

Cesium kupletskite renamed kupletskite-(Cs)

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ABSTRACT

Cesium kupletskite has been renamed kupletskite-(Cs) with the approval of the IMA Commission on New Minerals, Nomenclature and Classification, because the name of a mineral species should be a single word and the International Union of Pure and Applied Chemistry spelling is caesium. The presence or absence of parentheses around the suffix chemical-element is discussed. The advantages of the chemical-element suffix nomenclature are stated.

KEYWORDS: cesium kupletskite, caesium, mineral nomenclature, chemical-element suffix, CNMNC, IMA.

Introduction

CESIUM KUPLETSKITE was published as a new mineral by Efimov *et al.* (1971). A mineral species is a single object and is usually represented by a single name; Nickel and Grice (1998) mention the elimination of a space and the use of a single word. When sorting a list electronically, a space (ASCII 32) will appear before a hyphen (ASCII 45) and before the letter 'a' (ASCII 97) so that the alphabetical order may be distorted. In an alphabetical index, the sort could be on the first or second word of the mineral species name.

The International Union of Pure and Applied Chemistry (IUPAC) compromised with the approval of the American spelling of sulfur and the English spelling of caesium (Leigh, 1990). Therefore, the use of the word 'cesium' is chemically incorrect.

Proposal

A proposal 'To rename cesium kupletskite as kupletskite-(Cs)' was submitted by the author to the International Mineralogical Association's Commission on New Minerals, Nomenclature and Classification (IMA-CNMNC) (Voting

Proposal 04-A), and was subsequently approved (12 agree, 4 disagree and 0 abstain).

Discussion

All chemical words in front of the mineral species name will always be a chemical adjectival modifier (Bayliss *et al.*, 2005). Kupletskite-(Cs) would be in the same position as kupletskite (K analogue) in an alphabetical listing. Kupletskite-(Cs) is also shorter than cesium kupletskite.

The change of a mineral species name may require a literature search of both the old and new mineral species names. A computer search of the literature with the word 'kupletsk' also found the mineral names of Cäsium Kupletskit (German) and cézium kupletskit (Hungarian). The ending '-ite' is not used in the computer search, because other languages use different endings such as '-it' (German, Hungarian), '-ita' (Spanish, Portuguese) and '-iet' (Dutch, Afrikaner). This demonstrated that both the old and new literature may be found with a single search after this type of mineral species name change.

Use of parentheses

White (2004) raised the question of parentheses around the element in a suffix. Suffixes within parentheses were introduced by Levinson (1966), where the then IMA commission, the Commission on New Minerals and Mineral Names (CNMNC)

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approved the change of abukumalite to britholite-(Y), doverite to synchesite-(Y), prioritite to aeschynite-(Y), and spencite to tritomite-(Y). Later, kusuite was changed to wakefieldite-(Ce) by Deliens and Piret (1986). Bayliss and Levinson (1988) made a revision and extension to the suffix nomenclature, where multiple chemical elements in parentheses indicate different structural positions. This chemical-element suffix nomenclature was extended to jahnsite-(CaMnFe), julgoldite-(Fe²⁺), osumilite-(Mg), pumpellyite-(Mg), struvite-(K) and whiteite-(CaFeMg). Wallkilldellite-(Fe) was approved as IMA-CNMMN 97-032, although Sharp *et al.* (1999) published 'wallkilldellite-Fe', which was later corrected by Jambor and Roberts (2001). Mandarino and Back (2004) incorrectly use 'wallkilldellite-Fe' and 'wallkilldellite-Mn' (not approved by IMA-CNMMNC).

Chemical-element suffixes without parentheses indicate extra-framework cations. At present, this suffix nomenclature is used for the zeolite family (Coombs *et al.*, 1998). To conform to this suffix nomenclature, the CNMMN approved the change of sodium dachiardite to dachiardite-Na and strontium-heulandite to heulandite-Sr, however harmotome remains as the Ba-dominant member of the phillipsite series. This chemical-element suffix nomenclature is also used for the labuntsovite group, e.g. vuoriyarvite-K (Chukanov *et al.*, 2002). Therefore, the literature accurately uses parentheses or no parentheses. Removal of all parentheses would result in a dumbing down of the literature.

Advantages of the suffix nomenclature

A suffix nomenclature places together mineral species with the same root name in an alphabetical index. For a structure-type, a suffix nomenclature indicates the chemical variability in an alphabetical index of mineral species. Common group (root) names with prefixes do not appear in an alphabetical index of mineral species. For instance, columbite does not appear, because the mineral species are ferrocolumbite and manganocolumbite.

Prefixes in mineral species names have been spelt in many ways in English and Latin, e.g. antimon-, stib-, stibi- and stibio-. Many non-English languages use other prefixes in mineral species names such as kalcium (calcium), kobalt (cobalt), hidrónium (hydronium), kali (potassium), natron or natrium or natro (sodium or

sodic), kloro (chloro), and orto (ortho). The IUPAC does not recognize any of these chemical abbreviations used for prefixes. In contrast, the chemical-element symbols used in suffixes have been standardized by IUPAC.

Some mineralogists consider that a mineral name with a prefix is easier to pronounce than a mineral name with a suffix. Spencer (1925) wrote about the importance of the written word in mineral names. A mineral name must be spelt in exactly the same way in all languages that use the Latin alphabet. To attempt to create a mineral name to sound correct will only create numerous unwanted spelling variants, because different mineralogists will pronounce a mineral name differently. Bayliss (2000) reports thousands of examples.

With a suffix nomenclature, the chemical element in parenthesis indicates a structural analogue and chemical words in front of a mineral species name will always be a chemical adjectival modifier (Bayliss *et al.*, 2005). With a prefix nomenclature, the chemical prefix may not represent a structural analogue, e.g. nickelbischofite is not the Ni analogue of the Mg-dominant bischofite, and ferronickelplatinum (Pt₂FeNi), represents a chemical composition.

A prefix is often followed by an internal hyphen, e.g. ferro-. The hyphen (ASCII 45) sorts before the letter 'a' (ASCII 97) so that the alphabetical order may be distorted. The use of a suffix avoids the problem of an internal hyphen. Hyphens after the root name are used for structural analogues, polymorphs, polytypes, polysomes and hydrates.

Nickel and Grice (1998) state "The use of excessively long names should be avoided, as these may cause difficulties in pronunciation, tabulations, and computer databases". Suffixes are generally shorter than prefixes.

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