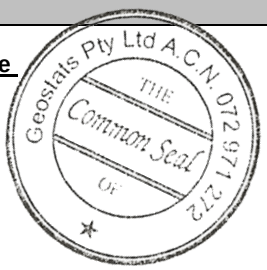
GEOSTATS PTY LTD

Mining Industry Consultants
Reference Material Manufacture and Sales

Certified Ore Grade Base Metal Reference Material Product Code

GBM323-12



Certified Control Values

Element	Grade	Standard Deviation	Num of Analyses	Confidence Interval
Nickel (ppm)	10	2	58	+/- 1
Copper (ppm)	7868	262	105	+/- 51
Zinc (ppm)	421	22	90	+/- 5
Lead (ppm)	580	61	97	+/- 12
Cobalt (ppm)	nr	nr	nr	nr
Silver (ppm)	6.9	0.6	96	+/- 0.12
Sulphur (%)	6.44	0.18	84	+/- 0.04

CRM Details

Control Statistic Details

Control statistics were produced from results accumulated in the April-2023 round robin. The number of results used to certify each analyte is shown in the table above.

Material Description

This material is described as a Massive silica from Peru.

Colour Designation (ISCC-NBS, SP440)

This material is medium gray in colour.

Usage

This product is for use in the mining industry as a reference material for monitoring and testing the accuracy of laboratory assaying.

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.

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.

Stability

This product remains stable in its original packaging, away from direct sunlight.

Material Safety

This product is not hazardous and non-toxic.

Neutron Activation Analysis Results (ppm, unless otherwise noted)	
Antimony	85.3
Arsenic	2150
Barium	<100
Bromine	<2
Cadmium	13
Caesium	<2
Calcium (%)	nr
Cerium	10
Chromium	17
Cobalt	18
Europium	<0.5
Gold (ppb)	345
Hafnium	<5
Iridium (ppb)	<50
Iron (%)	5.8
Lanthanum	5
Lutetium	<0.2
Mercury	nr
Molybdenum	39
Neodymium	nr
Nickel	<100
Potassium (%)	nr
Rubidium	<20
Samarium	0.5
Scandium	1.5
Selenium	<10
Silver	6
Sodium (%)	0.019
Strontium	nr
Tantalum	<2
Tellurium	<20
Terbium	<1
Thorium	1.6
Tin	<200
Tungsten	16
Uranium	2
Ytterbium	<0.5
Zinc	410
Zirconium	<500

Major Elements by Fusion / XRF (%)	
Fe	5.61
SiO_2	82.96
Al_2O_3	2.01
TiO_2	0.649
MnO	0.03
CaO	0.02
P	0.022
S	6.52
MgO	0.06
K_2O	0.12
Na_2O	0.04
LOI1000	4.84

Neutron Activation Analyses and Fusion / XRF Analyses are single results and are indicative only. These are provided for matrix identification purposes.

'nr': Not Reported

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