

Procedures involving the IMA Commission on New Minerals and Mineral Names and guidelines on mineral nomenclature

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INTRODUCTION

The Commission on New Minerals and Mineral Names (hereafter abbreviated as CNMMN) of the International Mineralogical Association was established in 1959 for the purpose of controlling mineral nomenclature. All proposals for introducing new minerals, changing mineralogical nomenclature, and discrediting or redefining existing minerals and mineral names should be submitted to the CNMMN for approval before publication. If approval is withheld, the proposal should not be published.

This report incorporates material from previous reports on mineral nomenclature and procedures of the CNMMN (Fleischer, 1970; Donnay and Fleischer, 1970; Embrey and Hey, 1970; Hey and Gottardi, 1980; Mandarino et al., 1984) and represents an attempt to consolidate this information and to present a comprehensive summary of the subject. Where there are differences between this report and the earlier ones, this version is to be regarded as the correct one.

SUBMISSION OF PROPOSAL

1. If the proposal deals with a new mineral, it should be sent directly to the chairman of the CNMMN. In countries that require a prior review by their national committee, the proposal should first be submitted to the national committee and subsequently to the CNMMN.

2. Any proposal to redefine or discredit an existing mineral or mineral name, or to revalidate an obsolete name, must be submitted to the vice-chairman of the CNMMN, with a copy to the chairman.

3. If the proposal deals with a mineral group, it should be sent to the secretary of the CNMMN, with a copy to the chairman (the current secretary is Dr. C.E.S. Arps, National Museum of Geology and Mineralogy, Hooglandse Kerkgracht 17, 2312 HS Leiden, Netherlands).

NATURE OF THE PROPOSAL

A proposal should include as many data as possible so that the CNMMN can adequately judge the validity of the proposal. Ideally, a new-mineral proposal should contain the following information:

Proposed name and reason for its selection.

Description of the occurrence. Geographic and geologic occurrence, paragenesis, and a list of associated minerals, particularly those in apparent equilibrium with the new mineral.

Chemical composition and method of analysis.

Chemical formula. Empirical and simplified.

Crystallography. Crystal system, crystal class, space group, unit-cell parameters, unit-cell volume, number of formula units per unit cell, X-ray powder data, morphology, and crystal structure.

General appearance and physical properties. Grain or crystal size, type of aggregate, color, streak, luster, transparency, hardness, tenacity, cleavage, parting, fracture, density (calculated and measured).

Optical properties. Nonmetallic minerals: optical character (isotropic or anisotropic; uniaxial or biaxial), optical sign, indices of refraction, $2V$, dispersion, orientation, pleochroism, and absorption. Metallic minerals: color in reflected light, internal reflections, anisotropy, birefractance, pleochroism, and reflectivity.

Type material. Museum where it is deposited.

Relationship to other species.

Any other data that will clarify difficult parts of the description.

It is recognized that it may not always be possible to obtain all the above data; in such cases the author should give reasons for the omissions. To assist potential authors of new-mineral proposals, a checklist should be submitted as part of the proposal. Copies of an official checklist can be obtained from the chairman of the CNMMN or from one of the national representatives. Guidelines on some aspects of mineral proposals are given below.

CRITERIA FOR A NEW MINERAL NAME

A mineral is generally accepted as being a crystalline substance that has defined compositional limits and that has been formed as the result of geologic processes. The essential components in the definition of a mineral are its chemical composition and its crystallographic properties. If a mineral is found whose composition and/or crystallographic properties are substantially different from those of any existing mineral, a new name, if needed, must be proposed to the CNMMN. It is probably not desirable to formulate rigid rules to define whether or not a compositional or crystallographic difference is suffi-

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ciently large to require a new mineral name, and each new-mineral proposal must be considered on its own merits. However, a general guideline for compositional criteria is that at least one major structural site should be occupied by a different chemical component than that which occurs in the equivalent site in an existing mineral. But if the presence of an element occurring in a relatively minor amount stabilizes the structure, or if its presence in an occupied site effects a structural change owing to charge or size difference, then consideration may be given to a proposal to create a new name for such a mineral. Generally speaking, a crystallographic difference sufficiently large to justify the creation of a new mineral name is one in which the structure of the mineral is topologically different from that of an existing one.

Example 1. Hydroxyl-apatite and fluorapatite both crystallize in the hexagonal system, with the same space group, and have similar unit-cell parameters. They are considered as separate minerals because the relevant structural site is predominantly occupied by OH in hydroxyl-apatite and by F in fluorapatite.

Example 2. Sphalerite (ZnS) and "marmatite" [(Zn,Fe)S] are both cubic, with the same space group and similar unit-cell parameters, but they are not regarded as separate minerals because the metal structural site is predominantly occupied by Zn in both cases. Marmatite is regarded as a ferroan variety of sphalerite.

Example 3. Graphite and diamond both have the same composition, but their structures are topologically different, and therefore minerals such as these deserve separate names.

Polymorphs

Polymorphic minerals are those that have essentially the same chemical compositions, but different crystal structures. Polymorphs are regarded as distinct species and warrant separate mineral names. If the structures of the polymorphs are topologically similar, it is preferable to give the new polymorph a name that is related to that of the existing polymorph (see "Selection of a Mineral Name," below) rather than giving it a trivial name.

Polytypes

Polytypes have been defined as substances that occur in several different structural modifications, each of which may be regarded as built up by the stacking of layers of (nearly) identical structure and composition, and with the modifications differing only in their stacking sequence (Guinier et al., 1984). Polytypes do not merit new names, but can be distinguished by appropriate suffixes. The modified Gard notation recommended by the International Union of Crystallography (Guinier et al., 1984) is probably more detailed than is necessary for mineral nomenclature since it is generally necessary only to distinguish between polytypes, not to specify them accurately. Consequently, a simplified nomenclature is used; first proposed by Ramsdell (1947), it consists of a suffix that is an italicized alphabetical character indicating the crys-

tal system and an italicized numerical symbol indicating the multiplicity of the structural unit. The alphabetical characters recommended by the International Union of Crystallography (Guinier et al., 1984), and now by the CNMMN, are as follows: cubic, *C*; hexagonal, *H*; rhombohedral, *R*; trigonal, *T*; tetragonal, *Q* (quadratic); orthorhombic, *O*; monoclinic, *M*; triclinic, *A* (anorthic).

Example 4. Wurtzite-4*H* is a hexagonal polytype with a periodicity of 4 times the *c* dimension of the wurtzite parent; wurtzite-15*R* is a rhombohedral polytype with a 15-times periodicity.

Although polytypes are not regarded as mineral species, authors are advised to consult with officers of the CNMMN before introducing new polytype names for minerals into the literature.

Regular interstratifications

New names can be given to regular interstratifications where the kinds of layers, their relative proportions, chemical compositions, and regularity of interstratification have been well documented. For detailed criteria that determine whether the interstratification is sufficiently regular to warrant a species name, the reader is referred to Bailey (1981). However, any proposed new name must be submitted to the CNMMN.

Example 5. The name alietite has been given to a 1:1 regular interstratification of talc and trioctahedral smectite.

TYPE SPECIMEN

When a new mineral is described, or an existing one redefined, the author should exercise care in defining its type designation and should ensure that a type specimen is held as permanent reference material by at least one major museum or a nationally recognized mineral collection.

TREATMENT OF NEW-MINERAL PROPOSAL

When the chairman of the CNMMN receives a new-mineral proposal, he is authorized to write to the author asking for more data when he considers this desirable, or he may point out possible objections either to the mineral or to the name. If the author so desires, the chairman is required to submit a proposal to the CNMMN whether or not he approves of it. In such cases, the chairman will inform the authors that he will give his reasons as to the unsuitability of the proposal under "Chairman's Remarks." The chairman's abstract of a proposal is sent by air mail to each member of the CNMMN, and approximately 60 days are allowed for receipt of voting papers.

Members of the CNMMN are urged, not only to vote, but also to comment in detail. The chairman is authorized to suspend voting on a proposal to enable more information to be obtained, or he may call for a second vote on a proposal if, in his opinion, important comments are made by members that should be seen by all the members. Second votes have the same voting periods (about 60 days) and require the same majorities as those

for original proposals (see below). Any member of the CNMMN who objects to a proposal may ask the chairman to suspend voting or to call for a new vote, but the final decision to do so rests with the chairman.

Abstracts of proposals dealing with "ore" minerals may be sent to some members of the IMA Commission on Ore Mineralogy, at the discretion of the chairman. Similarly, the chairman may submit abstracts of any proposals to other specialists for advisory opinions. Such advisors do not vote, but their comments are considered by the chairman. Serious objections raised by any advisors are to be treated by the chairman as specified above.

Proposals dealing with minerals belonging to mineral groups for which subcommittees have been organized by the CNMMN may be sent to the appropriate subcommittee chairman for circulation among the subcommittee members if the CNMMN chairman thinks such action is advisable. Subcommittee members are invited to submit opinions, and serious objections raised by them are to be treated as specified above.

If two or more proposals for the same new mineral are received by the chairman, the proposal that arrived first in the chairman's office will have priority.

A proposed new mineral will be considered approved if more than half ($1/2$) of the members of the CNMMN vote on the proposal and if more than two-thirds ($2/3$) of these members have voted "yes." A proposed name will be considered approved if more than one-half ($1/2$) of the members who vote on the proposal have voted "yes." In assessing the voting results, an abstention is treated as a negative vote. After voting on a proposal is completed, the chairman sends the results to the CNMMN members and to the author of the proposal. He includes the comments of the voting members, but the votes of individual members are not disclosed. Reconsideration of adverse votes can be requested by an author at any time if *significant new data or new interpretations* are obtained. If a mineral is approved, but not the name, a new name should be requested by the chairman when he notifies the author of the voting results. In cases of repeat voting, approvals of the mineral and the name require the same majorities as in the original voting.

Authors who have described new minerals without names do not have any priority rights on the subsequent naming of such minerals. Any names proposed subsequently have to be approved by the CNMMN, as do the minerals for which the names are proposed.

The publication of nonapproved names or the names of nonapproved minerals is not condoned. Nonapproved minerals for which descriptions have been published should be treated as *unnamed minerals* and fall under the provisions of the preceding paragraph.

REDEFINITION, DISCREDITING, OR REVALIDATION OF MINERALS

Whenever possible, the redefinition or discrediting of a mineral should be based on a study of type material. If a type specimen exists and if the original description,

though faulty, represents a reasonable approximation to material on the specimen, the mineral is to be defined by reference to be type material rather than to the original description. This means that errors in the original description cannot be held to discredit a mineral unless the original description was so grossly inaccurate that, in the words of J. D. Dana (1868) "a recognition of the mineral by means of it is impossible." If type material cannot be obtained for study, the investigator may propose a neotype to the CNMMN, clearly stating the efforts made to seek the original type specimen. Both the acceptance of the neotype and approval of the proposal are within the authority of the CNMMN.

If a mineral is shown to be a mixture and one of the components is otherwise new, the name should usually be transferred to the new phase; a proposal to do this must also be approved by the CNMMN before publication.

If the original authors of the mineral to be discredited or redefined are alive, the author of the discrediting or redefinition proposal should write to the original authors asking them to comment on the proposal; these comments should accompany the submission to the CNMMN. The vice-chairman may also choose to contact the original authors independently.

Minor modifications to the definition of a particular mineral do not need to be referred to the CNMMN, but substantial ones do. In general, a redefinition that requires approval by the CNMMN is (1) one that adds or deletes one or more chemical components essential to the definition of the mineral; (2) proposes a new compositional limit to a member of a solid-solution series; or (3) proposes important changes in the structure of the mineral. In case of doubt, the redefinition proposal should be sent to the vice-chairman of the CNMMN for a ruling.

A mineral name may be discredited if it can be shown that the mineral is identical to another one that has priority, or if the name is misleading. All such cases must be submitted to the vice-chairman of the CNMMN for approval. In the examples below, approval is required, except as noted:

Example 6. A case similar to that of johachidolite (*Amer. Mineral.*, 62, 327), in which the elements H, Na, and F were found not to be essential to the mineral.

Example 7. A case similar to that of sarcolite (*Mineral. Mag.*, 48, 107), in which it was shown that F is essential to the mineral.

Example 8. A case similar to that of hauchecornite (*Mineral. Mag.*, 43, 873), in which it was shown that ordering of Bi, As, Sb, and Te on two structural sites warranted redefinition of the original name and the introduction of three new mineral names for end members.

Example 9. A case similar to that of minerals in the amphibole group, in which compositional limits to members of solid-solution series were proposed (*Amer. Mineral.*, 63, 1023).

Example 10. A case similar to that of pierrotite (*Zeit. Krist.*, 165, 209), in which one S atom was subtracted

from the formula, does not require approval because no essential elements are added or deleted, only their proportion has changed. However, if this change had also been accompanied by a change in symmetry of the mineral, then approval would have been required.

Example 11. A case similar to that of onoratoite, originally described as triclinic, but later found to be monoclinic (*Acta Cryst.*, C40, 1506).

Example 12. A case similar to that of mohsite, which was discredited (*Can. Mineral.*, 17, 635) because re-examination of a type specimen showed that it is essentially similar to crichtonite, which has priority over mohsite.

Example 13. A case similar to that of ferroschallerite, which was discredited because re-examination of type material showed that it was not the Fe analogue of schallerite and that it did not have the schallerite structure (*Mineral Mag.*, 48, 271).

A discredited name should not be used in the literature except to report its discrediting. However, if there is evidence that a previously discredited mineral is valid, a proposal to revalidate the name should be submitted to the CNMMN for consideration.

The treatment of proposals for redefinition, discrediting, or revalidation is analogous to that for the introduction of a new mineral name, and more than a two-thirds ($\frac{2}{3}$) majority is required to approve such proposals.

A list of mineral names discredited by the CNMMN is given as Appendix Table 1.

SELECTION OF A MINERAL NAME

Adjectival modifiers

In mineralogical nomenclature, it is important to distinguish the name proper from adjectival modifiers that may precede the name and are not connected to it. An adjectival modifier is not considered to be part of the mineral name and is normally used to indicate a compositional variant, e.g., *ferroan* manganotantalite, where *ferroan* is the adjectival modifier that indicates the presence of some ferrous iron and manganotantalite is the name proper. The adjectival modifiers recommended by Schaller (1930) have generally been used in papers published in the English language, but with the greatly increased information about valence states that has become available since that time, it seems appropriate to draw up a new list.

A complete consensus could not be reached by members of the CNMMN on several adjectival modifiers. Although the CNMMN generally recommends that Latin-derived prefixes should be used whenever possible (Hey and Gottardi, 1980), a substantial number of members feel more comfortable with prefixes derived from common English names of chemical elements, e.g., sodium vs. natrium and potassium vs. kalium. In such cases, either version is regarded as acceptable. Table 1 is a list of adjectival modifiers approved by the CNMMN.

In constructing an adjectival modifier that is not in Table 1, the ending *oan* is to be used for the ion with the

lower valency, and *ian* for the higher. If the valency of an element in a particular mineral is not known, the adjectival modifier derived from the more likely, or more common, valence state of the element should be used.

An adjectival modifier is an adjective that gives some information on the chemistry of the mineral and is not considered to be a part of the mineral name. Adjectival modifiers should therefore be ignored in the preparation of alphabetical indexes. In some papers, an adjectival modifier is given in the form of a hyphenated prefix composed of a chemical symbol, e.g., Li-tosudite, rather than lithian tosudite or lithium-bearing tosudite. Such usage is *incorrect and should be avoided*.

Group and varietal names

A mineral name may be used for a group of minerals, e.g., mica, or for a mineral species, e.g., muscovite. Sometimes the species name is also used as a group name, e.g., the pyrite species is a member of the pyrite group. In the past, varieties of minerals have been given special names, e.g., kuzite (a variety of spodumene), but this practice is not approved.

Name selection

Naming a new mineral is the prerogative and responsibility of the senior author of the proposal submitted to the CNMMN for approval, but the choice of a new name is governed by the following guidelines:

The name must be sufficiently different from existing ones to prevent confusion, both in the author's language and in others. Existing mineral nomenclature already displays a number of examples of unfortunate names that are easily confused; names such as celadonite and cale-donite or mallardite and malladrite can easily be misspelled; names such as rhodesite, rhodizite, and rhodusite are euphonicly very similar. Introduction of new names that can create similar problems must be avoided.

If the new mineral is related to an existing one, it is desirable that this relationship be indicated by the new name, e.g., clinoenstatite for the monoclinic dimorph of enstatite, or magnesiocopiapite for the Mg analogue of copiapite. Such a name should consist of one word only (e.g., magnesiocopiapite, *not* magnesium copiapite).

Efforts should be made to choose a simple name rather than an excessively complicated one that may be difficult to read or pronounce.

The use of excessively long names should be avoided, as these may cause difficulties in pronunciation, tabulations, and computer databases.

The name of a mineral with essential rare-earth elements (or the chemically related elements Y or Sc) must have a suffix indicating the dominant rare-earth element, e.g., bastnäsite-(Ce). If a new mineral with the same structure and analogous composition, but with a different dominant rare-earth element, is discovered, it should be given a name that is analogous to that of the existing mineral, e.g., bastnäsite-(Y). A suffix of this type is known as a "Levinson modifier" after the author who introduced

TABLE 1. Adjectival modifiers approved by the CNMMN

Ag	argentian	N	nitrian; (NO ₃) ⁻ nitratian
Al	aluminian	NH ₄ ⁺	ammonian
As ³⁺	arsenoan; As ⁵⁺ arsenian; (AsO ₃) ³⁻ arsenitian; (AsO ₄) ³⁻ arsenatian	Na	natrian or sodian
Au	aurian	Nb	niobian; (NbO ₄) ³⁻ niobatian
B	borian; (BO ₃) ³⁻ boratoan; (BO ₄) ⁵⁻ boratian	Nd	neodymian
Ba	barian	Ni ²⁺	nickeloan; Ni ³⁺ nickelian
Be	beryllian	O	oxygenian
Bi ³⁺	bismuthoan; Bi ⁵⁺ bismuthian; (BiO ₄) ⁵⁻ bismuthatian	Os	osmian
Br	bromian; (BrO ₃) ⁻ bromatian	P	phosphorian; (PO ₄) ³⁻ phosphatian
C	carbonian; (CO ₃) ²⁻ carbonatian	Pb ²⁺	plumboan; Pb ⁴⁺ plumbian
Ca	calcian	Pd ²⁺	palladoan; Pd ⁴⁺ palladian
Cd	cadmian	Pr	praseodymian
Ce ³⁺	ceroan; Ce ⁴⁺ cerian	Pt ²⁺	platinoan; Pt ⁴⁺ platinian
Cl	chlorian; (ClO ₃) ⁻ chloratian	Ra	radian
Co ²⁺	cobaltoan; Co ³⁺ cobaltian	Rb	rubidian
Cr	chromian; (CrO ₄) ²⁻ chromatian	Re	rhenian
Cs	caesian or cesian	Rh	rhodian
Cu ⁺	cuproan; Cu ²⁺ cuprian	Ru	ruthenian
Dy	dysprosian	S	sulphurian or sulfurian; (SO ₄) ²⁻ sulphatian or sulfatian; (SO ₃) ²⁻ sulphitian or sulfitian
Er	erbian	Sb ³⁺	antimonoan or stiboan; Sb ⁵⁺ antimonian or stibian; (SbO ₄) ³⁻ antimonatian or stibatian
Eu ²⁺	europoan; Eu ³⁺ europian	Sc	scandian
F	fluorian	Se	selenian; (SeO ₄) ²⁻ selenatian; (SeO ₃) ²⁻ selenitian
Fe ²⁺	ferroan; Fe ³⁺ ferrian	Si	silician; (SiO ₄) ⁴⁻ silicatian
Fr	francian	Sm	samarian
Ga	gallian	Sn ²⁺	stannoan; Sn ⁴⁺ stannian
Gd	gadolinian	Sr	strontian
Ge	germanian; (GeO ₄) ⁴⁻ germanatian	Ta	tantalian
H	hydrogenian; (OH) ⁻ hydroxylian; (H ₃ O) ⁺ hydronian or oxonian; H ₂ O hydrated or hydrous	Tb	terbian
Hf	hafnian	Te	tellurian; (TeO ₄) ²⁻ telluratian; (TeO ₃) ²⁻ telluritian
Hg ⁺	mercuroan; Hg ²⁺ mercurian	Th	thorian
Ho	holmian	Ti ³⁺	titanoan; Ti ⁴⁺ titanian
I	iodian; (IO ₃) ⁻ iodatian	Tl ⁺	thalloan; Tl ³⁺ thallian
In	indian	Tm	thulian
Ir	iridian	U ⁴⁺	uranoan; U ⁶⁺ uranian; (UO ₂) ²⁺ uranylian
K	kalian or potassian	V ²⁺	vanadoan; V ⁵⁺ vanadian; (VO ₄) ³⁻ vanadatian; (VO) ²⁺ vanadylian
La	lanthanian	W	wolframian or tungstenian; (WO ₄) ²⁻ wolframatian or tungstatian
Li	lithian	Y	yttrian
Lu	lutecian	Yb	ytterbian
Mg	magnesian	Zn	zincian
Mn ²⁺	manganoan; Mn ³⁺ or Mn ⁴⁺ manganian	Zr	zirconian
Mo	molybdian; (MoO ₄) ²⁻ molybdatian		

this procedure (Levinson, 1966). The CNMMN recently decided that the names of all minerals containing essential rare-earth elements, including those introduced into the literature before the publication of Levinson's paper, should be changed into the approved format. A list of these mineral names is given as Appendix Table 2.

In a few cases, a procedure similar to that described for minerals with essential rare-earth elements has been used for minerals that can contain different substituting elements in one or more structural sites, e.g., jahnsite-(CaMnMg). In general, this type of nomenclature is acceptable in cases where only one substituting element is suffixed, but suffixes consisting of multiple elements are conditionally acceptable in cases where the structure is complex and where the use of such suffixes simplifies the nomenclature.

Suffixes can also be used to indicate crystallographic relationships. This usage has already been noted in the case of polytypes, but it has also recently been extended to minerals that are not polytypes according to the rigorous definition, e.g., hilgardite-3*Tc* (Ghose, 1985).

Relationships to other minerals can also be indicated

by the use of prefixes, e.g., clinoenstatite, the monoclinic dimorph of enstatite, or magnesiochromite, the Mg analogue of chromite. The use of a hyphen to distinguish the prefix from the root name is to be discouraged, but where an unhyphenated name is awkward and a hyphen assists in deciphering the name, it may be used, e.g., hydroxylbastnäsite-(Ce).

When a chemical prefix is used, Latin-derived prefixes should be used whenever possible, e.g., "ferro" instead of "iron," "plumbo" instead of "blei," etc. (Hey and Gottardi, 1980).

The prefix is an integral part of the mineral name and should generally be treated as such in the preparation of alphabetical indexes; however, an exception can be made in the case of prefixed symbols such as Greek letters or their spelled-out Latin equivalents. A recent decision by the CNMMN permits their positioning after the main name; e.g., β -roselite may be written as roselite- β or roselite-beta.

If the mineral is named after a person with a space or a capital letter in the name, the name should be modified to eliminate them, e.g., mcnearite, *not* mcNearite; joe-

smithite, *not* joe smithite. Otherwise, the original spelling of the person's name should be retained. If the mineral is to be named after a living person, that person's permission must be obtained by the author, and this should be done prior to the submission of the proposal to the CNMMN. When deciding to name a mineral after a person, it is well to recall J. D. Dana's (1854) precept: "It should be remembered that the use of names of persons eminent in other sciences, or of such as are ignorant of all science, is wholly at variance with good usage and propriety; moreover, an attempted flattery of the politically distinguished is degrading to science, and cannot be too strongly discountenanced."

Although the CNMMN does not have a fixed policy on the use of compounded personal names, some members feel strongly that they should be discouraged, particularly where they become cumbersome or cacophonous, or where they unnecessarily distort the true names of the individual who is supposedly being honored.

If the mineral is to be named after a geographical occurrence, care must be taken to ensure that the spelling conforms to that in use at the locality and should not be taken from translations.

Mineral names proposed in languages that use other than the Latin alphabet shall be transliterated into the Latin alphabet according to the prevalent system operative in the country of origin. In the case of Cyrillic names, transliteration shall follow the British Standard System, which has been adopted by the CNMMN. Diacritical marks must be retained wherever possible, but it is recognized that not all printing establishments have the necessary facilities for printing all types of diacritical marks; in such cases diacritical marks may be omitted.

Reuse of a discredited or obsolete name for a new or redefined mineral is to be discouraged, except when the new mineral is a component of a mixture originally described as a single mineral; in such a case, the original name may be transferred to the new phase. Reuse of a discredited name may also be permitted if there is a good reason why the discredited name is particularly appropriate for the mineral in question, and the discredited or obsolete name has not appeared in the active literature (except for the report of its discrediting) for *fifty years*. A proposal to reuse an obsolete name must be accompanied or preceded by a proposal to discredit the obsolete name. If the CNMMN does not approve a proposal to reuse a discredited name, the author of the proposal has no priority for the use of the discredited name, although he is free to propose the name again at a future time.

The reuse of an obsolete or discredited name will not be permitted if the name has been used outside the field of mineralogy (e.g., in petrography, metallurgy, paleontology, etc.) or to indicate two or more minerals.

If an artificial substance has been given a name, and a mineral corresponding to that substance is subsequently discovered, the name given to the artificial substance does not necessarily have to be applied to the mineral.

PUBLICATION OF DESCRIPTIONS OF APPROVED MINERALS

Authors of approved proposals should publish descriptions of the minerals covered by these proposals within *two years* of being notified of the approval by the chairman or vice-chairman. If descriptions of new minerals and discrediting, redefinition, or revalidation of mineral names are not published within that time, the proposals are no longer considered as approved. Any extensions of this deadline must be approved by the chairman or vice-chairman, as appropriate.

ADVICE TO EDITORS

Editors of mineralogical and geological journals will do a service to the Earth sciences if they cooperate fully with the CNMMN. All aspects of the nomenclature in submitted manuscripts should be evaluated according to the guidelines given here. Assurance should be sought from authors that they have submitted all matters dealing with mineral nomenclature to the CNMMN and that their proposals have been approved. Unless they have definite proof of approval, editors should consult with their national representatives or with members of the CNMMN executive. Editors should be particularly cautious about the final acceptance of a paper bearing phrases like "has been submitted" or "will be submitted" to the CNMMN. Acceptance of such papers should be delayed until evidence is produced that the nomenclature *has been approved* by the CNMMN.

In the case of new minerals, editors should insist on evidence that a type specimen of the new mineral has been lodged in at least one major museum or a nationally recognized mineral collection.

It would be appreciated if all journals that publish mineralogical papers included the following statement in their instructions to authors:

"This journal follows the rules of the Commission on New Minerals and Mineral Names of the IMA in all matters concerning mineral names and nomenclature."

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APPENDIX TABLE 1. MINERAL NAMES DISCREDITED BY THE CNMMN (NOT TO BE USED IN PUBLICATIONS) AND APPROVED MINERAL NAME (IF ANY) THAT MAY BE USED IN PUBLICATIONS

Discredited name	Approved name	Reference	Discredited name	Approved name	Reference
Abkhazite	Tremolite	Am. Min. 63 (1978), 1023	Antiglaucophane	Glaucophane or crossite	Am. Min. 63 (1978), 1023
Abriachanite	Riebeckite	Am. Min. 63 (1978), 1023	Arfvedsonite	Arfvedsonite	Am. Min. 63 (1978), 1023
Absite	Brammerite	Am. Min. 48 (1963), 1419	Argentocuproaurite		Min. Mag. 43 (1980), 1055
Abukumalite	Britholite-(Y)	Am. Min. 51 (1966), 152	Arsenate-belovite	Talmessite	Bull. Min. 97 (1974), 520
Achrematite	Mixture	Am. Min. 62 (1977), 170	Arsenodialyte	Asbestos	Am. Min. 63 (1978), 1023
Achromaite	Hornblende	Am. Min. 63 (1978), 1023	Asbeferrite	Asbestos	Am. Min. 63 (1978), 1023
Actinote	Actinolite	Am. Min. 63 (1978), 1023	Asbestinite	Asbestos	Am. Min. 63 (1978), 1023
Actynolite	Actinolite	Am. Min. 63 (1978), 1023	Asbestoide	Asbestos	Am. Min. 63 (1978), 1023
Actynolite	Actinolite	Am. Min. 63 (1978), 1023	Asbestus	Asbestos	Am. Min. 63 (1978), 1023
Adelpholite	Samarskite-(Y)	Am. Min. 51 (1966), 1553	Asharite	Szajbelyite	this paper
Aktinolitischer tschermakite	Magneso- or ferro-hornblende	Am. Min. 63 (1978), 1023	Ashtonite	Strontian mordenite	Min. Mag. 38 (1971), 383
Alaskaite	Mixture	Am. Min. 58 (1973), 349	Ashtonite	Manganian richterite	Am. Min. 63 (1978), 1023
Alazanite		Min. Mag. 43 (1980), 1055	Astochite	Richterite	Am. Min. 63 (1978), 1023
Albrittonite		Min. Mag. 43 (1980), 1055	Astorite(e)	Blöðite	this paper
Aldzhanite		Min. Mag. 43 (1980), 1055	Astrakanite	Muscovite	Am. Min. 57 (1972), 993
Alkali-femaghastingsite	Sodian potassian magnesian hastingsite	Am. Min. 63 (1978), 1023	Astrolite		Min. Mag. 43 (1980), 1055
Alkali-ferrohastingsite	Sodian potassian hastingsite	Am. Min. 63 (1978), 1023	Aurocuprite		Am. Min. 62 (1977), 403
Alkali-hastingsite	Sodian potassian hastingsite to magnesian hastingsite	Am. Min. 63 (1978), 1023	Azoryprhrite	Magneso-riebeckite	Am. Min. 63 (1978), 1023
Allcharite	Goethite	Bull. Min. 92 (1969), 99	Bababudanite	Mixture	Min. Mag. 47 (1983), 411
Allemontite	Stibarsen	Min. Mag. 46 (1982), 513	Badenite		Min. Mag. 38 (1971), 103
Allevardite	Rectorite	Am. Min. 49 (1964), 446	Balavinskite		Min. Mag. 38 (1971), 103
Allopalladium	Stibiopalladinite	Am. Min. 63 (1978), 796	Barium		Min. Mag. 38 (1971), 103
Almboseite		this paper	alumopharmacosiderite		Am. Min. 63 (1978), 1023
Almerite	Natroalunite	Min. Mag. 33 (1962), 353	Barium pharmacosiderite		Am. Min. 63 (1978), 1023
Alpha-catapleite	Gaidonnayite	Can. Min. 16 (1978), 195	Barkevicite	Ferroan or ferro-pargasitic hornblende	Am. Min. 63 (1978), 1023
Almarkite		Min. Mag. 43 (1980), 1055	Barkevikite	Ferroan or ferro-pargasitic hornblende	Am. Min. 63 (1978), 1023
Aluminobetafite		Min. Mag. 36 (1967), 133	Barsanovite	Eucolite	Am. Min. 54 (1969), 1499
Alumobriholite		Min. Mag. 36 (1967), 133	Basaltic hornblende	An oxyhornblende, often ferri- or ferrian titanian (magneso- or magnesian hastingsite)	Am. Min. 63 (1978), 1023
Alumocobaltomelane		Min. Mag. 33 (1962), 261	Basaltine	Oxyhornblende + augite	Am. Min. 63 (1978), 1023
Alumoferroascharite	Mixture	Am. Min. 49 (1964), 1501	Basillite	Hausmannite + feiknechite	Am. Min. 58 (1973), 562
Ameletite	Nepheline & mixture	Min. Mag. 36 (1967), 133	Bedenite	Ferrian actinolitic hornblende	Am. Min. 63 (1978), 1023
Amiant(h)	Asbestos	Am. Min. 63 (1978), 1023	Belovite (of Nefedov)	Talmessite	this paper
Amianthinite	Asbestos	Am. Min. 63 (1978), 1023	Bergamaschite	Hastingsite	Am. Min. 63 (1978), 1023
Amianthoide	Asbestos	Am. Min. 63 (1978), 1023	Bergamaskite	Bergamaskite	Am. Min. 63 (1978), 1023
Amianthus	Asbestos	Am. Min. 63 (1978), 1023	Bergflachs	Asbestos	Am. Min. 63 (1978), 1023
Amosite	Asbestiform grunerite or anthophyllite pre 1946	Am. Min. 63 (1978), 1023	Bergfleisch	Asbestos	Am. Min. 63 (1978), 1023
Ampongabeite	Samarskite-(Y)	Min. Mag. 33 (1962), 262	Berghaar	Asbestos	Am. Min. 63 (1978), 1023
Amphibole-anthophyllite	Cummingtonite	Am. Min. 63 (1978), 1023	Berghaut	Asbestos	Am. Min. 63 (1978), 1023
Amphibolite	Hornblende	Am. Min. 63 (1978), 1023	Bergholz	Asbestos	Am. Min. 63 (1978), 1023
Analcite		Min. Mag. 43 (1980), 1053	Bergkork	Asbestos	Am. Min. 63 (1978), 1023
Anarakite		Min. Mag. 43 (1980), 1055	Bergpapier	Asbestos	Am. Min. 63 (1978), 1023
Anauxite	Kaolinite	Am. Min. 54 (1969), 206	Bergwolle	Asbestos	Am. Min. 63 (1978), 1023
Anophorite	Titanian calcian magneso-arfvedsonite	Am. Min. 63 (1978), 1023	Beryllium sodalite	Tugtupite	Am. Min. 48 (1963), 1178
Anthogranmatite	Anthophyllite	Am. Min. 63 (1978), 1023	Berylliosodalite	Tugtupite	Am. Min. 46 (1961), 241
Anthogranmite	Anthophyllite	Am. Min. 63 (1978), 1023	Beta-alumohydrocalcite		Min. Mag. 36 (1967), 133
Antholite	Anthophyllite and cummingtonite	Am. Min. 63 (1978), 1023	Beta-brocenite		Min. Mag. 43 (1980), 1055
Antholith	Anthophyllite	Am. Min. 63 (1978), 1023	Beta-lomonosovite		Min. Mag. 36 (1967), 133
Anthophylline	Anthophyllite	Am. Min. 63 (1978), 1023	Bialite	Wavellite	Min. Mag. 37 (1969), 123
Anthophyllite rayonné	Anthophyllite	Am. Min. 63 (1978), 1023	Bidalotite	Gedrite	Am. Min. 63 (1978), 1023
			Bisbeeite	Chrysocoolla	Min. Mag. 43 (1980), 1054
			Biteplapalladite	Mercenskyite	this paper

Continued

APPENDIX TABLE 1. MINERAL NAMES DISCREDITED BY THE CNMMN (NOT TO BE USED IN PUBLICATIONS) AND APPROVED MINERAL NAME (IF ANY) THAT MAY BE USED IN PUBLICATIONS—*Continued*

Discredited name	Approved name	Reference	Discredited name	Approved name	Reference
Bitplatinites	Moncheite	this paper	Diathene	Cyanite/kyanite	this paper
Blanchardite	Brochantite	Am. Min. 58 (1973), 562	Dixeyite		Min. Mag. 33 (1962), 261
Blende	Spalerite	Min. Mag. 43 (1980), 1053	Djalmaite	Uranmicrolite	Am. Min. 62 (1977), 403
Blödsite	Blödsite	Min. Mag. 33 (1962), 263	Dosulite		Min. Mag. 43 (1980), 1055
Biomstrandite	Uranpyrochlore	Am. Min. 62 (1977), 403	Doverite		Min. Mag. 33 (1962), 261
Boleslavite		Min. Mag. 36 (1967), 133	Doverite	Synchysite-(Y)	Am. Min. 51 (1966), 152
Boodite	Heterogenite	Min. Mag. 33 (1962), 253	Droogmansite	Kasolite	Bull. Min. 101 (1978), 56
Borgnieszite	Sodian amphibole	Am. Min. 63 (1978), 1023	Dzhezkazganite		Min. Mag. 36 (1967), 133
Borickiyite		this paper	Eardleyite		Am. Min. 62 (1977), 458
Breadalbanite	Hornblende	Am. Min. 63 (1978), 1023	Ebelmenite	Cryptomelane	Min. Mag. 46 (1982), 513
Broceniite	Fergusonite-beta-(Ce)	Min. Mag. 43 (1980), 1055	Eckrite	Winchite	Am. Min. 63 (1978), 1023
Bromyrite	Bromaryrite	Min. Mag. 43 (1980), 1053	Eggonite	Kolbeckite	this paper
Brostenite	Birmessite + todorokite	Min. Abst. 74-3408	Eisenrichterite	Ferro-richterite	Am. Min. 63 (1978), 1023
Buryktalskite		Min. Mag. 33 (1962), 261	Ektropite	Caryopillite	Am. Min. 49 (1964), 446
Byssolite	Asbestos	Am. Min. 63 (1978), 1023	Ellsworthite	Uranpyrochlore	Am. Min. 62 (1977), 403
Cacoclasite	Mixture	Am. Min. 52 (1967), 929	Ellweillerite		Min. Mag. 33 (1962), 261
Calafatite	Alunite	Am. Min. 48 (1963), 1184	Elroquite	Mixture	Am. Min. 48 (1963), 1421
Calamine	Hemimorphite	Min. Mag. 43 (1980), 1053	Endeolite	Impure pyrochlore	Am. Min. 62 (1977), 403
Calamite	Tremolite	Am. Min. 63 (1978), 1023	Epidesmine	Stilbite	Am. Min. 53 (1968), 1066
Calciosamaraskite	Uranian ytropyrochlore	Am. Min. 62 (1977), 403	Epigenite	Mixture	Min. Mag. 47 (1983), 411
Calcioantalite	Mixture	Min. Mag. 38 (1972), 765	Epianthinite	Schoepite	Min. Mag. 33 (1962), 262
Calcium-larsenite	Esperite	Am. Min. 50 (1965), 1170	Erubescite	Bornite	Min. Mag. 43 (1980), 1053
Calcium-rinkite	Gotzenite	Min. Mag. 33 (1962), 262	Exilite	Valentinite	Min. Mag. 43 (1980), 1053
Calciumhilgardite-2M(Co)		Min. Mag. 33 (1962), 261	Fahlert	Tetrahedrite	Min. Mag. 43 (1980), 1053
Calciumhilgardite-3Tc		Min. Mag. 33 (1962), 261	Fairbanksite		Min. Mag. 36 (1968), 1144
Carinthine	Hornblende	Am. Min. 63 (1978), 1023	Fasciculite	Hornblende	Am. Min. 63 (1978), 1023
Carnevallite		Min. Mag. 43 (1980), 1055	Feldspath	Feldspar	Min. Mag. 43 (1980), 1053
Carphosiderite	Hydronium jarosite	this paper	Felapar	Feldspar	Min. Mag. 43 (1980), 1053
Carystine	Asbestos	Am. Min. 63 (1978), 1023	Femaghastingsite	Magnesian hastingsite	Am. Min. 63 (1978), 1023
Castangite		Min. Mag. 36 (1967), 133	Femolite		Min. Mag. 36 (1967), 133
Cataforite	Katophorite	Am. Min. 63 (1978), 1023	Fenghuangite		Min. Mag. 33 (1962), 261
Cataphorite	Katophorite	Am. Min. 63 (1978), 1023	Fengluanite	Isomertiteite	Am. Min. 65 (1980), 408
Catophorite	Katophorite	Am. Min. 63 (1978), 1023	Feranthophyllite	Ferro-anthophyllite	Am. Min. 63 (1978), 1023
Celestine	Celestine	Min. Mag. 43 (1980), 1053	Ferri-edenite	Ferro-edenite	Am. Min. 63 (1978), 1023
Cerargyrite	Chlorargyrite	Min. Mag. 43 (1980), 1053	Ferri-tremolite	Ferri-ferro-actinolite	Am. Min. 63 (1978), 1023
Cerolite	Serpentine + stevensite	Am. Min. 50 (1965), 2111	Ferrian pargasite	Sodian manganos magnesian hastingsite	Am. Min. 63 (1978), 1023
Cerphosphorhuttonite		Min. Mag. 36 (1968), 1144	Ferriglaucophane	Magnesian riebeckite	Am. Min. 63 (1978), 1023
Ceruranopyrochlore	Cerian pyrochlore	Am. Min. 62 (1977), 403	Ferridredite	Ferri-gedrite	Am. Min. 63 (1978), 1023
Chalcolamprite	Impure pyrochlore	Am. Min. 62 (1977), 403	Ferripumpellyite	Ferripumpellyite-(Mg)	Can. Min. 12 (1973), 219
Chalcolite	Torbernite	Min. Mag. 43 (1980), 1053	Ferririchterite	Manganos magnesian-arfvedsonite	Am. Min. 63 (1978), 1023
Challantite	Ferricopiapite	Can. Min. 23 (1965), 53			
Chalybite	Siderite	Min. Mag. 43 (1980), 1053	Ferro-tremolite	Ferro-actinolite	Am. Min. 63 (1978), 1023
Chengbolite	Moncheite	Min. Mag. 43 (1980), 1055	Ferroalunite		Min. Mag. 36 (1968), 1144
Chernyshevite	Sodian amphibole	Am. Min. 63 (1978), 1023	Ferrobabingtonite		Min. Mag. 38 (1971), 103
Chessylite	Azurite	Min. Mag. 43 (1980), 1053	Ferrofillowite	Johnsomervilleite	this paper
Chiklita	Manganos ferri-ferro-richterite	Am. Min. 63 (1978), 1023	Ferrohalotrichite		Min. Mag. 43 (1980), 1055
Chile-loewite	Humberstonite	Min. Abst. 70-1634	Ferrohastingsite	Hastingsite	Am. Min. 63 (1978), 1023
Chlorarsenian	Allactite	Am. Min. 58 (1973), 562	Ferrolizardite		Min. Mag. 36 (1968), 1144
Chlorhastingsite		Min. Mag. 38 (1971), 103	Ferroplatinum	Pt-Fe alloy	Can. Min. 13 (1975), 117
Chloropal	Nontronite	Min. Mag. 43 (1980), 1053	Ferropumpellyite	Pumpellyite-(Fe ²⁺)	Can. Min. 12 (1973), 219
Chlorotile	Agardite-(Y)	Min. Mag. 37 (1970), 954	Ferrosulphurite	Langbanite	Am. Min. 53 (1968), 1779
Chromdiathene		Min. Mag. 38 (1971), 103	Ferutite	Davidite-(La)	Am. Min. 49 (1964), 447
Chrome-tremolite	Tremolite or actinolite	Am. Min. 63 (1978), 1023	Ferromineral		Min. Mag. 43 (1980), 1055
Chromophlogopite	Phlogopite	Min. Mag. 43 (1980), 1055	Fluochlore	Pyrochlore	Am. Min. 62 (1977), 403
Chromium	Phoenicochroite	Bull. Min. 95 (1972), 427	Forbesite	Cobalto annabergite + arsenolite	Can. Min. 14 (1976), 414
Chromsteigerite		Min. Mag. 36 (1967), 133	Foresite	Mixture	Min. Mag. 33 (1962), 262
Cl-Tyretskite	Hilgardite-1Tc	Am. Min. 70 (1985), 636	Foucherite	this paper	Am. Min. 70 (1985), 1059
Clino-anthophyllite	Magnesian-cumingtonite	Am. Min. 63 (1978), 1023	Freyalite	Mixture	Min. Mag. 43 (1979), 99
Clinoeulite	Clinoferrosilite	this paper	Frigidite	Mixture	Min. Mag. 33 (1962), 262
Clinoakupferite	Cumingtonite	Am. Min. 63 (1978), 1023	Gajite	Calcite + brucite	Min. Mag. 36 (1967), 133
Clinostrangite	Phosphosiderite	Min. Mag. 43 (1980), 1053	Galenobornite		Am. Min. 63 (1978), 1023
Clinovariscite	Metavariscite	Min. Mag. 43 (1980), 1053	Gamsigradite	Manganos (magnesian-hornblende or edenite)	Am. Min. 63 (1978), 1023
Cobalt-frobergite	Frobergite	this paper	Gastaldite	Glaucophane	Am. Min. 63 (1978), 1023
Cobaltocalcite	Spherochalcite	Min. Mag. 43 (1980), 1053	Gearksite	Gearksite	Min. Mag. 33 (1962), 262
Cobaltomelane		Min. Mag. 33 (1962), 261	Gelzircon		Min. Mag. 36 (1967), 133
Cocinerite	Mixture	Am. Min. 52 (1967), 1214	Gersbyrite		Min. Mag. 36 (1968), 1144
Columbomicrocline	Pyrochlore	Am. Min. 62 (1977), 403	Globertite	Lazulite	Am. Min. 49 (1964), 1778
Cossyrite	Aenigmatite	Am. Min. 49 (1964), 821	Girnarite	Magnesian	Min. Mag. 43 (1980), 1053
Craigite		Min. Mag. 43 (1980), 1055		Subsilicic titanian sodian magnesian hastingsite	Am. Min. 63 (1978), 1023
Crocidolite	Asbestiform riebeckite	Am. Min. 63 (1978), 1023	Glockerite	Lepidocrocite	Amer. Min. 62 (1977), 599
Cryptonickelmelelane		Min. Mag. 33 (1962), 261	Glottalite	Glottalite	Min. Mag. 33 (1962), 262
Cuproartinite		Am. Min. 67 (1982), 156	Goongarrite	Cosalite + galena	Am. Min. 49 (1964), 1501
Cuprohydroxymagnesite		Am. Min. 67 (1982), 156	Goursite	Narsarsukite	Am. Min. 46 (1961), 1521
Cuprouranite	Torbernite	Min. Mag. 43 (1980), 1053	Grammatit-strahlstein	Tremolite	Am. Min. 63 (1978), 1023
Cycloallastonite		Min. Mag. 43 (1980), 1055	Grammatite	Tremolite	Am. Min. 63 (1978), 1023
Daschkensanit	Chlor potassian hastingsite	Am. Min. 63 (1978), 1023	Griqualandite	Crocidolite	Am. Min. 63 (1978), 1023
Daszke(s)sanite	Chlor potassian hastingsite	Am. Min. 63 (1978), 1023	Grossularite	Grossularite	Min. Mag. 43 (1980), 1053
Dayingite		Min. Mag. 43 (1980), 1055	Grothine	Norbergite	Min. Rec. 12 (1981), 377
Dehnlite	Carbonat fluorapatite	Min. Mag. 42 (1978), 282	Grunerite	Grunerite	Am. Min. 63 (1978), 1023
Delatorreite	Todorokite	Min. Mag. 33 (1962), 262	Grunlingite	Joseite A / Bismuthinite	Am. Min. 67 (1982), 855
Delorenzite	Tantexenite	Min. Mag. 33 (1962), 262	Guanglinit		Min. Mag. 43 (1980), 1055
Deltaite	Mixture	Min. Mag. 33 (1962), 262	Gutsevichite		Min. Mag. 33 (1962), 261
Desmine	Stilbite	Min. Mag. 43 (1980), 1053	Haddamite	Microcline	Am. Min. 62 (1977), 403
Devillite	Devilline	Min. Mag. 43 (1980), 1053	Haematite	Hematite	Min. Mag. 43 (1980), 1053
Deweyite	Mixture	Am. Min. 47 (1962), 811	Hanleite	Uvarovite	Min. Mag. 33 (1963), 508
Dhanrasite		Min. Mag. 38 (1971), 103	Hatchettolite	Uranpyrochlore	Am. Min. 62 (1977), 403
Dialogite	Rhodochrosite	Min. Mag. 43 (1980), 1053	Heikkolite	Crossite	Am. Min. 63 (1978), 1023
Diastatite	Hornblende	Am. Min. 63 (1978), 1023	Heikolite	Crossite	Am. Min. 63 (1978), 1023
Didymolite	Phylloclase	Am. Min. 50 (1965), 2111			
Dillinite	Zunyite	Am. Min. 46 (1961), 1519			

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Discredited name	Approved name	Reference	Discredited name	Approved name	Reference
Henwoodite	Turquoise	Am. Min. 46 (1961), 1520	Kymatine	Asbestos	Am. Min. 63 (1978), 1023
Herrengrundite	Devilline	Min. Mag. 43 (1980), 1053	Labrador hornblende	Orthopyroxene	Am. Min. 63 (1978), 1023
Heterotype	Amphibole + pyroxene	Am. Min. 63 (1978), 1023	Lamprobolite	Oxyhornblende	Am. Min. 63 (1978), 1023
Heubachite	Nickelian heterogenite	Min. Mag. 33 (1962), 253	Lamprostibian	Melanostibian	Am. Min. 53 (1968), 1779
Hexabolit	Oxyhornblende	Am. Min. 63 (1978), 1023	Laneite	Ferroan or ferro-pargasitic hornblende	Am. Min. 63 (1978), 1023
Hexagonite	Manganooan tremolite	Am. Min. 63 (1978), 1023	Lavrovite	Chromian diopside	N. Jb. Min., Mh. (1979), 189
Hexastibiopalladite	Sudburyite	Min. Mag. 43 (1980), 1055	Lazareviciite		Min. Mag. 33 (1962), 261
Hillängsita	Dannemorite	Am. Min. 63 (1978), 1023	Leonhardite	Starkeyite	Min. Rec. 6 (1975), 144
Höferite	Chapmanite	Am. Min. 50 (1965), 2110	Lesserite	Inderite	Min. Mag. 33 (1962), 262
Höpfnerite	Tremolite	Am. Min. 63 (1978), 1023	Lewistonite	Carbonatian fluorapatite	Min. Mag. 42 (1978), 282
Högveite	Thalenite-(Y)	Min. Mag. 38 (1971), 102	Linosite	Ferri- or ferrian oxy-kaersutite	Am. Min. 63 (1978), 1023
Holzschbest	Asbestos	Am. Min. 63 (1978), 1023	Lithionglaukophan	Hölmquistite	Am. Min. 63 (1978), 1023
Hongguite	this paper		Lithium-amphibole	Lithian amphibole, hölmquistite and clinohölmquistite	Am. Min. 63 (1978), 1023
Hornites	Hastingsite	Min. Mag. 33 (1962), 261	Liujinyinite	Uytenboerdite	this paper
Hudsonite	Gibbsite	Am. Min. 63 (1978), 1023	Lodochnikite	Brannerite	Am. Min. 48 (1963), 1419
Hydrargillite		Min. Mag. 43 (1980), 1053	Lorettoite		Am. Min. 64 (1979), 1303
Hydroaemesite		Min. Mag. 33 (1962), 261	Macrocraolinite		Min. Mag. 43 (1980), 1055
Hydrocalcite		Min. Mag. 43 (1980), 1055	Manganophyllite	Magnesian-anthophyllite	Am. Min. 63 (1978), 1023
(of Marschner)			Magnesia-arfvedsonite	Magnesian-arfvedsonite	Am. Min. 63 (1978), 1023
Hydrocastrite	Mixture	Min. Mag. 33 (1962), 262	Magnesian glaucophane	Glaucophane	Am. Min. 63 (1978), 1023
Hydrocatapleite		Min. Mag. 36 (1967), 133	Magnesiolauumontite		Min. Mag. 36 (1967), 133
Hydrocerite		Min. Mag. 33 (1962), 261	Magnesium anthophyllite	Magnesian-anthophyllite	Am. Min. 63 (1978), 1023
Hydrochlore	Pyrochlore	Am. Min. 62 (1977), 403	Magnetostibian		Min. Mag. 33 (1962), 261
Hydrocyanite	Chalcocyanite	this paper	Magnoborite	Jacobsite	Am. Min. 58 (1973), 562
Hydrohalloysite		Min. Mag. 36 (1967), 133	Magnodravite	Suanite	Am. Min. 48 (1963), 915
Hydrokassite		Min. Mag. 36 (1968), 1144	Magnophorite		Min. Mag. 36 (1968), 1144
Hydromalysite		Min. Mag. 36 (1968), 1144		Titanian potassian richterite	Am. Min. 63 (1978), 1023
Hydronaujakasite		Min. Mag. 38 (1971), 103	Maigruen		Min. Mag. 43 (1980), 1055
Hydropyrochlore	Altered pyrochlore	Am. Min. 62 (1977), 403	Mangan amphibole	Rhodonite	Am. Min. 63 (1978), 1023
Hydrorinkite		Min. Mag. 43 (1980), 1055	Manganandalusite	Manganooan andalusite	this paper
Hydrosericite		Min. Mag. 36 (1968), 1144	Mangan crocidolite	Manganooan riebeckite	Am. Min. 63 (1978), 1023
Hydrosodalite		Min. Mag. 33 (1962), 261	Mangan krokidolith	Manganooan riebeckite	Am. Min. 63 (1978), 1023
Hydrougrandite		Min. Mag. 36 (1967), 133	Mangan-actinolite	Manganooan actinolite	Am. Min. 63 (1978), 1023
Hydroxyl-ascharite		Min. Mag. 36 (1968), 1144	Mangan-tremolite	Manganooan tremolite	Am. Min. 63 (1978), 1023
Hydroxyl-szajbelyite		Min. Mag. 36 (1968), 1144	Mangan-anthophyllite	Tirodite	Am. Min. 63 (1978), 1023
Idocrase	Vesuvianite	this paper	Manganomelane	Psilomelane	Min. Mag. 46 (1982), 513
Igalikite	Analcime + muscovite	Min. Mag. 33 (1962), 262	Manganomossite	Manganocolumbite	Min. Mag. 33 (1962), 262
Igdloite	Lueshite	Min. Mag. 33 (1962), 261	Manganosteenstrupine		Min. Mag. 33 (1962), 261
Imerinite	Magnesian-arfvedsonite	Am. Min. 63 (1978), 1023	Manganseverginite		Am. Min. 38 (1971), 103
Ingreite		Min. Mag. 36 (1967), 133	Manganatopiolite	Manganatopiolite	Am. Min. 70 (1985), 217
Iodyrite	Iodargyrite	Min. Mag. 43 (1980), 1053	Manganuralite	Manganooan magnesian-arfvedsonite	Am. Min. 63 (1978), 1023
Iron-anthophyllite	Ferro-anthophyllite	Am. Min. 63 (1978), 1023	Marignacite	Cerriopyrochlore-(Ce)	Am. Min. 62 (1977), 403
Iron-hornblende	Oxy-manganooan potassian ferrian ferro-hornblende	Am. Min. 63 (1978), 1023	Marmakrolite	Manganooan richterite	Am. Min. 63 (1978), 1023
Iron-richterite	Ferro-richterite	Am. Min. 63 (1978), 1023	Matorolite		Min. Mag. 38 (1971), 103
Isabellite	Richterite	Am. Min. 63 (1978), 1023	Mbozite	Potassian taraxite	Am. Min. 63 (1978), 1023
Ishiganeite	Cryptomelane + birnessite	Am. Min. 49 (1964), 448	Melacoonite	Chrysocolla + mica	Am. Min. 54 (1969), 994
Isoplatinocopper		Min. Mag. 43 (1980), 1055	Melnikovite	Tenorite	Min. Mag. 43 (1980), 1053
Isowolframite		Min. Mag. 43 (1980), 1055	Mendelejevite	Greigite	Min. Mag. 46 (1982), 513
Jenkinsite	Ferroan antigorite	Am. Min. 47 (1962), 783	Mendelyevite	Betafite	Am. Min. 62 (1977), 403
Ježekite	Morinite	Am. Min. 47 (1962), 398	Metajenette	Betafite	Am. Min. 62 (1977), 403
Jiningite		Min. Mag. 33 (1962), 261	Metalliebite		Min. Mag. 36 (1968), 1144
Johnstonite	Spessartine	Am. Min. 53 (1968), 1065	Metalomonosovite	Beta-lomonosovite	Am. Min. 48 (1963), 1433
Juddite	Manganooan magnesian-arfvedsonite	Am. Min. 63 (1978), 1023	Metamurmanite		Min. Mag. 36 (1967), 133
Julgoldite	Julgoldite-(Fe ²⁺)	Can. Min. 12 (1973), 219	Metastimponite	Microlite	Am. Min. 62 (1977), 403
Kalamite	Tremolite	Am. Min. 63 (1978), 1023	Metastrengite	Phosphosiderite	Min. Mag. 43 (1980), 1053
Kalio-magnesian-kataphorit	Titanian potassian richterite	Am. Min. 63 (1978), 1023	Mindigite	Heterogenite	Min. Mag. 33 (1962), 253
Kamarexite	Brochantite	Am. Min. 50 (1965), 1450	Minguettite	Stilpnomelane	Am. Min. 54 (1969), 1223
Kanakaite		Min. Mag. 46 (1982), 514	Miomirite		Min. Mag. 43 (1980), 1055
Karinthin	Hornblende, often parasitic hornblende	Am. Min. 63 (1978), 1023	Miropolskite	Arsenopyrite	Min. Mag. 43 (1980), 1055
Karpinskyite	Mixture	Am. Min. 57 (1972), 1006	Mispickel		Min. Mag. 43 (1980), 1053
Khalopinite	Samarskite-(Y)	Am. Min. 57 (1972), 329	Miyashiroite		Min. Mag. 36 (1968), 1144
Khamite	Iranite	Am. Min. 61 (1976), 186	Mohsite	Crichtonite	Can. Min. 17 (1979), 635
Kidney stone	Actinolite	Am. Min. 63 (1978), 1023	Montasite	Asbestiform grunerite	Am. Min. 63 (1978), 1023
Kievite	Quamingtonite	Am. Min. 63 (1978), 1023	Montdorite	this paper	
Killinite	Hydromuscovite	Min. Mag. 48 (1984), 566	Mossite	Tantalian ferrocolumbite	Min. Mag. 43 (1979), 553
Kirwanite	Impure altered hornblende	Am. Min. 63 (1978), 1023	Mountain wood	Asbestos	Am. Min. 63 (1978), 1023
Kivuite		Min. Mag. 33 (1962), 261	Mozambikite		Min. Mag. 33 (1962), 261
Kleberite	this paper		Mrazekite		Min. Mag. 43 (1980), 1055
Klipsteinite	Neotocite	Min. Mag. 42 (1978), 279	Mumbai	Plumbomicrolite	Am. Min. 62 (1977), 403
Knaite		Min. Mag. 36 (1967), 133	Munkforsite	Manganiferous apatite	Am. Min. 49 (1964), 1778
Knipovichite	Alumohydrocalcite	Am. Min. 61 (1976), 341	Munkrudite	Cyanite/Kyanite	Am. Min. 49 (1964), 1778
Kokscharovite	Ebenitic amphibole	Am. Min. 63 (1978), 1023	Murgocite		Min. Mag. 43 (1980), 1055
Kokscharowit	Ebenitic amphibole	Am. Min. 63 (1978), 1023	Nakasite		Min. Mag. 33 (1962), 261
Kolskite	Lizardite + sepiolite	Am. Min. 59 (1974), 212	Namaqualite	Cyanotrichite	Min. Mag. 32 (1961), 737
Koppite	Pyrochlore	Am. Min. 62 (1977), 403	Natrongrammatit	Richterite	Am. Min. 63 (1978), 1023
Kozhanovite	Karnasurtite	Min. Mag. 33 (1962), 262	Natronrichterite	Manganooan richterite	Am. Min. 63 (1978), 1023
Krokidolite	Crocidolite	Am. Min. 63 (1978), 1023	Naudroite	Alkali amphibole	Am. Min. 63 (1978), 1023
Krokodyolith	Crocidolite	Am. Min. 63 (1978), 1023	Nenadkevite	Mixture	Am. Min. 62 (1977), 1261
Kupfferite	Magnesian-anthophyllite	Am. Min. 63 (1978), 1023	Neodigenite	Digenite	Min. Mag. 43 (1980), 1053
(Allen & Clement)			Neotantalite	Microlite	Am. Min. 62 (1977), 403
Kupfferite (Hermann)	Chromian anthophyllite	Am. Min. 63 (1978), 1023	Nephrite	Actinolite	Am. Min. 63 (1978), 1023
Kupfferite (Koksharov)	Chromian anthophyllitic amphibole	Am. Min. 63 (1978), 1023	Niccolite	Nickeline	Min. Mag. 43 (1980), 1053
Kurgantaita	Strontian tyretskite + celestine	Min. Mag. 46 (1982), 514	Nickelmelelane		Min. Mag. 33 (1962), 261
Kusuite	Wakefieldite-(Ce)	Bull. Min. 109 (1986), 30	Nickelite	Nickeline	Min. Mag. 43 (1980), 1053
Kyanophyllite	Paragonite + muscovite	Am. Min. 58 (1973), 807	Niobozirconolite	Zirkelite	Am. Min. 62 (1977), 403

Continued

APPENDIX TABLE 1. MINERAL NAMES DISCREDITED BY THE CNMMN (NOT TO BE USED IN PUBLICATIONS) AND APPROVED MINERAL NAME (IF ANY) THAT MAY BE USED IN PUBLICATIONS—*Continued*

Discredited name	Approved name	Reference	Discredited name	Approved name	Reference
Niobipyrrochlore	Pyrrochlore	Am. Min. 62 (1977), 403	Rutherfordite	Rutherfordine	Min. Mag. 43 (1980), 1053
Niobantalpyrrochlore	Pyrrochlore/microlite	Am. Min. 62 (1977), 403	Salmonite	Bureaulite + jahnsite	Min. Mag. 42 (1978), 309
Nitroglauberite	Darapskite	Am. Min. 55 (1970), 776	Samiresite	Plumbian uranpyrrochlore	Am. Min. 62 (1977), 403
Noonkanbahite		Min. Mag. 36 (1968), 1144	Sangarite		Min. Mag. 36 (1967), 133
Noralite	Ferro-hornblende	Am. Min. 63 (1978), 1023	Scheibite (of Mücke)	Phoenicochroite	Am. Min. 56 (1971), 359,
Nordenskiöldite	Tremolite	Am. Min. 63 (1978), 1023	Scheteligite		Am. Min. 62 (1977), 403
Nuolaitite	Mixture	Am. Min. 62 (1977), 403	Schneiderite	Schmiederite	Min. Mag. 43 (1980), 1054
Obruchevite	Yttropyrochlore	Am. Min. 62 (1977), 403	Schoenite	Picromerite	this paper
Octahedrite	Anatase	Min. Mag. 43 (1980), 1053	Schönite	Picromerite	this paper
Oligiste	Hematite	Min. Mag. 43 (1980), 1053	Schuchardtite	Vermiculite-chlorite	Am. Min. 64 (1979), 1334
Olovotantalite		Min. Mag. 36 (1967), 133	Schulzenite	Cuprian heterogenite	Min. Mag. 33 (1962), 253
Ondrejite	Huntite + magnesite	Am. Min. 49 (1964), 1502	Sebesite	Tremolite	Am. Min. 63 (1978), 1023
Opsinose	Neotocite	Min. Mag. 42 (1978), 279	Selenjoseite	Laitakarite	Am. Min. 498 (1963), 1421
Orizite	Epistilbite	Am. Min. 57 (1972), 592	Septetalc-chlorite	Baumite	Am. Min. 61 (1976), 174
Ornblende	Hornblende	Am. Min. 63 (1978), 1023	Shachialite	this paper	
Orthite	Allanite	this paper	Shentulite		Min. Mag. 33 (1962), 261
Ortho-armalcolite		Min. Mag. 43 (1980), 1055	Silbšlite	Actinolite	Am. Min. 63 (1978), 1023
Ortholomonosovite	Lomonosovite	Am. Min. 48 (1963), 1413	Silfbergite	Dannemorite	Am. Min. 63 (1978), 1023
Orthorhombic lamprophyllite		Min. Mag. 36 (1968), 1144	Silicite-wiikite	Mixture	Am. Min. 62 (1977), 403
Orthorhombic lävenite		Min. Mag. 36 (1968), 1144	Silicomanganberzeliite		Min. Mag. 36 (1968), 1144
Orthoriebeckite	Riebeckite	Am. Min. 63 (1978), 1023	Silicomazite		Min. Mag. 43 (1980), 1055
Orthose	Orthoclase	Min. Mag. 43 (1980), 1053	Silicohabbophane		Min. Mag. 36 (1967), 133
Orthozoisite		Min. Mag. 38 (1971), 103	Sillbšlite	Actinolite	Am. Min. 63 (1978), 1023
Oryzite	Epistilbite	Am. Min. 57 (1972), 592	Simpsonite	Titanian potassium richterite	Am. Min. 63 (1978), 1023
Osannite	Riebeckite	Am. Min. 63 (1978), 1023	Sjögrufvite	Caryinite	Am. Min. 58 (1973), 562
Osumilite-(K,Mg)		Min. Mag. 43 (1980), 1055	Slavyanskite	Tunisite	Z.V.M.O. 110 (1981), 96
Oxyferropumpellyite	Pumpellyite-(Fe ³⁺)	Can. Min. 12 (1973), 219	Smaragditite	Actinolite or hornblende	Am. Min. 63 (1978), 1023
Oxyjulgoldite	Julgoldite-(Fe ³⁺)	Can. Min. 12 (1973), 219	Smaragditic granmatite	Tremolite	Am. Min. 63 (1978), 1023
Palladiumarsenostannide	this paper		Smaragditic tschermakite	Tschermakite or tscher-makitic hornblende	Am. Min. 63 (1978), 1023
Panabase	Tetrahedrite	Min. Mag. 43 (1980), 1053	Sobotkite	Saponite	this paper
Pandaite	Barioyrrochlore	Am. Min. 62 (1977), 403	Soda	Natron	Min. Mag. 43 (1980), 1053
Para-armalcolite		Min. Mag. 43 (1980), 1055	Soda asbestos	Magnesio-arfvedsonite	Am. Min. 63 (1978), 1023
Para-boleite		Min. Mag. 43 (1980), 1055	Soda hornblende	Arfvedsonite	Am. Min. 63 (1978), 1023
Parahilgardite	Hilgardite-37 ₀	Am. Min. 70 (1985), 636	Soda nitre	Nitratine	Min. Mag. 43 (1980), 1053
Parapectolite		Min. Mag. 43 (1980), 1055	Soda nitre	Nitratine	Min. Mag. 43 (1980), 1053
Paraphane		Min. Mag. 36 (1968), 1144	Soda richterite	Manganose richterite	Am. Min. 63 (1978), 1023
Parastrengite		Min. Mag. 43 (1980), 1055	Soda tremolite	Richterite	Am. Min. 63 (1978), 1023
Paravariscite		Min. Mag. 43 (1980), 1055	Sodium phlogopite		this paper
Parawollastonite		Min. Mag. 33 (1962), 263	Sokolovite		Min. Mag. 33 (1962), 261
Paultite		Min. Mag. 33 (1962), 261	Soretite	Magnesian hastingsite	Am. Min. 63 (1978), 1023
Pendletonite	Carpathite	Am. Min. 54 (1969), 329	Spencite	Tritomite-(Y)	Am. Min. 51 (1966), 152
Penwithite	Neotocite	Min. Mag. 42 (1978), 279	Spessartite	Spessartine	Min. Mag. 43 (1980), 1053
Phraconite	Davyne	Min. Mag. 43 (1980), 1055	Speziatite	Hornblende	Am. Min. 63 (1978), 1023
Phillipstadite	Ferrian ferro-hornblende	Am. Min. 63 (1978), 1023	Sphaerocobaltite	Sphaerocobaltite	Min. Mag. 43 (1980), 1053
Phosphocromite	Ferrian variscite	Am. Min. 48 (1963), 1421	Sphene	Titanite	Min. Mag. 46 (1982), 513
Phosphothorogummitite		Min. Mag. 38 (1971), 103	Stannoluzonite		Min. Mag. 36 (1967), 133
Pianilitite		this paper	Sterretite	Kolbeckite	this paper
Picroamosite	Ferrian antophyllite	Am. Min. 63 (1978), 1023	Stibiodufrenoyisite		Min. Mag. 38 (1971), 103
Piedmontite	Piemontite	Min. Mag. 43 (1980), 1053	Stibiomicrolite	Mixture	Am. Min. 62 (1977), 403
Pillinite	Bavenite	Min. Mag. 33 (1962), 262	Stibiopearceite	Antimonpearceite	this paper
Pillite	Actinolite pseudomorph	Am. Min. 63 (1978), 1023	Stipoverite		Min. Mag. 36 (1967), 133
Pleonectite	Hedyphane	Am. Min. 58 (1973), 562	Strahlstein	Actinolite	Am. Min. 63 (1978), 1023
Pleurasite	Mixture	Am. Min. 58 (1973), 562	Stratopeite	Neotocite	Min. Mag. 42 (1978), 279
Plinthite	Mixture	Min. Mag. 33 (1962), 262	Strelite	Actinolite or antophyllite	Am. Min. 63 (1978), 1023
Plumalsite		Min. Mag. 38 (1971), 103	Strontiohilgardite	Strontian tyretskite	Min. Mag. 46 (1982), 514
Plumangite		Min. Mag. 43 (1980), 1055	Strontiohilgardite-77 ₀		Min. Mag. 33 (1962), 261
Plumboallophane		Min. Mag. 38 (1971), 103	Strontium thomsonite		Min. Mag. 36 (1968), 1144
Plumbozinocalcicite		Min. Mag. 46 (1982), 513	Subglaucofane	Crossite	Am. Min. 63 (1978), 1023
Pollianite	Pyrolusite	Can. Min. 13 (1975), 117	Sukalaitite	Stannomicrolite	Am. Min. 62 (1977), 403
Polyxene		Am. Min. 49 (1964), 1501	Sulphate-monazite		Min. Mag. 36 (1967), 133
Pravdite	Altered britholite	Am. Min. 51 (1966), 152	Sulunite		Min. Mag. 33 (1962), 261
Prorite	Aeschynite-(Y)	Am. Min. 63 (1978), 1023	Sundiisite		Min. Mag. 36 (1968), 1144
Prismatic schillerspar	Anthophyllite	Min. Mag. 36 (1967), 133	Sungulite	Lizardite + sepiolite	Am. Min. 59 (1974), 212
Protopartzite		Min. Mag. 38 (1971), 103	Svidneite	Oxy magnesio-riebeckite	Am. Min. 63 (1978), 1023
Pseudo-aenigmatite		Min. Mag. 36 (1968), 1144	Svitalskite	Celadonite	Am. Min. 63 (1978), 796
Pseudodautunite		Min. Mag. 36 (1968), 1144	Syntgammatite (Troger, 1952)	Titanian hastingsite	Am. Min. 63 (1978), 1023
Pseudoglaucophane	Glaucofane or crossite	Am. Min. 63 (1978), 1023	Szechenyiite		Am. Min. 63 (1978), 1023
Pseudoixiolite	Ixiolite	Can. Min. 14 (1976), 540	Szechonyit	Richterite	Am. Min. 63 (1978), 1023
Pseudomesolite	Mesolite	Min. Mag. 49 (1985), 103	Taaffeite-97	Musgrivite	Am. Min. 69 (1984), 215
Pseudonatrolite	Mordenite	Min. Mag. 33 (1962), 262	Taiyite	Aeschynite-(Y)	Min. Mag. 43 (1980), 1055
Psilomelane	Romanechite	Min. Mag. 46 (1982), 513	Tangaite	Redondite	Am. Min. 49 (1964), 445
Pumpellyite	Pumpellyite-(Mg)	Can. Min. 12 (1973), 219	Tanganite		Am. Min. 62 (1977), 403
Pyrochlore-microlite	Pyrochlore or microlite	Am. Min. 62 (1977), 403	Tantalbetafite	Betafite	Am. Min. 62 (1977), 403
Pyrochlore-wiikite	Mixture	Am. Min. 62 (1977), 403	Tantalhatchettolite	Uranmicrolite	Am. Min. 62 (1977), 403
Pyrrhite		Am. Min. 62 (1977), 403	Tantalobruceveite		Am. Min. 62 (1979), 403
Pyrrhoarsenite	Berzeliite	Am. Min. 58 (1973), 562	Tantalpyrochlore	Microlite	Am. Min. 62 (1977), 403
Raphilite	Tremolite	Am. Min. 63 (1978), 1023	Tantalum		Am. Min. 47 (1962), 786
Raphisiderite	Hematite	Am. Min. 53 (1968), 1060	Tanzanite		Min. Mag. 43 (1980), 1055
Retinosidibian		Bull. Min. 97 (1974), 520	Taprobanite	Taaffeite	Min. Mag. 46 (1982), 514
Revoredite		Min. Mag. 33 (1962), 262	Tarasovite		Am. Min. 67 (1982), 394
Rezhikite	Magnesio-riebeckite or magnesio-arfvedsonite	Min. Mag. 33 (1962), 261	Tatarkaitite	Ripidolite	Am. Min. 50 (1965), 2111
Rhenium		this paper	Tavistockite	Apalite	Min. Mag. 37 (1969), 123
Rhodarsenian	Rhodonite	Am. Min. 58 (1973), 562	Taylorite	Ammonian arcanite	Can. Min. 23 (1985), 259
Rhodusite	Magnesio-riebeckite	Am. Min. 63 (1978), 1023	Teremkovite		Min. Mag. 38 (1971), 103
Rhombohombomagnosite		Min. Mag. 36 (1967), 133	Ternovskite	Magnesio-riebeckite	Am. Min. 63 (1978), 1023
Rijkboerite	Bariomicrolite	Am. Min. 62 (1977), 403	Tetrakalsilite	Panunzite	N.Jb.Min.Mh. (1985), 87,
Rimpylite	Hornblende	Am. Min. 63 (1978), 1023	Texasite		Am. Min. 67 (1982), 156
Rogersite	Churchite	Am. Min. 48 (1963), 1168	Thalackerite	Anthophyllite	Am. Min. 63 (1978), 1023
Roseite		Min. Mag. 38 (1971), 103	Thierschite	Whewellite	Am. Min. 47 (1962), 786
Royite	Alpha-quartz	Am. Min. 47 (1962), 1223			

APPENDIX TABLE 1. MINERAL NAMES DISCREDITED BY THE CNMNM (NOT TO BE USED IN PUBLICATIONS) AND APPROVED MINERAL NAME (IF ANY) THAT MAY BE USED IN PUBLICATIONS—*Continued*

Discredited name	Approved name	Reference	Discredited name	Approved name	Reference
Thorgadolinite		Min. Mag. 43 (1980), 1055	Vanuranylite		Min. Mag. 36 (1968), 1144
Thoroaeschynite		Min. Mag. 36 (1968), 1144	Velkite		Min. Mag. 43 (1980), 1055
Tibergite	Manganooan sodian magnσιο-hastingsite	Am. Min. 63 (1978), 1023	Vernadskite	Antlerite	Am. Min. 46 (1961), 146
Tin-tantalite		Min. Mag. 36 (1967), 133	Viridine	Manganooan andalusite	Zts. Krist. 155 (1981), 8
Titanbetafite	Betafite	Am. Min. 62 (1977), 403	Waldheimite	Richterite	Am. Min. 63 (1978), 1023
Titanhornblende	Aenigmatite	Am. Min. 63 (1978), 1023	Wallerian	Hornblende	Am. Min. 63 (1978), 1023
Titanmicrolite		Am. Min. 62 (1977), 403	Warthaite	Cosalite + galena	Am. Min. 49 (1964), 1501
Titano-aeschynite		Min. Mag. 36 (1967), 133	Wathlingite	Kieserite	Am. Min. 47 (1962), 811
Titano-obuchevite	Yttrobetafite-(Y)	Am. Min. 62 (1977), 403	Wehrlite	Mixture	Am. Min. 69 (1984), 215
Titanopyrochlore	Mixture	Am. Min. 62 (1977), 403	Weibeyite	Bastnásite + ancylite	Am. Min. 49 (1964), 1154
Titanorhabdophane		Min. Mag. 36 (1967), 133	Wehrlite		Min. Mag. 36 (1967), 133
Toddite	Columbite + samarskite	Am. Min. 47 (1962), 1363	Weinschenkite (of Laubman)	Churchite-(Y)	Min. Mag. 46 (1982), 513
Tonerdehaltiger strahlstein	Tremolite	Am. Min. 63 (1978), 1023	Weinschenkite (of Murgoci)	Ferri-magnσιο- hornblende or magnσιο-hastingsite	Am. Min. 63 (1978), 1023
Torendrikite	Magnσιο-riebeckite	Am. Min. 63 (1978), 1023	Westgrenite	Bismutomicrolite	Am. Min. 62 (1977), 403
Tozalite		Min. Mag. 43 (1980), 1055	Wiikite	Mixture	Am. Min. 62 (1977), 403
Transvaalite	Heterogenite	Min. Mag. 33 (1962), 253	Wilkeite	Apatite/fluorellestadite	Min. Mag. 46 (1982), 514
Tremolite-glaucophane	Richterite	Am. Min. 63 (1978), 1023	Wittingite	Neotocite	Min. Mag. 42 (1978), 279
Triphane	Spodumene	Min. Mag. 43 (1980), 1053	Wolframoixiolite		Min. Mag. 43 (1980), 1055
Trudellite	Natroalunite + chloralunite	Am. Min. 57 (1972), 1317	Woodfordite	Ettringite	Min. Mag. 33 (1962), 262
Tsavalite	Grossular	this paper	Yamatoite		Min. Mag. 36 (1967), 133
Tschernischewit	Sodium amphibole	Am. Min. 63 (1978), 1023	Yanzhongite	Kotulskite	Min. Mag. 43 (1980), 1055
Tucanite		Min. Mag. 36 (1968), 1144	Yanshanite	Vysotskite	Min. Mag. 43 (1980), 1055
Turite		Min. Mag. 36 (1968), 1144	Yftsite	this paper	
Tynite		Min. Mag. 36 (1967), 133	Yokosukaite	Nsutite	Am. Min. 49 (1964), 448
Tyretskite	Tyretskite- <i>ITc</i>	Am. Min. 70 (1985), 636	Yttrotrichetolite	Yttropyrochlore-(Y)	Am. Min. 62 (1977), 403
Udokanite		Min. Mag. 43 (1980), 1055	Yttromicrolite		Am. Min. 67 (1982), 156
Uduminitite		Min. Mag. 39 (1974), 929	Zeyringite	Aragonite + aurichalcite	Am. Min. 48 (1963), 1184
Ufertite	Davidite-(La)	Am. Min. 49 (1964), 447	Zeyringite	Aragonite + aurichalcite	Am. Min. 48 (1963), 1184
Ugite	Thomsonite + gyrolite	Min. Mag. 33 (1962), 262	Zillerite	Actinolite	Am. Min. 63 (1978), 1023
Uralite	Actinolite pseudomorph	Am. Min. 63 (1978), 1023	Zillerthite	Actinolite	Am. Min. 63 (1978), 1023
Uranlimmer	Uranite	Min. Mag. 43 (1980), 1053	Zinc-manganese- cunningtonite	Zinc tirodite	Am. Min. 63 (1978), 1023
Uranmica	Uranite	Min. Mag. 43 (1980), 1053	Zincalunite		Min. Mag. 36 (1967), 133
Uranooanatase		Min. Mag. 36 (1968), 1144	Zinoblende	Sphalerite	Min. Mag. 43 (1980), 1053
Ureyite	Kosmochlor	this paper	Zirconolite	Zirkelite	Am. Min. 62 (1977), 403
Uzbekite	Volborthite	Am. Min. 50 (1965), 2111	Zirlite	Gibbsite	Am. Min. 47 (1962), 1223
Vallachite		Min. Mag. 38 (1971), 103	Zirsite		Min. Mag. 36 (1967), 133
Valleite	Calcian manganooan anthophyllite	Am. Min. 63 (1978), 1023			

APPENDIX TABLE 2. Revised nomenclature for rare-earth-element minerals

Original Name	Revised Name	Original Name	Revised Name
Aeschnite	Aeschnite-(Ce)	Lanthanite -(Ce)	
Aeschnite-(Nd)		Lanthanite-(Nd)	
Agardite	Agardite-(Y)	Laplandite	Laplandite-(Ce)
Agardite-(La)		Lepersonnite	Lepersonnite-(Gd)
Allanite	Allanite-(Ce)	Lokkaite	Lokkaite-(Y)
Allanite	Allanite-(La)	Loparite	Loparite-(Ce)
Allanite-(Y)		Loranskite	Loranskite-(Y)
Ancylite	Ancylite-(Ce)	Mckelveyite	Mckelveyite-(Y)
Ashcroftite	Ashcroftite-(Y)	Melanocerite	Melanocerite-(Ce)
Bastnäsit	Bastnäsit-(Ce)	Minasgeraisite	Minasgeraisite-(Y)
Bastnäsit-(La)		Monazite	Monazite-(Ce)
Bastnäsit-(Y)		Monazite-(La)	
Bijvoetite	Bijvoetite-(Y)	Monazite-(Nd)	
Braitschite	Braitschite-(Ce)	Monteregianite	Monteregianite-(Y)
Britholite	Britholite-(Ce)	Moydite	Moydite-(Y)
Britholite-(Y)		Neodymium churchite	Churchite-(Nd)
Calcioancylite	Calcioancylite-(Ce)	Nioboeschnite-(Ce)	
Calkinsite	Calkinsite-(Ce)	Nordite	Nordite-(La)
Cappelenite	Cappelenite-(Y)	Nordite-(Ce)	
Caysichite	Caysichite-(Y)	Okanaganite	Okanaganite-(Y)
Cebaite	Cebaite-(Ce)	Orthojoaquinite	Orthojoaquinite-(Ce)
Cerianite	Cerianite-(Ce)	Parisite	Parisite-(Ce)
Cerriopyrochlore	Cerriopyrochlore-(Ce)	Perrierite	Perrierite-(Ce)
Cerite	Cerite-(Ce)	Petersite	Petersite-(Y)
Ceritungstite	Yttrotungstite-(Ce)	Polycrase	Polycrase-(Y)
Chernovite	Chernovite-(Y)	Retzian	Retzian-(Ce)
Chevkinite	Chevkinite-(Ce)	Retzian-(La)	
Chukhrovite	Chukhrovite-(Y)	Retzian-(Nd)	
Chukhrovite-(Ce)		Rhabdophane-(Ce)	
Churchite	Churchite-(Y)	Rhabdophane-(La)	
Cordylite	Cordylite-(Ce)	Rhabdophane	Rhabdophane-(Nd)
Daqingshanite	Daqingshanite-(Ce)	Röntgenite	Röntgenite-(Ce)
Davidite	Davidite-(Ce)	Rowlandite	Rowlandite-(Y)
Davidite	Davidite-(Y)	Sahamalite	Sahamalite-(Ce)
Davidite	Davidite-(La)	Samarските	Samarските-(Y)
Donnayite	Donnayite-(Y)	Saryarkite	Saryarkite-(Y)
Euxenite	Euxenite-(Y)	Sazhinite	Sazhinite-(Ce)
Ewaldite	Ewaldite-(Y)	Schuilingite	Schuilingite-(Nd)
Fergusonite	Fergusonite-(Y)	Steenstrupine	Steenstrupine-(Ce)
Fergusonite-beta	Fergusonite-beta-(Y)	Stillwellite	Stillwellite-(Ce)
Fergusonite-beta-(Ce)		Synchysite	Synchysite-(Ce)
Fergusonite-beta-(Nd)		Synchysite-(Nd)	
Florencite	Florencite-(Ce)	Synchysite-(Y)	
Florencite-(La)		Tadzhikite	Tadzhikite-(Ce)
Florencite-(Nd)		Tantaloeschnite-(Y)	
Fluocerite	Fluocerite-(Ce)	Tanteuxenite	Tanteuxenite-(Y)
Fluocerite-(La)		Tengerite	Tengerite-(Y)
Formanite	Formanite-(Y)	Thalenite	Thalenite-(Y)
Gadolinite	Gadolinite-(Y)	Tombarthite	Tombarthite-(Y)
Gadolinite-(Ce)		Törnebohmit	Törnebohmit-(Ce)
Gagarinite	Gagarinite-(Y)	Törnebohmit	Törnebohmit-(La)
Gysinite	Gysinite-(Nd)	Tritomite	Tritomite-(Ce)
Hellandite	Hellandite-(Y)	Tritomite-(Y)	
Hingganite	Hingganite-(Y)	Tundrite	Tundrite-(Ce)
Hingganite-(Yb)		Tundrite-(Nd)	
Huanghoite	Huanghoite-(Ce)	Tveitite	Tveitite-(Y)
Hydroxyl-bastnäsit	Hydroxyl-bastnäsit-(Ce)	Vitusite	Vitusite-(Ce)
Hydroxyl-bastnäsit-(Nd)		Vyuntspakhkite	Vyuntspakhkite-(Y)
Ilmorite	Ilmorite-(Y)	Wakefieldite	Wakefieldite-(Y)
Ilimaussite	Ilimaussite-(Ce)	Xenotime	Xenotime-(Y)
Joaquinite	Joaquinite-(Ce)	Yttrialite	Yttrialite-(Y)
Kainosite	Kainosite-(Y)	Yttrobetafite	Yttrobetafite-(Y)
Karnasurtite	Karnasurtite-(Ce)	Yttrocolumbite	Yttrocolumbite-(Y)
Keivyite	Keivyite-(Yb)	Yttrocrasite	Yttrocrasite-(Y)
Kimuraite-(Y)		Yttropyrochlore	Yttropyrochlore-(Y)
Kobeite	Kobeite-(Y)	Yttrotantalite	Yttrotantalite-(Y)
Kusuite	Kusuite-(Ce)	Yttrotungstite	Yttrotungstite-(Y)
Lanthanite	Lanthanite-(La)	Zhonghuacerite	Zhonghuacerite-(Ce)