IMA Commission on New Minerals, Nomenclature and Classification (CNMNC)

Newsletter 60

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The information given here is provided by the IMA Commission on New Minerals, Nomenclature and Classification for comparative purposes and as a service to mineralogists working on new species. Each mineral is described in the following format:

Mineral name, if the authors agree on its release prior to the full description appearing in press
Chemical formula
Type locality
Full authorship of proposal
E-mail address of corresponding author
Relationship to other minerals
Crystal system, Space group; Structure determined, yes or no
Unit-cell parameters
Strongest lines in the powder X-ray diffraction pattern
Type specimen repository and specimen number
Citation details for the mineral prior to publication of full description

Citation details concern the fact that this information will be published in the Mineralogical Magazine on a routine basis, as well as being added month by month to the Commission’s web site.

It is still a requirement for the authors to publish a full description of the new mineral.

NO OTHER INFORMATION WILL BE RELEASED BY THE COMMISSION

NEW MINERAL PROPOSALS APPROVED IN FEBRUARY 2021

IMA No. 2019-033a
Haitaitè-(La)
LaU4+Fe3+2(Ti13Fe2+4Fe3+)Σ18O38
Haïta town, Myi County, Sichuan province, China (26°54′13″N, 102°01′27″E)
Fenggang Wang*, Guang Fan, Ting Li, Xiangkun Ge, Yu Wu, Huan Wang and Jian Yao
*E-mail: wfg9818@163.com
Crichtonite group
Trigonal: R3; structure determined
a = 10.3678(5), c = 20.839(1) Å
3.391(79), 3.241(65), 3.039(49), 2.994(46), 2.871(100), 2.475(62), 1.694(58), 1.436(55)
Type material is deposited in the mineralogical collections of the Geological Museum of China, No. 16 Yangrou Hutong, Xisi, Beijing 100031, People’s Republic of China, catalogue number M13859

IMA No. 2020-081
Dobšínaitè
Ca3Ca(AsO4)2⋅2H2O
Dionýz mining field, Zemberg-Terézia vein system, 2.2 km NE of the Dobšíná town, Spišsko-gemerské rudohorie Mts., Rožňava Co., Košice Region, Slovakia (48°50′17″N, 20°23′01″E)
Jiří Sejkora*, Martin Števko, Radek Škoda, Eva Višková, Jiří Toman, Sebastián Hreus, Jakub Plášil and Zdeněk Dolniček
*E-mail: jiri.sejkora@nm.cz
Roselite group
Monoclinic: P21/c
a = 5.990(2), b = 13.013(4), c = 5.726(2) Å, β = 108.47(3)°
5.197(37), 5.002(33), 3.443(38), 3.385(66), 3.249(77), 3.201(42), 3.026(100), 2.822(60)

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Type material is deposited in the mineralogical collections of the Moravian Museum, Department of Mineralogy and Petrology, Zelný trh 6, Brno, Czech Republic, catalogue number B12257.


IMA No. 2020-082
Bobfinchite
Na[(UO2)8O3(OH)11]⋅10H2O
Burro mine, Slick Rock district, San Miguel Co., Colorado, USA (38°02′24″N, 108°53′23″W)
Travis A. Olds*, Jakub Plášil, Anthony R. Kampf, Peter Burns, Joe Marty and John S. McCloy
*E-mail: olds@carnegiemnh.org
Schoepite family
Orthorhombic: Pbcn; structure determined
a = 14.6249(9), b = 14.0389(10), c = 16.6923(10) Å
Type material is deposited in the mineralogical collections of the Natural History Museum of Los Angeles County, 900 Exposition Boulevard, Los Angeles, CA 90007, USA, catalogue number 75146

IMA No. 2020-084
Yuzuxiangite
Sr2Fe3+(Si2O6)(OH)⋅3H2O
Wessels mine, Kalahari Manganese Fields, Northern Cape Province, South Africa (27°06′51.82″S, 22°51′18.31″E)
Xiangping Gu*, Hexiong Yang and Xiande Xie
*E-mail: guxp2004@163.com
The Fe3+- analogue of omiluite
Monoclinic: P21/m; structure determined
a = 11.1035(10), b = 7.8463(7), c = 7.8222(7) Å, β = 101.406(8)°
4.632(92), 3.486(100), 3.291(67), 3.176(36), 2.841(48), 2.118(49), 1.956(46)
Type material is deposited in the mineralogical collections of the Geological Museum of China, No. 16 Yangrou Hutong, Xisi, Beijing 100031, People’s Republic of China, catalogue number M16110 (holotype), the University of Arizona Mineral Museum, 1601 E University Blvd, Tucson, AZ 85719, USA, catalogue number 22692, and the RRUFF Project, deposition number R200008

IMA No. 2020-085
Ferri-hellandite-(Ce)
(Ca5Ce)CeFe3+4□3B2Si4O22(OH)2
Sagåsen larvikite quarry, Morjë, Porsgrunn, Vestfold and Telemark, Norway (59°02′39″N, 9°49′46″E)
Henrik Friis*, Radek Škoda, Alf Olav Larsen, Michaela Vašinová-Galiová, Radim Čtvrtlík and Jan Filip
*E-mail: henrik.friis@nhm.uio.no
Hellandite group
Monoclinic: P21/a; structure determined
a = 19.1616(2), b = 4.7561(4), c = 10.34061(1) Å, β = 111.173(1)°
8.934(37), 3.466(37), 3.246(33), 3.101(34), 2.929(37), 2.861(44), 2.658(100), 1.910(44)
Type material is deposited in the mineralogical collections of the Natural History Museum, University of Oslo, P.O. Box 1172, Blindern, 0318 Oslo, Norway, catalogue number KNR 44259 (XRD), and the Moravian Museum, Department of Mineralogy and Petrology, Zelný trh 6, Brno, Czech Republic, catalogue number B12258 (EMPA)

IMA No. 2020-086
Elgoresyite
(Mg5Si2)O9
Elgoresy, Vaal River basin, Free State Province, South Africa (29°04′13.60″S, 23°02′05.86″E)
Luca Bindi*, Ryosuke Sinmyo, Elena Bykova, Sergey V. Ovsyannikov, Catherine McCammon, Ilya Kupenko, Leyla Ismailova, Leonid Dubrovinsky and Xiande Xie
*E-mail: luca.bindi@unifi.it
New structure type
Monoclinic: C2/m; structure determined
a = 9.397(2), b = 2.763(1), c = 11.088(3) Å, β = 94.25(2)°
2.801(100), 2.563(35), 2.460(70), 2.308(40), 2.070(35), 2.017(55), 1.968(65), 1.845(60)
Type material is deposited in the mineralogical collections of the Museo di Storia Naturale, Università di Firenze, Via La Pira 4, I-50121, Firenze, Italy, catalogue number 3238/I

IMA No. 2020-087
Phosphocyclite-(Fe)
Fe2+(P4O12)
Halamish Wadi, Hatrurim basin, Negev Desert, Israel (31°37′52″N, 34°57′48″E)
S. Vereshchagin, Vladimir N. Bocharov and Maksim S. Lozhkin
*E-mail: sbritvin@gmail.com
The Fe2+-analogue of phosphocyclite-(Ni) (IMA No. 2020-088; this Newsletter)
Monoclinic: C2/c; structure determined
a = 11.834(4), b = 8.340(2), c = 9.911(2) Å, β = 118.50(4)°
6.170(51), 4.253(40), 3.554(20), 3.388(26), 3.201(30), 3.012(100), 2.600(23), 2.308(21)
Type material is deposited in the collections of the Fersman Mineralogical Museum, Russian Academy of Sciences, Leninskiy Prospekt 18-2, Moscow 119071, Russia, registration number 5596/1

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IMA No. 2020-088
Phosphocyclite-(Ni)
Ni$_2$(P$_4$O$_{12}$)
Phosphocyclite-(Ni)
Sluzhenikinite
Monoclinic: $a = 11.611(2)$, $b = 9.826(2)$ Å, $\beta = 118.41(4)˚$
This Newsletter
E-mail: sbritvin@gmail.com
S. Vereshchagin, Vladimir N. Bocharov and Maksim S. Lozhkin

IMA No. 2020-089
Protocaseyite
KFe$_{11}$O$_{17}$
Halamish Wadi, Hatrurim basin, Negev Desert, Israel (31° 09’47”N, 35°17’57”E)
Sergey N. Britvin*, Mikhail N. Murashko, Yevgeny Vapnik, Natalia S. Vlasenko, Maria G. Krzhizhanovskaya, Oleg S. Vereshchagin, Vladimir N. Bocharov and Maksim S. Lozhkin
E-mail: sbritvin@gmail.com
The Fe$^{3+}$-analogue of kahlenbergite

NEW MINERAL PROPOSALS APPROVED IN MARCH 2021

IMA No. 2020-088
Sluzhenikinite
Pd$_4$(Sb$_2$,Sn$_3$) 3 ≤ x ≤ 4
Oktyabrsk deposit (shaft no. 1, Oktyabrsk mine), Norilsk’s deposits, Russia (69°30’20”N, 88°27’17”E)
Anna Vymazalová*, Mark D. Welch, František Laufek, Vladimir V. Kozlov, Chris J. Stanley and Jakub Plášil
E-mail: anna.vymazalova@geology.cz
New structure type
Monoclinic: P2$_1$/m; structure determined
$a = 7.5558(1)$, $b = 29.2967(3)$, $c = 7.5713(1)$ Å, $\beta = 119.931(2)$˚
$2.317(65)$, $2.315(100)$, $2.308(29)$, $2.187(89)$, $2.185(22)$, $2.183(74)$, $2.178(15)$, $2.177(25)$
Type material is deposited in the collections of the Department of Earth Sciences, Natural History Museum, London SW7 5BD, UK, catalogue number BM 2020,20 (holotype), and the Fersman Mineralogical Museum, Russian Academy of Sciences, Leninskiy Prospekt 18-2, Moscow 119071, Russia, registration number 5691/1 (cotype)

IMA No. 2020-090
Protocaseyite
[Al$_6$(OH)$_8$(H$_2$O)$_{12}$][V$_{10}$O$_{28}$]$\cdot$8H$_2$O
Burro mine, Slick Rock district, San Miguel Co., Colorado, USA (38°02’42”N, 108°53’23”W)
Anthony R. Kampf*, Mark A. Cooper, John M. Hughes, Chi Ma, William H. Casey and Joe Marty
E-mail: akampf@nhm.org
Decavanadate family
Triclinic: P$\bar{1}$; structure determined
$a = 9.435(2)$, $b = 10.742(3)$, $c = 11.205(3)$ Å, $\alpha = 75.395(7)$, $\beta = 71.057(10)$, $\gamma = 81.286(6)$˚
$10.38(100)$, $8.89(37)$, $7.24(38)$, $5.922(17)$, $2.177(11)$, $2.083(13)$, $1.785(11)$
Type material is deposited in the mineralogical collections of the Natural History Museum of Los Angeles County, 900 Exposition Boulevard, Los Angeles, CA 90007, USA, catalogue numbers 75191, 75192 and 75193

IMA No. 2020-091
Shagamite
KFe$_{11}$O$_{17}$
Hatrurim Complex, Negev Desert, near Arad city, Israel (31° 14’22”N, 35°16’55”E)
Evgeny V. Galuskin*, Hannes Krüger, Irina O. Galuskina, Biljana Krüger, Krzysztof Nejbert and Yevgeny Vapnik
E-mail: evgeny.galuskin@us.edu.pl
The Fe$^{3+}$-analogue of kahlenbergite
Hexagonal: P6$_3$/mmc; structure determined
$a = 5.9327(5)$, $c = 23.782(3)$ Å
$11.89(100)$, $5.945(29)$, $2.834(61)$, $2.654(39)$, $2.554(25)$, $2.444(23)$, $2.375(22)$, $1.483(29)$
Type material is deposited in the collections of the Fersman Mineralogical Museum, Russian Academy of Sciences, Leninskiy Prospekt 18-2, Moscow 119071, Russia, registration number 5634/1

IMA No. 2020-092
Mobite
NiFe$_3^+$(PO$_4$)$_2$O
Daba-Siwaqa pyrometamorphic complex, Transjordan Plateau, Jordan (31°21’52”N, 36°10’55”E)
Sergey N. Britvin*, Mikhail N. Murashko, Maria G. Krzhizhanovskaya, Yevgeny Vapnik, Natalia S. Vlasenko, Oleg S. Vereshchagin, Dmitry V. Pankin and Evgeny A. Vasilev
E-mail: sbritvin@gmail.com
New structure type
Orthorhombic: Pnma; structure determined
$a = 7.216(2)$, $b = 6.406(1)$, $c = 7.471(2)$ Å
$5.20(63)$, $3.321(37)$, $3.251(83)$, $2.726(100)$, $2.395(19)$, $2.354(25)$, $2.304(24)$, $2.049(18)$
Type material is deposited in the collections of the Fersman Mineralogical Museum, Russian Academy of Sciences, Leninskiy Prospekt 18-2, Moscow 119071, Russia, registration number 5627/1

IMA No. 2020-093
Graulichite-(La)
LaFe$_3^+$\((\text{AsO}_4)_2(\text{OH})_6^-

Patte d’Ole mine, Bou Skour mining district, Djebel Saghro mountain range, ca. 50 km south-east of Ouarzazate, Morocco (30°55’47”N, 6°18’05”W)

Cristian Biagioni, Marco E. Ciriotti, Georges Favreau, Daniela Mauro and Federica Zaccarini
*E-mail: cristian.biagioni@unipi.it

IMA No. 2020-094
Yakubovichite
CaNi$_2$Fe$_7^+$\((\text{PO}_4)_3

Daba-Siwaqa pyrometamorphic complex, Transjordan Plateau, Daba-Siwaqa mountain range, ca. 50 km south-east of Ouarzazate, Morocco (30°55’47”N, 6°18’05”W)

Sergey N. Britvin*, Mikhail N. Murashko, Maria G. Krzhizhanovskaya, Yevgeny Vapnik, Natalia S. Vlasenko, Oleg S. Vereshchagin, Dmitrii V. Pankin and Anatoly A. Zolotarev
*E-mail: sbritvin@gmail.com

New structure type
Orthorhombic: Imma; structure determined

Hexagonal: $\overline{R}$3m; structure determined

a = 7.252(13), $c = 16.77(3)$ Å

5.86(m), 3.045(s), 2.511(mw), 2.239(m), 1.960(mw), 1.813(mw)

Type material is deposited in the mineralogical collections of the Museum of Storia Naturale, Università di Pisa, Via Roma 79, Calci (PI), Italy, catalogue number 19924


IMA No. 2020-095
Tennantite-(Cu)
Cu$_6$(Cu$_2$Cu$_2$)As$_3$S$_5$

Layo epithermal deposit, Castilla Province, Arequipa Department, Peru (15°11’16”S, 72°14’30”W)

Sakhaite and harkerite

In the IMA List of Minerals the formula for sakhaite is given as Ca$_{48}$Mg$_{16}$Al$_6$(SiO$_3$OH)$_4$(CO$_3$)$_2$(BO$_3$)$_{26}$(H$_2$O)$_{96}$(HCl)$_{3}$.

REVISED CHEMICAL FORMULAE

Sakhaite and harkerite

In the IMA List of Minerals the formula for sakhaite is given as Ca$_{48}$Mg$_{16}$Al$_6$(SiO$_3$OH)$_4$(CO$_3$)$_2$(BO$_3$)$_{26}$(H$_2$O)$_{96}$(HCl)$_{3}$.

This formula is mirrored from the 2008 Nickel-Nichols list, is not charge-balanced, and has an obscure origin. Actually in the original description of holotype sakhaite [Zap. Vses. Miner. Obsh.,
Sakhaite is closely related to harkerite. A recent detailed study of the sakhaite-harkerite solid solution, based on 14 single-crystal structure refinements [Am. Mineral., 103 (2018), 1749–1760], shows that the two minerals are related by the substitution of four (BO$_3$) triangles by a pentamer formed by one (AlO$_4$) + four (SiO$_4$) tetrahedra (with one oxygen atom protonated). The two end-member compositions can be taken as the ideal formulae for harkerite and sakhaite, as follows:

**Harkerite**: $\text{Ca}_{48}\text{Mg}_{16}[\text{AlSi}_4\text{O}_{15}(\text{OH})]_4(\text{BO}_3)_{16}(\text{CO}_3)_{16} \cdot 2(\text{H}_2\text{O},\text{HCl})$

**Sakhaite**: $\text{Ca}_{48}\text{Mg}_{16}(\text{BO}_3)_{32}(\text{CO}_3)_{16} \cdot 2(\text{H}_2\text{O},\text{HCl})$

The formulae of harkerite and sakhaite have been modified in the IMA List of Minerals accordingly.

**Tiettaite**

A paper on the mineral tiettaite has been recently published [Crystallogr. Rep., 66 (2021), 76–85] in which the ideal chemical formula of the mineral is given as $\text{K}_4\text{Na}_{12}\text{Fe}^{3+}_{2}\text{Si}_{16}\text{O}_{41}(\text{OH})_4 \cdot 2\text{H}_2\text{O}$, based on a combined Rietveld and EPMA study carried out on a sample of tiettaite after a new finding from the type locality. With respect to the previously accepted formula, potassium is an essential constituent, and titanium is not an essential constituent anymore. The crystal structure of tiettaite has been refined for the first time, and shows that there are two sites occupied by K and four sites occupied by Na. Moreover there is a single octahedral site which is occupied mainly by Fe$^{3+}$, with very minor Ti. Also in holotype tiettaite it is invariably Fe$^{3+}$ > Ti. These data were examined carefully by the CNMNC officers and were considered reliable. Accordingly it was agreed to modify the formula of tiettaite in the official IMA List of Minerals.