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New Mineral Names

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Abstract

This issue of New Mineral Names provides a summary of the newly described minerals donowensite, mikehowardite, bortolanite, fluorsigaiite, alumolukrahnite, ferro-ferri-katophorite, tomsquarryite, and argentotetrahedrite-(Zn).

Donowensite and Mikehowardite

Donowensite and mikehowardite (Kampf et al. 2022), ideally $Ca(H_2O)_3Fe^{3+}_2(V_2O_7)_2$ and $Fe^{3+}_4(VO_4)_4(H_2O)_2{\cdot}H_2O$, respectively, are intimately associate secondary minerals from the Wilson Springs vanadium mine in Wilson Springs, Arkansas, U.S.A. Donowensite is named in honor of Don Owens (1937–2015) who was a geologist doing vanadium exploration with Union Carbide. Mikehowardite is named in honor of James Michael "Mike" Howard (b. 1949) who has worked for the Arkansas Geological Commission.

Donowensite crystallizes in space group $P\bar{1}$ with a = 7.3452(4) Å, b = 9.9291(4) Å, c = 10.0151(7) Å, α = 94.455(7)°, β = 98.476(7)°, γ = 100.779(7)°, V = 705.52(7) Å^3, and has a measured density of 2.97(2) g/cm^3. The mineral and its name have been approved by the Commission of New Mineral Nomenclature and Classification (CNMNC) of the International Mineralogical Association (IMA) (IMA 2020-067). Two co-type specimens are deposited in the collections of the Natural History Museum of Los Angeles County, Los Angeles, California, U.S.A., with catalog number 75041.

Mikehowardite crystallizes in space group $P\bar{1}$ with a = 6.6546(17) Å, b = 6.6689(14) Å, c = 9.003(2) Å, α = 76.515(5)°, β = 84.400(6)°, γ = 75.058(5)°, V = 375.11(15) Å^3, and has a measured density of 3.19(2) g/cm^3. The mineral and its name have been approved by the CNMNC of the IMA (IMA 2020-068). Two co-type specimens are deposited in the collections of the Natural History Museum of Los Angeles County, Los Angeles, California, U.S.A., with catalog number 75042.

Bortolanite

Bortolanite (Day et al. 2022), ideally $Ca_2(Ca_{1.5}Zr_{0.5})Na(NaCa)Ti(Si_2O_7)_2(FO)F_2$, is named after its locality at the Bortolan quarry, Minas Gerias, Brazil. Bortolanite belong to the rinkite-group of minerals and is isostructural with fogoite-(Y), kainite-(Y), and götzenite.

Bortolanite crystallizes in space group $P\bar{1}$ with a = 9.615(3) Å, b = 5.725(2) Å, c = 7.316(2) Å, α = 89.91(1)°, β = 101.14(1)°, γ = 100.91(1)°, V = 87.7(3) Å^3, and has a calculated density of 3.195 g/cm^3. The mineral and its name have been approved by the CNMNC of the IMA (IMA 2021-040a). The holotype sample has been deposited in the collections of the Canadian Museum of Nature, Ottawa, Canada, with catalog number CMNMC 88727.

Fluorsigaiite

Fluorsigaiite (Wu et al. 2022), ideally $SrCaCa_3(PO_4)_3F$, was found at the Saima alkaline complex (a nepheline-syenite complex) approximately 50 km northeast of Fengcheng City, China, and is a member of the apatite supergroup. Fluorsigaiite is named after the Chinese pronunciation, "si" for strontium, "gai" for calcium, and the prefix "fluor" (from Latin) as being F-dominate in accordance to apatite nomenclature.

Fluorsigaiite crystallizes in space group $P6_3/m$ with a = 9.6101(2) Å, c = 7.1311(1) Å, V = 570.35(3) Å^3, and has a calculated density of 3.842 g/cm^3. The mineral and its name have been approved by the CNMNC of the IMA (IMA 2021-87a). The type mineral is deposited at the Geological Museum of China, Beijing, China, with catalog number M16130.

Alumolukrahnite

Alumolukrahnite (Kampf et al. 2023), ideally $CaCu^{2+}Al(AsO_4)_2(OH)(H_2O)$, is the Al analog of lukrahnite. Small diamond-shaped crystals (~0.1 mm on edge) of alumolukrahnite was found in a hydrothermal vein in the Jose mine of the Atacama Region in Chile.

Alumolukrahnite crystallizes in space group $P\bar{1}$ with a = 5.343(5) Å, b = 5.501(5) Å, c = 7.329(5) Å, α = 67.72(2)°, β = 69.06(2)°, γ = 69.42(2)°, V = 180.3(3) Å^3, and has a calculated density of 4.094 g/cm^3. The mineral and its name have been approved by the CNMNC of the IMA (IMA 2022-059). Three cotypes are deposited in the collections of the Natural History Museum of Los Angeles County, Los Angeles, California, U.S.A., with catalog numbers 76256, 76257, and 76258.

Ferro-ferri-katophorite

Ferro-ferri-katophorite (Colombo et al. 2023), ideally $Na(NaCa)(Fe^{2+}_4Fe^{3+})(Si_7Al)O_{22}(OH)_2$, was found as a granular mass in reaction rims around aegirine-augite crystals. The name is in accordance with the other amphibole minerals in katophorite group, with the mixed Fe^{2+} and Fe^{3+} was confirmed by Mösssbauer spectroscopy.

Ferro-ferri-katophorite crystallizes in space group $C2/m$ with a = 9.8270(7) Å, b = 18.0300(8), c = 5.316(4) Å, β = 104.626(4)°, V = 911.4(6) Å^3, and has a measured density of 3.32(1) g/cm^3. The mineral and its name have been approved by the CNMNC of the IMA (IMA 2016-008). The type material (fragment of the holotype) has been deposited in the collection of the Museo de Mineralogía, Universidad Nacional de Córdoba (Argentina), with catalog number MS003341.

Tomsquarryite

Tomsquarryite (Elliott et al. 2022), ideally $NaMgAl_3(PO_4)_2(OH)_6{\cdot}8H_2O$, was found in Tom's quarry located in Kapunda, South Australia. A second specimen was also found at the Penrice marble quarry located 15 km southeast of Tom's quarry. At both locations, tomsquarrite was found in association with angastonite, penriceite, elliottite, and wavellite.

Tomsquarryite crystallizes in space group $R\bar{3}m$, with unit-cell parameters a = 6.9865(5) Å, c = 30.634(3) Å, V = 1294.9(4) Å^3, and a calculated density of 2.22 g/cm^3. The mineral and its name have been approved by the CNMNC of the IMA (IMA 2022-018). The holotype

* All minerals have been approved by the IMA CNMMC. For a complete listing of all IMA-validated unnamed minerals and their codes, see http://cnmnc.units.it/ (click on "IMA list of minerals").

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and cotype specimens from Tom's quarry and the cotype from the Penrice marble quarry are housed in the mineralogical collections of the South Australian Museum, with catalog numbers G35033, G35034, and G35031, respectively.

Argentotetrahedrite

Argentotetrahedrite-(Zn) (Sejkora et al. 2022), ideally $Ag_6(Cu_4Zn_2)Sb_4S_{13}$, which is a Zn-rich, Ag-dominate member of tetrahedrite group of minerals. Argentotetrahedrite-(Zn) was found in three different localities, Krmnica in the Slovak Republic, Lengenbach (Switzerland), and Zvěstov (Czech Republic).

Argentotetrahedrite-(Zn) crystallizes in space group $I\bar{4}3m$ with a = 10.5505(10) Å, V = 1174.4(3) Å^3, and has a calculated density of 5.089 g/cm^3. The mineral and its name have been approved by the CNMNC of the IMA (IMA 2020-069). The holotype material from Kremnica and type material from Zvěstov are deposited in the collections of the Department of Mineralogy and Petrology, National Museum in Prague, Czech Republic, with catalog numbers P1P 51/2020 and 70/2021, respectively. The crystals used for the single-crystal X-ray diffraction study, along with cotype material from Lengenbach, are kept in the mineralogical collection of the Museo di Storia Naturale of the Università di Pisa, with catalog numbers 19922 (Kremnica), 19923 (Lengenbach), and 19939 (Zvěstov).

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