



United States Geological Survey

Certificate of Analysis

Granite, G-2

Material was collected from the Sullivan quarry near Near Bradford, Rhode Island, which is approximately three miles east of the site where G-1 was collected. The material was collected by Felix Chayes, Geophysical Laboratory, Carnegie Institution.

Element concentrations were determined by cooperating laboratories using a variety of analytical methods. Certificate values are based primarily on international data compilations (Gladney, et al. 1992, Govindaraju, K., 1989, Govindaraju, 1994). USGS reports (Flanagan, F.J., 1969, Flanagan, 1976) provide background information on this material.

Recommended values

Element	Wt %	±	Oxide	Wt %	±
Al ₂ O ₃	15.39	0.30	MgO	0.75	0.03
CaO	1.96	0.08	MnO	0.03	0.01
Fe ₂ O ₃	1.07	0.14	Na ₂ O	4.08	0.13
FeO	1.46	0.08	P ₂ O ₅	0.14	0.01
Fe ₂ O ₃ T	2.66	0.17	SiO ₂	69.14	0.3
K ₂ O	4.48	0.13	TiO ₂	0.48	0.03

Element	µg/g	±	Element	µg/g	±	Element	µg/g	±
Ba	1880	23	Ga	23	2	Sm	7.2	0.7
Be	2.5	0.4	Hf	7.9	0.7	Sr	478	2
Ce	160	10	La	89	8	Th	25	2
Co	4.6	0.7	Li	34	4	V	36	4
Cs	1.34	0.16	Nd	55	6	Y	11	2
Dy	2.4	0.3	Pb	30	4	Yb	0.8	0.2
Eu	1.4	0.12	Rb	170	3	Zn	86	8
F	1280	80	Sc	3.5	0.4	Zr	309	35

Information values

Element	µg/g	Element	µg/g	Element	µg/g
As	0.25	Gd	4.3	Se	0.07
B	2.4	Ho	0.4	Ta	0.5
Bi	0.04	Lu	0.11	Tb	0.48
Cl	70	Nb	12	Tm	0.18
Cu	11	Pr	18	W	0.2
Er	0.92	S _{tot}	100		

Bibliography

Flanagan, F.J., 1969, U.S. Geological Survey silicate rock standards, *Geochimica et Cosmochimica Acta*, v. 31, p. 289-308

Flanagan, F.J., 1976, Descriptions and Analysis of Eight New USGS Rock Standards, Geological Survey Professional Paper 840, 192 p.

Gladney, E.S., Jones, E.A., Nickell, E.J., and Roelandts, I., 1992, 1988 Compilation of elemental concentration data for USGS AGV-1, GSP-1 and G-2, *Geostandards Newsletter*, v. 16, p. 111-300.

Govindaraju, K., 1989, 1989 Compilation of working values and sample description of 272 geostandards, *Geostandards Newsletter*, v. 13, p. 1-113

Govindaraju, K., 1994, 1994 Compilation of working values and description for 383 geostandards, *Geostandards Newsletter*, v. 18, p. 1-158

Notes

Unless otherwise indicated total element concentrations are reported for material on an as-received basis, i.e., no drying.

Drying instructions

Certificate values are based on analyses performed on an as-received basis, i.e., drying is not required.

Ordering Information

USGS reference materials (RMs) may be obtained directly from Dr. Stephen A. Wilson at the address or numbers listed below. The price for each bottle of RM is \$65.00 (U.S.) **except** DGPM-1 which is \$150.00 (U.S.). This cost includes all shipping and handling charges using normal mail delivery. Urgent requests for RMs should be initiated by FAX or e-mail. If required, overnight delivery is available with these charges added to the final bill.

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