



International Mineralogical Association

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MINERALS AND IMA-CNMNC: THE CONTRIBUTION OF VOLUNTEER SCIENTISTS TO THE COMMUNITY

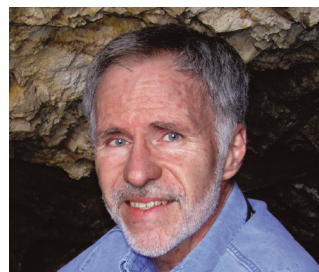
Minerals are essential components of the Earth and other planetary bodies. Consequently, the study of minerals holds an immense significance, primarily for the fields of geosciences and materials science.

For this reason, in 1958, the International Mineralogical Association (IMA) established commissions to address various aspects of mineralogy. These commissions encompassed the Commission on New Minerals and Minerals Names, as well as the Commission on Classification of Minerals. In 2006, these two commissions were merged into the Commission on New Minerals, Nomenclature and Classification (CNMNC), which currently oversees all matters pertaining to systematic mineralogy.

The CNMNC approves new mineral species regularly, with over a hundred new species being accepted each year in recent times. Existing species are classified in groups or supergroups, their chemical formulae are standardized, and criteria are defined for establishing new species. Occasionally, certain species may lose their status (discreditation) if they no longer meet the chemical and/or structural requirements for being a valid individual species. However, it is also possible for a mineral to be revalidated, and valid species may undergo renaming or redefinition processes.

All of this work is made possible thanks to the members of the CNMNC, who are all volunteers working to enhance the knowledge of mineral sciences. They are 32 voters from all over the world who assess all mineral-related proposals in accordance with the IMA-CNMNC guidelines. Their diligent efforts guarantee the adherence to these guidelines. The letter notifying the approval of a new mineral, the creation of a group, or the establishment of a new nomenclature scheme is accompanied by comments from CNMNC members. This letter serves as a certification for the approval and grants access to the valuable comments made by the CNMNC to the editors and reviewers of the journal.

Information on approved new minerals and nomenclature/classification issues is published every two months in the CNMNC Newsletter, which has been published since 2010 in *Mineralogical Magazine* and since 2017 in the *European Journal of Mineralogy* open access. To date, there have been 77 issues of the Newsletter. Additionally, the CNMNC website offers a regularly updated list of valid mineral species, known as "The New IMA List of Minerals – A Work in Progress". This list includes newly approved mineral species and their corresponding formulae.



Tony Kampf



Igor Pekov



Nikita Chukanov

Among the scientists who have made significant contributions to the discovery of new minerals, the podium is currently occupied by Anthony R. Kampf (Natural History Museum of Los Angeles County, USA) with 358 approved species, followed by Igor Pekov (Lomonosov Moscow State University, Russia) with 306 approved species, and Nikita V. Chukanov (Russian Academy of Sciences, Chernogolovka, Russia) with 264 approved species.

The groupings (groups, supergroups, and families) with the largest number of mineral species are listed in TABLE 1. For them, a systematic revision has been carried out in the last years by several dedicated CNMNC subcommittees.

TABLE 1 SELECTED GROUPS, SUPERGROUPS, OR FAMILIES IN ORDER OF ABUNDANCE.

a: number of species as of today; **b:** number of species at the time the report was approved by the CNMNC.

References for papers describing the related nomenclature can be found at the CNMNC website (<http://cnmnc.units.it>).

Grouping	a	b
Amphibole	116	84
Zeolite	108	85
Spinel	61	56
Mica	57	34
Alunite	52	46
Seidozerite	50	44
Hydrotalcite	50	44
Apatite	48	36
Columbite	41	39
Tourmaline	39	17
Alluaudite	39	35
Pyrochlore	38	7
Tetrahedrite	37	11
Garnet	37	32
Epidote	35	20
Labuntsovite	30	19
Pyroxene	30	20

In this communication, we intend to clarify the distinction between the terms "mineral substance" and "mineral species." A mineral substance refers to tangible matter found in the environment naturally, whereas rephrasing from G. Carobbi (Trattato di Mineralogia, USES, Firenze, 1971), a mineral species is not an independent entity found in nature, but rather a construct resulting from agreed-upon conventions, i.e., it is an ideal entity. For that reason, all mineral species must pass through the CNMNC-approval process.

The number of mineral substances is truly remarkable and incalculable, encompassing all chemically homogeneous solid phases that have formed through geological processes throughout the universe. To date, the number of recognized mineral species is just above 6000, meticulously documented in the "The New IMA List of Minerals – A Work in Progress."

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