



# 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 <sub>2</sub>	59.6	0.49	CaO	1.09	0.06
Al <sub>2</sub> O <sub>3</sub>	18.4	0.23	MgO	0.10	0.02
Fe <sub>2</sub> O <sub>3</sub>	2.87	0.02	Na <sub>2</sub> O	8.94	0.20
FeO	2.09	0.03	K <sub>2</sub> O	4.28	0.07
Fe <sub>2</sub> O <sub>3</sub> T	5.22	0.1	P <sub>2</sub> O <sub>5</sub>	0.16	0.01
			TiO <sub>2</sub>	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 <sub>tot</sub>	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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## Glossary

$\text{Fe}_2\text{O}_3\text{T}$	Total iron expressed as $\text{Fe}_2\text{O}_3$
$\text{S}_{\text{tot}}$	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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URL: [http://minerals.cr.usgs.gov/geo\\_chem\\_stand/syenitestm1.pdf](http://minerals.cr.usgs.gov/geo_chem_stand/syenitestm1.pdf)

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