GEOSTATS PTY LTD

Mining Industry Consultants
Reference Material Manufacture and Sales

Certified Geochem Base Metal Reference Material Product Code

GBM901-7

Geostats Pty Ltd A.C.N. 072 971 272 THE Common Seal OF

Certified Control Values

Element	Grade	Standard Deviation	Num of Analyses	Confidence Interval
Nickel (ppm)	292	38	58	+/- 10.1
Copper (ppm)	442368	29887	68	+/- 7288
Zinc (ppm)	350	31	57	+/- 8.3
Lead (ppm)	4859	387	67	+/- 95.1
Arsenic (ppm)	626	53	53	+/- 14.7
Cobalt (ppm)	823	81	58	+/- 21.5
Silver (ppm)	61.9	7.2	67	+/- 1.8

CRM Details

Control Statistic Details

Control statistics were produced from results accumulated in the October-2001 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 Copper Ore / Copper Concentrate.

Colour Designation (ISCC-NBS, SP440)

This material is dark 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	<0.5
Arsenic	650
Barium	357
Bromine	<1
Cadmium	nr
Caesium	<2
Calcium (%)	<1
Cerium	153
Chromium	68.1
Cobalt	819
Europium	<0.5
Gold (ppb)	179000
Hafnium	6.08
Iridium (ppb)	<20
Iron (%)	15.3
Lanthanum	95
Lutetium	0.81
Mercury	nr
Molybdenum	<40
Neodymium	nr
Nickel	nr
Potassium (%)	<0.5
Rubidium	<30
Samarium	9.85
Scandium	3.29
Selenium	<20
Silver	56.9
Sodium (%)	0.18
Strontium	nr
Tantalum	<2
Tellurium	15
Terbium	nr
Thorium	4.78
Tin	nr
Tungsten	81.2
Uranium	<6
Ytterbium	6.34
Zinc	252
Zirconium	<500

Major Elements by Fusion / XRF (%)	
Fe	nr
SiO_2	nr
Al_2O_3	nr
TiO_2	nr
MnO	nr
CaO	nr
P	nr
S	nr
MgO	nr
K_2O	nr
Na_2O	nr
LOI1000	nr

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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