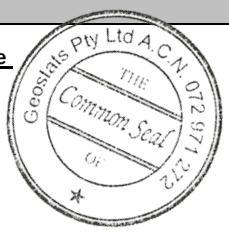
GEOSTATS PTY LTD

Mining Industry Consultants
Reference Material Manufacture and Sales

Certified Geochem Base Metal Reference Material Product Code

GBM920-7



Certified Control Values

Total Digest

Element	Grade	Standard Deviation	Num of Analyses	Confidence Interval
Nickel (ppm)	79	5	53	+/- 1.4
Copper (ppm)	29848	925	52	+/- 260.1
Zinc (ppm)	41046	1188	46	+/- 356.8
Lead (ppm)	30808	916	47	+/- 271.7
Arsenic (ppm)	586	24	51	+/- 6.9
Cobalt (ppm)	89	6	60	+/- 1.6
Silver (ppm)	133.9	8.9	48	+/- 2.61

Partial Digest

Element	Grade	Standard Deviation	Num of Analyses	Confidence Interval
Nickel (ppm)	69	6	56	+/- 1.6
Copper (ppm)	30009	742	57	+/- 198.7
Zinc (ppm)	40609	1507	42	+/- 475.3
Lead (ppm)	30928	1423	46	+/- 427.4
Arsenic (ppm)	588	24	55	+/- 6.6
Cobalt (ppm)	73	8	58	+/- 2
Silver (ppm)	133.6	9.8	61	+/- 2.52

CRM Details

Control Statistic Details

Control statistics were produced from results accumulated in the October-2020 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 Cu Pb Zn Ore.

Colour Designation (ISCC-NBS, SP440)

This material is medium 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	332
Arsenic	628
Barium	246
Bromine	<2
Cadmium	96
Caesium	2
Calcium (%)	nr
Cerium	30
Chromium	123
Cobalt	96
Europium	0.8
Gold (ppb)	8590
Hafnium	<5
Iridium (ppb)	<50
Iron (%)	9.4
Lanthanum	18
Lutetium	0.3
Mercury	nr
Molybdenum	58
Neodymium	nr
Nickel	87
Potassium (%)	nr
Rubidium	61
Samarium	3.6
Scandium	16.9
Selenium	22.3
Silver	140
Sodium (%)	1.77
Strontium	nr
Tantalum	<2
Tellurium	<20
Terbium	<1
Thorium	7
Tin	<200
Tungsten	13
Uranium	3
Ytterbium	2
Zinc	42500
Zirconium	<500

Major Elements by Fusion / XRF (%)	
Fe	9.07
SiO_2	44.71
Al_2O_3	11.09
TiO_2	1.01
MnO	0.15
CaO	5.14
P	0.053
S	6.89
MgO	3.04
K_2O	1.22
Na_2O	2.54
LOI1000	5.43

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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