Bazirite $BaZrSi_3O_9$

Crystal Data: Hexagonal. *Point Group:* $\bar{6}m2$. Crystals rarely entirely euhedral, prismatic with partially developed pyramidal terminations, more commonly anhedral to subhedral, < 1 mm. Also as clusters of crystals.

Physical Properties: *Cleavage:* Pyramidal, probably $\{10\bar{1}4\}$; poor on $\{10\bar{1}0\}$; strong parting $\|$ {0001}. Hardness = n.d. D(meas.) = n.d. D(calc.) = 3.82 Moderately strong pale bluish fluorescence under SW UV; strong blue cathodoluminescence.

Optical Properties: Transparent to translucent. *Color:* Colorless.
Optical Class: Uniaxial (+). $\omega = 1.675$–1.681 $\epsilon = 1.685$–1.688

Cell Data: *Space Group:* $P\bar{6}c2$. a = 6.737–6.769 $c = 9.997$–10.020 Z = 2

X-ray Powder Pattern: Rockall Island, Scotland.
3.80 (100), 2.800 (100), 5.85 (35), 3.38 (35), 2.93 (30), 2.012 (30), 2.213 (25)

Chemistry:

	(1)	(2)	(3)
SiO_2	39.71	39.59	39.46
TiO_2	0.17	0.51	
ZrO_2	26.38	26.12	26.98
SnO_2	0.06	0.11	
BaO	33.69	34.12	33.56
Total	100.01	100.45	100.00

(1–2) Rockall Island, Scotland; by electron microprobe. (3) $BaZrSi_3O_9$.

Occurrence: A late-stage interstitial mineral in aegirine-riebeckite granite (Rockall Island, Scotland); in granular celsian-bearing rocks near contacts with granite (Big Creek, California, USA).

Association: Elpidite, aegirine, albite, cristobalite, leucophosphite, monazite, quartz, apatite, eudialyte, magnetite, pyrochlore, xenotime, barite, titanite (Rockall Island, Scotland); taramellite, celsian, diopside, actinolite (Big Creek, California, USA).

Distribution: On Apex Ridge, Rockall Island, in the North Atlantic Ocean, 294 km west of St. Kilda Island, Outer Hebrides, Scotland. At the Esquire No. 8 claim, Big Creek, Fresno Co., California, USA.

Name: For BArium and ZIRconium in the composition.

Type Material: The Natural History Museum, London, England, MI 36445.

References: (1) Young, B.R., J.R. Hawkes, R.J. Merriman, and M.T. Styles (1978) Bazirite, $BaZrSi_3O_9$, a new mineral from Rockall Island, Inverness-shire, Scotland. Mineral. Mag., 42, 35–40. (2) (1979) Amer. Mineral., 64, 241 (abs. ref. 1). (3) Alfors, J.T. and A. Pabst (1984) Titanian taramellites in western North America. Amer. Mineral., 69, 358–373. (4) Hawthorne, F.C. (1987) The crystal chemistry of the benitoite group minerals and structural relations in (Si_3O_9) ring structures. Neues Jahrb. Mineral., Monatsh., 16–30.