



United States Geological Survey Certificate of Analysis

Syenite STM-1

A sample of peralkaline nepheline syenite was collected from a sill that underlies Table Mountain which is approximately 60 km WNW of Eugene, Oregon. The rock sample was light to medium gray and had a glassy luster. The material was holocrystalline and very fine to fine grained, having a very pronounced trachytic texture (Flanagan, 1976).

Element concentrations were determined by cooperating laboratories using a variety of analytical methods. Certificate values are based primarily on international data compilations (Abbey, 1983; Gladney and Roelandts, 1988; Govindaraju, 1994). Initial USGS studies (Flanagan, 1976) provide background information on this material.

Recommended values

Oxide	Wt %	±	Oxide	Wt %	±
SiO ₂	59.6	0.49	CaO	1.09	0.06
Al ₂ O ₃	18.4	0.23	MgO	0.10	0.02
Fe ₂ O ₃	2.87	0.02	Na ₂ O	8.94	0.20
FeO	2.09	0.03	K ₂ O	4.28	0.07
Fe ₂ O ₃ T	5.22	0.1	P ₂ O ₅	0.16	0.01
			TiO ₂	0.14	0.01

Element	µg/g	±	Element	µg/g	±	Element	µg/g	±
Ba	560	60	Gd	9.5	0.8	Sm	13	1
Be	9.6	0.6	Hf	28	2	Sr	700	30
Ce	260	18	La	150	6	Ta	19	1.2
Cl	460	40	Mn	1700	120	Tb	1.6	0.2
Cs	1.5	0.1	Nb	270	12	Th	31	3
Dy	8.1	0.5	Nd	79	7	U	9.1	0.1
Er	4.2	0.4	Pb	18	1.8	Y	46	5
Eu	3.6	0.3	Rb	118	6	Yb	4.4	0.4
F	910	50	Sb	1.7	0.2	Zn	235	22
Ga	35	5	Sc	0.61	0.07	Zr	1210	120

Element	µg/g	Element	µg/g	Element	µg/g
Ag	0.08	Co	0.9	Ni	3
As	4.6	Cr	4.3	S _{tot}	43
B	6.4	Cu	4.6	Sn	6.8
Bi	0.13	Li	32	Tm	0.7
Cd	0.27	Mo	5.2	V	8.7

Denver, Colorado
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Branch of Geochemistry

Glossary

$\text{Fe}_2\text{O}_3\text{T}$	Total iron expressed as Fe_2O_3
S_{tot}	Total concentration of sulfur
Wt %	Percent of total element concentration
$\mu\text{g/g}$	Total element concentration expressed as micrograms of element per gram of solid sample
\pm	One standard deviation

Notes

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

Ordering Information

This reference material is no longer available.

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