



United States Geological Survey Certificate of Analysis

Icelandic Basalt, BIR-1

Material for this reference material was collected from one of the interglacial lava flows often referred to as the Reykjavik dolerites, by Karl Gronwold of the Nordic Volcanological Institute at Reykjavik (Flanagan, 1984). The Reykjavik dolerites are a group of lava flows most likely from shield volcanos dating from the youngest interglacial periods. The rock is as a coarse-grained olivine tholeiite.

Recommended concentrations for elements and oxides are reported when results from USGS interlaboratory studies (Flanagan and Gottfried, 1980) using independent methods of analysis are in statistical agreement. Supplemental information derived from international data compilations (Abbey, 1983, Govindaraju, 1994) is also provided.

Information concentrations are given when results are based on analyses obtained using a single technique or when data from different procedures are not in statistical agreement.

Recommended values

Oxide	Wt %	±	Oxide	Wt %	±
SiO ₂	47.96	0.19	Na ₂ O	1.82	0.045
Al ₂ O ₃	15.5	0.15	K ₂ O	0.030	0.003
CaO	13.3	0.12	MnO	0.175	0.003
MgO	9.70	0.079	P ₂ O ₅	0.021	0.001
FeO	8.34	0.10	TiO ₂	0.96	0.01
Fe ₂ O ₃	2.06	0.10	Fe ₂ O ₃ T	11.3	0.12

Element	µg/g	±	Element	µg/g	±	Element	µg/g	±
Cu	125	4	Hf	0.6	0.08	Sr	110	2
Dy	4	1	Nd	2.5	0.7	V	310	11
Ce	1.9	0.4	Ni	170	6	Y	16	1
Co	52	2	La	0.63	0.07	Yb	1.7	0.1
Cr	370	8	Li	3.6	0.2	Zn	70	9
Eu	0.55	0.05	Sc	44	1	Zr	18	1
Gd	1.8	0.4						

Information values

Element	µg/g	Element	µg/g
As	0.44	Ga	16
B	0.33	Lu	0.26
Ba	7	Nb	0.6
Be	0.58	Pb	3
Cl	26	Sb	0.58
F	44	Sm	1.1

