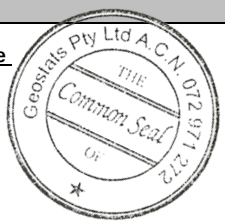
GEOSTATS PTY LTD

Mining Industry Consultants
Reference Material Manufacture and Sales

Certified Geochem Base Metal Reference Material Product Code

GBM916-9



Certified Control Values

Total Digest

Element	Grade	Standard Deviation	Num of Analyses	Confidence Interval
Nickel (ppm)	26	3	64	+/- 0.8
Copper (ppm)	5257	204	71	+/- 48.5
Zinc (ppm)	29716	1641	57	+/- 439.4
Lead (ppm)	2710	158	69	+/- 38.2
Arsenic (ppm)	233	18	55	+/- 4.8
Cobalt (ppm)	44	2	61	+/- 0.6
Silver (ppm)	40.6	2.0	67	+/- 0.5

Partial Digest

Element	Grade	Standard Deviation	Num of Analyses	Confidence Interval
Nickel (ppm)	22	3	63	+/- 0.7
Copper (ppm)	5344	343	88	+/- 73.2
Zinc (ppm)	30340	1822	56	+/- 492.4
Lead (ppm)	2778	178	72	+/- 42.2
Arsenic (ppm)	231	12	60	+/- 3.2
Cobalt (ppm)	41	3	59	+/- 0.7
Silver (ppm)	40.3	1.7	76	+/- 0.4

CRM Details

Control Statistic Details

Control statistics were produced from results accumulated in the October-2016 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 Zn / Cu / Pb / Ag Sulphide Composite.

Colour Designation (ISCC-NBS, SP440)

This material is medium light 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	36.7
Arsenic	250
Barium	1770
Bromine	<2
Cadmium	86.1
Caesium	<1
Calcium (%)	nr
Cerium	138
Chromium	25.8
Cobalt	45
Europium	1.34
Gold (ppb)	268
Hafnium	6
Iridium (ppb)	<50
Iron (%)	7.1
Lanthanum	78.9
Lutetium	0.35
Mercury	nr
Molybdenum	<10
Neodymium	nr
Nickel	24
Potassium (%)	nr
Rubidium	91
Samarium	8.5
Scandium	12.7
Selenium	<10
Silver	44
Sodium (%)	1.76
Strontium	nr
Tantalum	<2
Tellurium	<20
Terbium	<1
Thorium	23.3
Tin	<200
Tungsten	<5
Uranium	3
Ytterbium	1.88
Zinc	30000
Zirconium	<500

Major Elements by Fusion / XRF (%)	
Fe	7.105
SiO_2	54.67
Al_2O_3	12.74
TiO_2	0.78
MnO	0.1
CaO	3.86
P	0.105
S	3.9
MgO	2.46
K_2O	3.31
Na_2O	2.41
LOI1000	3.16

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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