Code

GBM310-5

Certified Control Values



GBM310-5

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

Element	Grade	Standard Deviation	Num of Analyses	Confidence Interval
Nickel (ppm)	3661	221	159	+/- 34.7
Copper (ppm)	336	19	183	+/- 2.7
Zinc (ppm)	485	25	172	+/- 3.7
Lead (ppm)	139	12	163	+/- 1.9
Arsenic (ppm)	13	4	126	+/- 0.6
Cobalt (ppm)	249	20	168	+/- 3.1
Silver (ppm)	0.5	0.2	92	+/- 0.04

CRM Details

<u>Control Statistic Details</u> Control statistics were produced from results accumulated in the April-2010 & October-2012 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 a Nickel Laterite.	Antimony	1.085	Fe
<u>Colour Designation (ISCC-NBS, SP440)</u> This material is grayish orange in colour.	Arsenic	14	SiO ₂	53.86
<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	145	Al ₂ O ₃	8.23
<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	2.65	TiO ₂	0.343
<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	<5	MnO	0.17
<u>Stability</u> This product remains stable in its original packaging, away from direct sunlight.	Caesium	<0.5	CaO	1.41
<u>Material Safety</u> This product is not hazardous and non-toxic.	Calcium (%)	nr	P	0.02
	Cerium	34.95	S	0.344
	Chromium	4795	MgO	4.34
	Cobalt	274	K ₂ O	0.325
	Europium	0.646	Na ₂ O	0.656
	Gold (ppb)	83	LOI1000	7.45
	Hafnium	2.03		
	Iridium (ppb)	<5	Neutron Activation Analyses and Fusion / XRF Analyses are single results and are indicative only. These are provided for matrix identification purposes.	
	Iron (%)	14.2	'nr': Not Reported	
	Lanthanum	10.75		
	Lutetium	0.218		
	Mercury	nr		
	Molybdenum	2		
	Neodymium	nr		
	Nickel	3835		
	Potassium (%)	nr		
	Rubidium	10		
	Samarium	2.465		
	Scandium	19.5		
	Selenium	<1.8		
	Silver	1		
	Sodium (%)	0.459		
	Strontium	nr		
	Tantalum	0.23		
	Tellurium	<4.5		
	Terbium	<0.41		
	Thorium	1.355		
	Tin	<100		
	Tungsten	4		
	Uranium	0.95		
	Ytterbium	1.35		
	Zinc	496.5		
	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>