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Abbreviations for names of rock-forming minerals

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Nearly 30 years have elapsed since Kretz (1983) provided the mineralogical community with a systematized list of abbreviations for rock-forming minerals and mineral components. Its logic and simplicity have led to broad acceptance among authors and editors who were eager to adopt a widely recognized set of mineral symbols to save space in text, tables, and figures.

Few of the nearly 5000 known mineral species occur in nature with a frequency sufficient to earn repeated mention in the geoscience literature and thus qualify for the designation "rock-forming mineral," but a reasonable selection of the most common and useful rock-forming minerals likely numbers in the several hundreds. The original list by Kretz (1983) contained abbreviations for 193 of these.

We propose an expansion to the list initiated by Kretz (1983) (see next page). Modest expansions and revisions were made by Spear (1993), Holland and Powell (1998), the Mineralogical Association of Canada, and Siivola and Schmid (2007). Our revised list of abbreviations has 371 entries. Significant numbers of the new entries are the result of three decades of research in high- and ultrahigh-pressure metamorphic terrains, the explicit inclusion of Mg and Fe end-members of solid-solution series (as in the amphiboles), recent work on extraterrestrial samples, and the increased relevance to petrology of numerous accessory minerals.

The two systems of abbreviations currently most in use—Kretz (1983), including modifications; and Holland and Powell (1998)—differ in terms of style and concept. Kretz abbreviations are 2–3 letters and use uppercase first letters for minerals and lower case letters throughout for mineral components (e.g., the almandine component of garnet); the Holland and Powell system varies from 1–5 letters and uses lowercase throughout. The Kretz system provides abbreviations for selected intermediates in solid-solution mineral series. The Holland and Powell system is restricted to abbreviations for end-members for which there are available thermodynamic data that have been included in the Holland and Powell database. The two systems have the same abbreviations for some minerals (other than capitalization), but in many cases use different symbols for the same mineral, for example, "Crn" (Kretz) and "cor" (H&P).

The selection of minerals to include in a list of abbreviations is subjective, but we have tried to err on the side of being inclusive, listing some minerals for which the status is questionable according to the International Mineralogical Association. For example, we accommodate alternative choices such as titanite (Ttn) and sphene (Spn); hypersthene (Hyp), enstatite (En), and orthopyroxene (Opx); glaucophane (Gln), crossite (Crt), and riebeckite (Rbk); and albite (Ab) and anorthite (An) as well as plagioclase (Pl), recognizing that some petrologists have uses for these mineral names. In addition, although our focus is on rock-forming minerals, some hypothetical and/or synthetic phases are included in our list, as well as an abbreviation for "liquid" (Liq). We have also included some abbreviations for mineral groups, e.g., aluminosilicates (Als, the Al_2SiO_5 polymorphs), and other descriptive terms (e.g., opaque minerals). The choice of abbreviations attempts as much as possible to make the identity of the mineral instantly obvious and unambiguous.

Updated list of mineral abbreviations

In this contribution, abbreviations from Kretz (with some modifications) and new abbreviations are listed (Table 1, next page). The following format was used for assigning abbreviations:

(1) The first letter is capitalized; the other letter(s) are lower case, with the exception of Phase A, abbreviated as PhA.

(2) The first letter of the abbreviation is the first letter of the mineral name; subsequent letters are selected from the mineral name.

(3) Most abbreviations consist of 2 or 3 letters, but a 4-letter abbreviation is used when the addition of F for ferro- or M for magnesio- resulted in ambiguity in the 3-letter version (e.g., Mcar for magnesiocarpholite).

(4) Mineral abbreviations were selected so as not to correspond to abbreviations for elements. Note that rule 4 was violated by a few of the original Kretz abbreviations (Mo for molybdenite; Ne for nepheline), so some original Kretz abbreviations have been changed to follow this rule. Others have been modified to avoid ambiguity with minerals added to the list.

Acknowledgment

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References cited

Kretz, R. (1983) Symbols of rock-forming minerals. American Mineralogist, 68, 277–279.

Holland, T.J.B. and Powell, R. (1998) An internally-consistent thermodynamic data set for phases of petrologic interest. Journal of Metamorphic Geology, 16, 309–343.

Siivola, J. and Schmid, R. (2007) Recommendations by the IUGS Subcommission on the Systematics of Metamorphic Rocks: List of mineral abbreviations. Web version 01.02.07. (http://www.bgs.ac.uk/scmr/docs/papers/paper_12.pdf) IUGS Commission on the Systematics in Petrology.

Spear, F.S. (1993) Metamorphic Phase Equilibria and Pressure-Temperature-Time Paths. Monograph 1, Mineralogical Society of America, Chantilly, Virginia.

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TABLE 1. Updated list of abbreviations

Symbol	Mineral Name	IMA status*
Acm	acmite	D
Act	actinolite	A
Adl	adularia	I
Aeg	aegirine	A
Ak	åkermanite	G
Ab	albite	G
Afs	alkali feldspar	GROUP
Aln	allanite	A
Alm	almandine	G
Als	aluminosilicate (Al_2SiO_5 polymorphs)	GROUP
Alu	alunite	Rd
Amk	amakinite	Rd
Ame	amesite	G
Amp	amphibole	GROUP
Anl	analcime (analcite)	A
Ant	anatase	A
And	andalusite	G
Adr	andradite	G
Ang	anglesite	G
Anh	anhydrite	G
Ank	ankerite	G
Ann	annite	A
An	anorthite	G
Ano	anorthoclase	I
Ath	anthophyllite	Rd
Atg	antigorite	Rn
Ap	apatite	GROUP
Apo	apophyllite	GROUP
Arg	aragonite	G
Arf	arfvedsonite	A
Arm	armalcolite	Rd
Apy	arsenopyrite	A
Aug	augite	A
Awr	awaruite	G
Ax	axinite	GROUP
Bab	babingtonite	G
Bdy	baddeleyite	G
Brt	barite (baryte)	A
Brs	barroisite	Rd
Bei	beidellite	G
Brl	beryl	G
Bt	biotite	GROUP
Bxb	bixbyite	G
Bhm	böhmite (boehmite)	G
Bn	bornite	A
Brk	brookite	G
Brc	brucite	G
Bst	bustamite	G
Cal	calcite	G
Ccn	cancrinite	G
Cnl	cannilloite	H
Cb	carbonate mineral	GROUP
Car	carpholite	G
Cst	cassiterite	G
Cel	celadonite	A
Clt	celestine	A
Cls	celsian	G
Cer	cerussite	G
Cbz	chabazite	A
Cct	chalcocite	G
Ccp	chalcopyrite	G
Chm	chamosite	G
Chs	chesterite	A
Chl	chlorite	GROUP
Cld	chloritoid	G
Chn	chondrodite	G
Chr	chromite	G
Ccl	chrysocolla	A
Ctl	chrysotile	Rd
Cin	cinnabar	G
Cam	clinoamphibole	GROUP
Clc	clinochlore	G
Cen	clinoenstatite	A
Cfs	clinoferrosilite	A
Chu	clinohumite	G
Cpt	clinoptilolite	A
Cpx	clinopyroxene	GROUP
Czo	clinozoisite	G
Cln	clintonite	A
Coe	coesite	A
Coh	cohenite	G
Crd	cordierite	G
Crr	corrensite	G
Crn	corundum	G
Cv	covellite	G
Crs	cristobalite	G
Crt	crossite	D
Crl	cryolite	G
Cbn	cubanite	G
Cum	cummingtonite	Rd
Cpr	cuprite	G
Csp	cuspidine	G
Dph	daphnite	not listed
Dat	datolite	G
Dbr	daubreelite	G
Dee	deerite	A
Dia	diamond	G
Dsp	diaspore	G
Dck	dickite	G
Dg	digenite	A
Di	diopside	A
Dpt	dioptase	G
Dol	dolomite	G
Drv	dravite	G
Dum	dumortierite	G
Eas	eastonite	Rd
Ec	ecandrewsite	A
Eck	eckermannite	A
Ed	edenite	A
Elb	elbaite	G
Ell	ellenbergerite	A
Eng	enargite	G
En	enstatite (ortho-)	A
Ep	epidote	GROUP
Eri	erionite	A
Esk	eskolaite	G
Ess	esseneite	A
Eud	eudialite	A
Fas	fassaite	D
Fa	fayalite	G
Fsp	feldspar	GROUP
Fac	ferro-actinolite	Rd
Fath	ferro-anthophyllite	Rd
Fbrs	ferrobarroisite	A
Fcar	ferrocarpholite	A
Fcel	ferroceladonite	A
Fec	ferro-eckermannite	Rd
Fed	ferro-edenite	Rd
Fgd	ferrogedrite	Rd
Fgl	ferroglaucophane	Rd
Fkrs	ferrokaersutite	A
Fny	ferronyboite	H
Fprg	ferropargasite	Rd
Frct	ferrorichterite	A
Fs	ferrosilite	Rn
Fts	ferrotschermakite	Rd
Fwn	ferrowinchite	Rd
Fi	fibrolite (fibrous sillimanite)	informal
Fl	fluorite	G
Fo	forsterite	G
Fos	foshagite	G
Frk	franklinite	G
Ful	fullerite	N
Ghn	gahnite	G
Glx	galaxite	G
Gn	galena	G
Grt	garnet	GROUP
Ged	gedrite	Rd
Gh	gehlenite	G
Gk	geikielite	G
Gbs	gibbsite	A
Gis	gismondine	A
Glt	glauconite	GROUP
Gln	glaucophane	Rd
Gme	gmelinite	A
Gth	goethite	A
Gdd	grandidierite	G
Gr	graphite	G
Gre	greenalite	G
Grs	grossular	A
Gru	grunerite	Rd
Gp	gypsum	G
Hl	halite	G
Hrm	harmotome	A
Hst	hastingsite	Rd
Hsm	hausmannite	G
Hyn	haüyne	G
Hzl	heazlewoodite	G
Hd	hedenbergite	A
Hem	hematite	A
Hc	hercynite	G
Hul	heulandite	A
Hbn	hibonite	G
Hbs	hibschite	Rn
Hgb	högbomite	D
Hol	hollandite	G
Hlm	holmquistite	Rd
Hbl	hornblende	GROUP
Hw	howieite	A
Hu	humite	G
Hgr	hydrogrossular	GROUP
Hyp	hypersthene	D
Ilt	illite	GROUP
Ilm	ilmenite	G
Ilv	ilvaite	G
Jd	jadeite	A
Jrs	jarosite	Rd
Jim	jimthompsonite	A
Jhn	johannsenite	A
Krs	kaersutite	Rd
Kls	kalsilite	G
Kam	kamacite (α-FeNi)	D
Kln	kaolinite	A
Ktp	katophorite	Rd
Kfs	K-feldspar	informal
Khl	K-hollandite	H
Kir	kirschsteinite	G
Krn	kornerupine	G
Kos	kosmochlor	A
Kut	kutnohorite (kutnahorite)	G
Ky	kyanite	A
Lrn	larnite	G
Lmt	laumontite	A
Lws	lawsonite	G
Lzl	lazulite	A
Lzr	lazurite	G
Lpd	lepidolite	GROUP
Lct	leucite	G
Lm	limonite	not listed
Liq	liquid	
Lz	lizardite	G
Lo	löllingite (loellingite)	G
Mgh	maghemite	G
Marf	magnesio-arfvedsonite	Rd
Mcar	magnesiocarpholite	A
Mfr	magnesioferrite	G
Mhs	magnesiohastingsite	Rd
Mhb	magnesiohornblende	Rd
Mkt	magnesiokatophorite	Rd

Symbol	Mineral Name	IMA status*
Mrbk	magnesioriebeckite	Rd
Msdg	magnesiosadanagite	Rd
Mst	magnesiostaurolite	A
Mtm	magnesiotaramite	Rn
Mws	magnesiowustite	not listed
Mgs	magnesite	A
Mag	magnetite	G
Maj	majorite	A
Mlc	malachite	G
Mng	manganosite	G
Mrc	marcasite	G
Mrg	margarite	A
Mar	marialite	G
Mei	meionite	G
Mll	melilite	GROUP
Mw	merwinite	G
Mes	mesolite	A
Mc	microcline	G
Mlr	millerite	G
Mns	minnesotaite	G
Mog	moganite	A
Mol	molybdenite	G
Mnz	monazite	A
Mtc	monticellite	G
Mnt	montmorillonite	G
Mor	mordenite	A
Mul	mullite	G
Ms	muscovite	A
Ntr	natrolite	A
Nph	nepheline	G
Nrb	norbergite	G
Nsn	nosean	G
Nyb	nyböite	Rd
Ol	olivine	GROUP
Omp	omphacite	A
Opl	opal	G
Opq	opaque mineral	informal
Orp	orpiment	G
Oam	orthoamphibole	GROUP
Or	orthoclase	A
Oen	orthoenstatite	D
Opx	orthopyroxene	GROUP
Osm	osumilite	G
Plg	palygorskite	G
Pg	paragonite	A
Prg	pargasite	Rd
Pct	pectolite	G
Pn	pentlandite	G
Per	periclase	G
Prv	perovskite	G
Ptl	petalite	G
PhA	phase A	not listed
Ph	phengite	G
Php	phillipsite	A
Phl	phlogopite	A
Pmt	piemontite	A
Pgt	pigeonite	A
Pl	plagioclase	GROUP
Prh	prehnite	G
Prm	prismatine	Rd
Psb	pseudobrookite	Rd
Pmp	pumpellyite-(Al)	A
Py	pyrite	G
Pcl	pyrochlore	A
Prp	pyrope	G
Pph	pyrophanite	G
Prl	pyrophyllite	G
Pxf	pyroxferroite	A
Pxm	pyroxmangite	G
Po	pyrrhotite	G
Qnd	qandilite	A
Qz	quartz	A
Rnk	rankinite	G
Rlg	realgar	G
Rds	rhodochrosite	A
Rdn	rhodonite	A
Rct	richterite	A
Rbk	riebeckite	Rd
Rwd	ringwoodite	A
Rdr	roedderite	A
Rsm	rossmanite	A
Rt	rutile	G
Sdg	sadanagaite	Rd
Sa	sanidine	G
Sap	saponite	G
Spr	sapphirine	G
Scp	scapolite	GROUP
Sch	scheelite	G
Srl	schorl	G
Scb	schreibersite	G
Sep	sepiolite	G
Ser	sericite	D
Srp	serpentine	GROUP
Sd	siderite	G
Sil	sillimanite	G
Sme	smectite	GROUP
Sdl	sodalite	G
Sps	spessartine	A
Sp	sphalerite	A
Spn	sphene (titanite)	D
Spl	spinel	G
Spd	spodumene	A
Spu	spurrite	G
St	staurolite	G
Stv	stevensite	Q
Stb	stilbite	A
Stp	stilpnomelane	A
Sti	stishovite	A
Str	strontianite	G
Sud	sudoite	Rd
Syl	sylvite	G
Tae	taenite (γ-Fe, Ni)	G
Tlc	talc	G
Trm	taramite	Rd
Tnt	tennantite	G
Tnr	tenorite	A
Tep	tephroite	G
Ttr	tetrahedrite	A
Thm	thomsonite	A
Thr	thorite	G
Tly	tilleyite	G
Ttn	titanite (sphene)	A
Tpz	topaz	G
Tur	tourmaline	GROUP
Tr	tremolite	Rd
Trd	tridymite	G
Tro	troilite	G
Ts	tschermakite	Rd
Usp	ulvöspinel	G
Urn	uraninite	G
Uv	uvarovite	A
Vtr	vaterite	A
Vrm	vermiculite	G
Ves	vesuvianite	A
Wds	wadsleyite	A
Wag	wagnerite	Rd
Wrk	wairakite	A
Wav	wavellite	A
Wht	whitlockite	G
Wlm	willmenite	G
Wnc	winchite	Rd
Wth	witherite	G
Wo	wollastonite	A
Wur	wurtzite	G
Wus	wüstite	G
Xtm	xenotime	A
Xon	xonotlite	G
Yug	yugawaralite	A
Zeo	zeolite	GROUP
Znw	zinnwaldite	GROUP
Zrn	zircon	G
Zo	zoisite	G

* International Mineralogical Association (IMA) abbreviations: A = Approved; D = Discredited; G = Grandfathered (generally regarded as valid mineral name); GROUP = Name designates a group of mineral species; H = hypothetical (e.g., synthetic); I = intermediate in a solid-solution series; Q = questionable; Rd = Redefinition approved by IMA Commission on New Minerals, Nomenclature and Classification (CNMNC); Rn = Renamed with approval of the CNMNC.