

Symbols for rock-forming minerals¹

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There is at present a disturbing lack of uniformity in the choice of symbols for rock-forming minerals. For example, in Volume 65 (1980) of *The American Mineralogist*, all of BT, BIO, and Biot are used for biotite, and all of Q, QTZ, Qtz, Qz and qtz are used for quartz. At least 10 other minerals are referred to by two or more symbols, and in one instance, two different symbols are used for a mineral in a single paper.

In Table 1 is a list of mineral names, taken mainly from Deer *et al.* (1962), and for each name a proposed symbol. In preparing the list of symbols, consideration was given to mineral names in the different languages used in scientific writing. With few exceptions, the names for a mineral in the languages English (E), French (F), German (G), Russian (R), and Spanish (S) have similar phonetics, for example:

E	biotite
F	biotite
G	biotit
R	БИОТИТ
S	biotita

and a suitable choice for a symbol is Bt. International uniformity would depend on the willingness of Russian scientists to adopt Latin letters for mineral symbols, as Perchuk (1973) has already done. Another example is:

E	garnet
F	grenat
G	granat
R	гранат
S	granate

and the symbol Grt would seem preferable to Gar.

An example of a mineral that has very different names in different languages is:

E	kyanite
F	disthène
G	cyanit
R	кианит
S	cianita

Here, because Russian and English writing outweighs that of other languages, agreement might be found in the symbol Ky.

Most of the symbols that were selected have been used previously by numerous authors, *e.g.*, Bowen (1928), Ramberg (1952), Perchuk (1973), Winkler (1973), Mueller and Saxena (1977), Barton and Skinner (1979) and the various authors of the *Reviews in Mineralogy* (*e.g.*, Prewitt, 1980). However, because so much variation exists, some guidelines were required, and the following were chosen: (1) The mineral symbol should consist of 2 or 3 letters, the first capitalized, the other(s) in lower case. (2) The first letter should be the same as the first letter of the mineral name, and the others should be selected from the mineral name, preferably from the consonants. (3) A mineral symbol should not be identical to any of the symbols of the periodic table of the elements. (4) The symbol should preferably not spell out a word in common use in any of the languages used in scientific writing.

The standard we should strive for with regard to mineral symbols is the universally adopted system of symbols for the chemical elements.

The use of a single symbol for both a mineral phase and a component of a mineral or of a melt phase has created confusion in the past, and a separate set of symbols for components is required. It is suggested that component symbols be written entirely in the lower case, for example di for the component $\text{CaMgSi}_2\text{O}_6$ in a pyroxene crystal or in a melt. Some examples of components that correspond to mineral "end members" and their proposed symbols are listed in Table 2.

¹Editor's note: the abbreviation system described in this note is recommended, not required, for use in *The American Mineralogist*. Comments will be appreciated.

Table 1. Mineral Symbols

Acm	acmite	Elb	elbaite	Ntr	natrolite
Act	actinolite	En	enstatite (ortho)	Ne	nepheline
Agt	aegirine-augite	Ep	epidote	Nrb	norbergite
Ak	åkermanite	Fst	fassite	Nsn	nosean
Ab	albite	Fa	fayalite	Ol	olivine
Aln	allanite	Fac	ferroactinolite	Omp	omphacite
Alm	almandine	Fed	ferroedenite	Oam	orthoamphibole
Anl	analcite	Fs	ferrosilite (ortho)	Or	orthoclase
Ant	anatase	Fts	ferrotschermakite	Opx	orthopyroxene
And	andalusite	Fl	fluorite	Pg	paragonite
Adr	andradite	Fo	forsterite	Prg	pargasite
Anh	anhydrite	Gn	galena	Pct	pectolite
Ank	ankerite	Grt	garnet	Pn	pentlandite
Ann	annite	Ged	gedrite	Per	periclase
An	anorthite	Gh	gehlenite	Prv	perovskite
Atg	antigorite	Gbs	gibbsite	Phl	phlogopite
Ath	anthophyllite	Glt	glauconite	Pgt	pigeonite
Ap	apatite	Gln	glaucophane	Pl	plagioclase
Apo	apophyllite	Gt	geothite	Prh	prehnite
Arg	aragonite	Gr	graphite	Pen	protoenstatite
Arf	arfvedsonite	Grs	grossularite	Pmp	pumpellyite
Apy	arsenopyrite	Gru	grunerite	Py	pyrite
Aug	augite	Gp	gypsum	Prp	pyrope
Ax	axinite	Hl	halite	Prl	pyrophyllite
Brt	barite	Hs	hastingsite	Po	pyrrhotite
Brl	beryl	Hyn	hauyne	Qtz	quartz
Bt	biotite	Hd	hedenbergite	Rbk	riebeckite
Bhm	boehmite	Hem	hematite	Rds	rhodochrosite
Bn	bornite	Hc	hercynite	Rdn	rhodonite
Brk	brookite	Hul	heulandite	Rt	rutile
Brc	brucite	Hbl	hornblende	Sa	sanidine
Bst	bustamite	Hu	humite	Spr	sapphirine
Cam	Ca clin amphibole	Ill	illite	Scp	scapolite
Cpx	Ca clinopyroxene	Ilm	ilmenite	Srl	schorl
Cal	calcite	Jd	jadeite	Srp	serpentine
Ccn	cancrinite	Jh	johannsenite	Sd	siderite
Crn	carnegieite	Krs	kaersutite	Sil	sillimanite
Cst	cassiterite	Kls	kalsilite	Sdl	sodalite
Cls	celestite	Kln	kaolinite	Sps	spessartine
Cbz	chabazite	Ktp	kataphorite	Sp	sphalerite
Cc	chalcocite	Kfs	K feldspar	Spn	sphene
Ccp	chalcopyrite	Krn	kornepurine	Spl	spinel
Chl	chlorite	Ky	kyanite	Spd	spodumene
Cld	chloritoid	Lmt	laumontite	St	staurolite
Chn	chondrodite	Lws	lawsonite	Stb	stilbite
Chr	chromite	Lpd	lepidolite	Stp	stilpnomelane
Ccl	chrysocolla	Lct	leucite	Str	strontianite
Ctl	chrysotile	Lm	limonite	Tlc	talc
Cen	clinoenstatite	Lz	lizardite	Tmp	thompsonite
Cfs	clinoferrosilite	Lo	loellingite	Ttn	titanite
Chu	clinohumite	Mgh	maghemite	Toz	topaz
Czo	clinozoisite	Mkt	magnesiokataphorite	Tur	tourmaline
Crd	cordierite	Mrb	magnesioriebeckite	Tr	tremolite
Crn	corundum	Mgs	magnesite	Trd	tridymite
Cv	covellite	Mag	magnetite	Tro	troilite
Crs	cristoballite	Mrg	margarite	Ts	tschermakite
Cum	cumingtonite	Mel	melilite	Usp	ulvöspinel
Dsp	diaspore	Mc	microcline	Vrm	vermiculite
Dg	diginite	Mo	molybdenite	Ves	vesuvianite
Di	diopside	Mnz	monazite	Wth	witherite
Doi	dolomite	Mtc	monticellite	Wo	wollastonite
Drv	dravite	Mnt	montmorillonite	Wus	wüstite
Eck	eckermannite	Mul	mullite	Zrn	zircon
Ed	edenite	Ms	muscovite	Zo	zoisite

Table 2. Symbols for some components

fo	Mg_2SiO_4
fa	Fe_2SiO_4
alm	$\text{Fe}_3\text{Al}_2\text{Si}_3\text{O}_{12}$
prp	$\text{Mg}_3\text{Al}_2\text{Si}_3\text{O}_{12}$
sps	$\text{Mn}_3\text{Al}_2\text{Si}_3\text{O}_{12}$
en	$\text{Mg}_2\text{Si}_2\text{O}_6$
di	$\text{CaMgSi}_2\text{O}_6$
tr	$\text{Ca}_2\text{Mg}_5\text{Si}_8\text{O}_{22}(\text{OH})_2$
phl	$\text{K}_2\text{Mg}_6\text{Al}_2\text{Si}_6\text{O}_{20}(\text{OH})_4$
eas	$\text{K}_2\text{Mg}_5\text{AlAl}_3\text{Si}_5\text{O}_{20}(\text{OH})_4$
ab	$\text{NaAlSi}_3\text{O}_8$
an	$\text{CaAl}_2\text{Si}_2\text{O}_8$

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