



IMA Commission on New Minerals, Nomenclature and Classification (CNMNC) – Newsletter 59

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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 X-ray powder 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 *European Journal of Mineralogy* on a routine basis, as well as being added month by month to the commission's website.

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.

1 New mineral proposals approved in December 2020

IMA no. 2018-135a

Xuite



Menan volcanic complex, near Rexburg, Madison Co., Idaho, USA (43°47'03" N, 111°58'23" W – holotype); paralava from Gillette, Campbell Co., Wyoming, USA (cotype)

Seungyeol Lee* and Xiaofeng Guo

*E-mail: slee2@lpi.usra.edu

Garnet supergroup

Cubic: $Ia\bar{3}d$; structure determined

$a = 12.5056(5) \text{ \AA}$

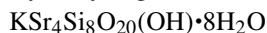
5.106(16), 4.421(65), 3.342(24), 3.126(62), 2.796(100), 2.666(15), 2.552(63), 2.028(5)

Type material is deposited in the mineralogical collections of the Geology Museum of the Department of Geoscience, University of Wisconsin-Madison, 1215 West Dayton Street, Madison, WI 53706, USA, catalogue numbers UWGM 2341 (holotype – Rexburg), UWGM 2342, UWGM 2343, UWGM 2352, and UWGM 2353 (cotypes – Rexburg and Gillette)

How to cite: Lee, S. and Guo, X.: Xuite, IMA 2018-135a, in: CNMNC Newsletter 59, Eur. J. Mineral., 33, <https://doi.org/10.5194/ejm-33-139-2021>, 2021.

IMA no. 2020-066

Hydroxymcglassonite-(K)



Wessels mine, Kalahari manganese fields, Northern Cape Province, South Africa (27°06'51.82" S, 22°51'18.31" E)

Hexiong Yang*, Xiangping Gu, and Michael M. Scott

*E-mail: hyang@arizona.edu

Apophyllite group

Tetragonal: $P4/mcn$; structure determined

$$a = 9.0792(2), c = 16.1551(9) \text{ \AA}$$

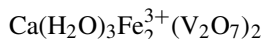
8.008(94), 4.539(42), 3.940(50), 3.638(81), 3.055(34), 2.993(58), 2.800(28), 2.538(100)

Type material is deposited in the collections of the University of Arizona Mineral Museum, 1601 E University Blvd, Tucson, AZ 85719, USA, catalogue number 22691 (holotype), and the RRUFF Project, deposition number R200004 (cotype)

How to cite: Yang, H., Gu, X., and Scott, M. M.: Hydroxymcglassonite-(K), IMA 2020-066, in: CNMNC Newsletter 59, Eur. J. Mineral., 33, <https://doi.org/10.5194/ejm-33-139-2021>, 2021.

IMA no. 2020-067

Donowensite



North Wilson pit, Wilson Springs mine (also known as Union Carbide mine), Wilson Springs (also known as Potash Sulphur Springs), Garland Co., Arkansas, USA (34°28'40" N, 92°58'05" W)

Anthony R. Kampf*, John M. Hughes, Barbara P. Nash, and Jason B. Smith

*E-mail: akampf@nhm.org

New structure type

Triclinic: $P\bar{1}$; structure determined

$$a = 7.3452(4), b = 9.9291(4), c = 10.0151(7) \text{ \AA}$$

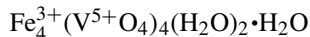
$\alpha = 94.455(7), \beta = 98.476(7), \gamma = 100.779(7)^\circ$
9.88(100), 7.12(24), 4.176(17), 3.671(20), 3.283(44), 3.202(22), 3.110(19), 2.973(26)

Cotype 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 75041 and 75042

How to cite: Kampf, A. R., Hughes, J. M., Nash, B. P., and Smith, J. B.: Donowensite, IMA 2020-067, in: CNMNC Newsletter 59, Eur. J. Mineral., 33, <https://doi.org/10.5194/ejm-33-139-2021>, 2021.

IMA no. 2020-068

Mikehowardite



North Wilson pit, Wilson Springs mine (also known as Union Carbide mine), Wilson Springs (also known as Potash Sulphur Springs), Garland Co., Arkansas, USA (34°28'40" N, 92°58'05" W)

Anthony R. Kampf*, John M. Hughes, Barbara P. Nash, and Jason B. Smith

*E-mail: akampf@nhm.org

Structurally related to schubnelite

Triclinic: $P\bar{1}$; structure determined

$$a = 6.655(2), b = 6.669(1), c = 9.003(2) \text{ \AA}, \alpha = 76.515(5), \beta = 84.400(6), \gamma = 75.058(5)^\circ$$

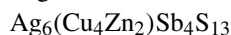
8.799(86), 6.449(100), 3.693(29), 3.198(88), 2.982(50), 2.909(59), 2.792(31), 2.145(30)

Cotype 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 75041 and 75042

How to cite: Kampf, A. R., Hughes, J. M., Nash, B. P., and Smith, J. B.: Mikehowardite, IMA 2020-068, in: CNMNC Newsletter 59, Eur. J. Mineral., 33, <https://doi.org/10.5194/ejm-33-139-2021>, 2021.

IMA no. 2020-069

Argentotetrahedrite-(Zn)



Kremnica deposit, Žiar nad Hronom District, Banská Bystrica Region, Slovakia (48°42'44" N, 18°54'07" E – type locality); Lengenbach quarry, Imfeld, Binn Valley, Canton of Valais, Switzerland (46°21'54" N, 8°13'15" E – cotype locality)

Jiří Sejkora, Cristian Biagioni*, Martin Števkó, Thomas Raber, and Philippe Roth

*E-mail: cristian.biagioni@unipi.it

Tetrahedrite group

Cubic: $I\bar{4}3m$; structure determined

$$a = 10.550(1) \text{ \AA}$$

7.460(24), 3.046(100), 2.820(6), 2.638(23), 2.487(6), 2.249(6), 1.865(35), 1.591(18)

Type material is deposited in the collections of the Department of Mineralogy and Petrology, National Museum in Prague, Cirkusová 1740, 19300 Praha 9, Czech Republic, catalogue number P1P 51/2020 (Kremnica), and the Museo di Storia Naturale, Università di Pisa, Via Roma 79, Calci (PI), catalogue numbers 19922 (Kremnica) and 19923 (Lengenbach)

How to cite: Sejkora, J., Biagioni, C., Števkó, M., Raber, T., and Roth, P.: Argentotetrahedrite-(Zn), IMA 2020-

069, in: CNMNC Newsletter 59, Eur. J. Mineral., 33, <https://doi.org/10.5194/ejm-33-139-2021>, 2021.

IMA no. 2020-070

Zolenskyite

FeCr_2S_4

Indarch meteorite, fell on 7 April 1891 at Shusha, Azerbaijan (40°04'09" N, 47°12'15" E)

Chi Ma*

*E-mail: chima@caltech.edu

The Fe analogue of breznaitite and a dimorph of daubr elilite

Monoclinic: $C2/m$

$a = 12.84(1)$, $b = 3.44(1)$, $c = 5.94(1)$  , $\beta = 117(1)^\circ$

5.251(52), 2.977(47), 2.646(92), 2.625(46), 2.067(93), 2.057(100), 1.720(47), 1.716(78)

Type material is deposited in the meteorite collection of the Division of Geological and Planetary Sciences, California Institute of Technology, 1200 East California Boulevard, Pasadena, CA 91125, USA, catalogue numbers ICM1 and ICM3

How to cite: Ma, C.: Zolenskyite, IMA 2020-070, in: CNMNC Newsletter 59, Eur. J. Mineral., 33, <https://doi.org/10.5194/ejm-33-139-2021>, 2021.

IMA no. 2020-071

Makotoite

$\text{Ag}_{12}(\text{Cu}_3\text{Au})\text{S}_8$

Funan gold deposit, ca. 16 km west of Zhaoyuan, Shandong Province, China (37°23'34" N, 120°16'05" E)

Xiangping Gu*

*E-mail: guxp2004@163.com

The Cu–Au-ordered analogue of uytenbogaardtite

Trigonal: $R\bar{3}c$; structure determined

$a = 13.584(2)$, $c = 16.781(3)$  

6.873(29), 2.788(16), 2.690(74), 2.576(100), 2.339(32), 2.104(44), 1.970(34), 1.762(19)

Type material is deposited in the mineralogical collection of the Geological Museum of China, No. 16, Yangrou Hutong, Xisi, Beijing 100031, People's Republic of China, catalogue number M16110

How to cite: Gu, X.: Makotoite, IMA 2020-071, in: CNMNC Newsletter 59, Eur. J. Mineral., 33, <https://doi.org/10.5194/ejm-33-139-2021>, 2021.

IMA no. 2020-072

Thebaite-(NH_4)

$(\text{NH}_4)_3\text{Al}(\text{C}_2\text{O}_4)(\text{PO}_3\text{OH})_2(\text{H}_2\text{O})$

The 125-foot level of the Rowley mine, ca. 20 km northwest of Theba, Maricopa Co., Arizona, USA (33°02'57" N, 113°01'58" W)

Anthony R. Kampf*, Mark A. Cooper, Aaron J. Celestian, Barbara P. Nash, and Joe Marty

*E-mail: akampf@nhm.org

New structure type

Monoclinic: $P2_1/c$; structure determined

$a = 11.156(9)$, $b = 6.234(6)$, $c = 18.65(2)$  , $\beta = 102.93(1)^\circ$

9.21(88), 7.88(24), 5.39(44), 4.93(26), 4.56(32), 3.350(39), 3.112(100), 2.964(42)

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 75082

How to cite: Kampf, A. R., Cooper, M. A., Celestian, A. J., Nash, B. P., and Marty, J.: Thebaite-(NH_4), IMA 2020-072, in: CNMNC Newsletter 59, Eur. J. Mineral., 33, <https://doi.org/10.5194/ejm-33-139-2021>, 2021.

2 New mineral proposals approved in January 2021**IMA no. 2020-073**

Devilliersite

$\text{Ca}_4\text{Ca}_2\text{Fe}_{10}^{3+}\text{O}_4[(\text{Fe}_{10}^{3+}\text{Si}_2)\text{O}_{36}]$

Parsa Mountain, eastern part of the Hatrurim Basin, Negev Desert, ca. 10 km southeast of Arad, Israel (31°12.3' N, 35°17.1' E)

Biljana Kr ger*, Hannes Kr ger, Irina O. Galuskina, Evgeny V. Galuskin, and Yevgeny Vapnik

*E-mail: biljana.krueger@uibk.ac.at

Sapphirine supergroup

Triclinic: $P\bar{1}$; structure determined

$a = 10.5662(1)$, $b = 10.9497(1)$, $c = 9.08459(7)$  , $\alpha = 106.4300(8)$, $\beta = 95.7466(7)$, $\gamma = 124.298(1)^\circ$

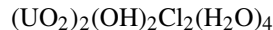
3.001(49), 2.999(52), 2.733(60), 2.731(58), 2.596(100), 2.593(81), 2.591(79), 1.523(49)

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 5296/1

How to cite: Kr ger, B., Kr ger, H., Galuskina, I. O., Galuskin E. V., and Vapnik, Y.: Devilliersite, IMA 2020-073, in: CNMNC Newsletter 59, Eur. J. Mineral., 33, <https://doi.org/10.5194/ejm-33-139-2021>, 2021.

IMA no. 2020-074

Uranoclite



Blue Lizard mine, Red Canyon, White Canyon District, San Juan Co., Utah, USA (37°33'26" N, 110°17'44" W)

Anthony R. Kampf*, Jakub Plášil, Travis A. Olds, Barbara P. Nash, and Joe Marty

*E-mail: akampf@nhm.org

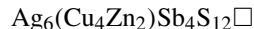
Known synthetic analogue

Monoclinic: $P2_1/n$ $a = 10.763(8)$, $b = 6.156(8)$, $c = 17.798(8)$ Å,
 $\beta = 95.656(15)^\circ$ 8.85(38), 5.340(100), 5.051(63), 4.421(83), 3.781(38),
3.586(57), 2.828(33), 2.005(37)

Cotype 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 75101 and 75102

How to cite: Kampf, A. R., Plášil, J., Olds, T. A., Nash, B. P., and Marty, J.: Uranoclite, IMA 2020-074, in: CNMNC Newsletter 59, Eur. J. Mineral., 33, <https://doi.org/10.5194/ejm-33-139-2021>, 2021.**IMA no. 2020-075**

Kenoargentotetrahedrite-(Zn)



Yindongpo mine, Weishancheng ore field, Tongbai Co., Nanyang, Henan Province, China (32°33'02" N, 113°25'25" E)

Kai Qu*, Xianzhang Sima, Xiangpin Gu, Weizhi Sun, Guang Fan, Zengqian Hou, Pei Ni, Daming Wang, Zeqiang Yang, and Yanjuan Wang

*E-mail: qukai_tcgs@foxmail.com

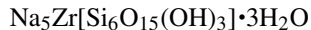
Tetrahedrite group

Cubic: $I\bar{4}3m$; structure determined $a = 10.4624(4)$ Å
7.345(6), 3.010(100), 2.792(5), 2.606(22), 2.456(5),
2.046(9), 1.844(30), 1.572(15)

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 M16112

How to cite: Qu, K., Sima, X., Gu, X., Sun, W., Fan, G., Hou, Z., Ni, P., Wang, D., Yang, Z., and Wang, Y.: Kenoargentotetrahedrite-(Zn), IMA 2020-075, in: CNMNC Newsletter 59, Eur. J. Mineral., 33, <https://doi.org/10.5194/ejm-33-139-2021>, 2021.**IMA no. 2020-076**

Zolotarevite



Mt. Alluaiv, Lovozero alkaline massif, Kola Peninsula, Russia (67°51'48" N, 34°30'16" E)

Julia A. Mikhailova*, Ekaterina A. Selivanova, Sergey V. Krivovichev, Yakov A. Pakhomovsky, and Nikita V. Chukanov

*E-mail: mikhailova@geoksc.apatity.ru

Lovozerite group

Trigonal: $R\bar{3}m$; structure determined $a = 10.294(6)$, $c = 13.115(8)$ Å
7.37(69), 5.26(56), 3.686(64), 3.330(79), 3.265(99),
2.640(100), 2.576(60), 1.842(29)

Type material is deposited in the collection of the Geological and the Mineralogical Museum of the Geological Institute, Kola Science Centre of the Russian Academy of Sciences, 14 Fersman Street, Apatity 184209, Russia, catalogue number GIM 7910

How to cite: Mikhailova, J. A., Selivanova, E. A., Krivovichev, S. V., Pakhomovsky, Y. A., and Chukanov, N. V.: Zolotarevite, IMA 2020-076, in: CNMNC Newsletter 59, Eur. J. Mineral., 33, <https://doi.org/10.5194/ejm-33-139-2021>, 2021.**IMA no. 2020-078**

Nitscheite



Green Lizard mine, Red Canyon, White Canyon District, San Juan Co., Utah, USA (37°34'37.10" N, 110°17'52.80" W)

Anthony R. Kampf*, Travis A. Olds, Jakub Plášil, Barbara P. Nash, and Joe Marty

*E-mail: akampf@nhm.org

New structure type

Monoclinic: $P2_1/n$; structure determined $a = 17.3982(4)$, $b = 12.8552(3)$, $c = 17.405(1)$ Å,
 $\beta = 96.649(7)^\circ$
6.45(100), 5.69(30), 5.24(28), 4.275(33), 4.081(38),
3.214(40), 2.816(52), 2.591(30)

Cotype 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 75103 and 75104

How to cite: Kampf, A. R., Olds, T. A., Plášil, J., Nash, B. P., and Marty, J.: Nitscheite, IMA 2020-078, in: CNMNC Newsletter 59, Eur. J. Mineral., 33, <https://doi.org/10.5194/ejm-33-139-2021>, 2021.

IMA no. 2020-079

Argentotetrahedrite-(Hg)

 $\text{Ag}_6(\text{Cu}_4\text{Hg}_2)\text{Sb}_4\text{S}_{13}$ Dongping deposit, Baojing Co., Hunan, China
(28°36'05.1" N, 109°37'10.8" E)

Peng Wu, Xiangping Gu*, Kai Qu, Hang Yang, and Yanjuan Wang

*E-mail: guxp2004@163.com

Tetrahedrite group

Cubic: $\bar{I}43m$; structure determined $a = 10.6511(2) \text{ \AA}$ 4.356(9), 3.065(100), 2.661(20), 2.505(7), 2.085(9),
1.934(9), 1.881(34), 1.603(17)

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 M16114

How to cite: Wu, P., Gu, X., Qu, K., Yang, H., and Wang, Y.: Argentotetrahedrite-(Hg), IMA 2020-079, in: CNMNC Newsletter 59, Eur. J. Mineral., 33, <https://doi.org/10.5194/ejm-33-139-2021>, 2021.**IMA no. 2020-038a**

Parahibbingite

 $\text{Fe}_2^{2+}(\text{OH})_3\text{Cl}$

Karee mine, Rustenburg District, Bushveld complex, South Africa (25°40'17" S, 27°28'17" E)

Peter Koděra*, Juraj Majzlan, Kilian Pollok, Stefan Kiefer, František Šimko, Jarmila Luptáková, and Grant Cawthorn

*E-mail: koderal@uniba.sk

A dimorph of hibbingite

Trigonal: $R\bar{3}m$ $a = 6.94(5)$, $c = 14.5(2) \text{ \AA}$ 5.55(42), 2.94(22), 2.82(62), 2.31(100), 1.85(17), 1.73(36),
1.66(8), 1.53(15)

Type material is deposited in the collections of the Mineralogical Museum, Comenius University, Ilkovičova 6, Bratislava 84215, Slovakia, catalogue number 7601

How to cite: Koděra, P., Majzlan, J., Pollok, K., Kiefer, S., Šimko, F., Luptáková, J., and Cawthorn, G.: Parahibbingite, IMA 2020-038a, in: CNMNC Newsletter 59, Eur. J. Mineral., 33, <https://doi.org/10.5194/ejm-33-139-2021>, 2021.**3 Revised chemical formulae****3.1 Petrovite**

A paper on the new mineral petrovite has been recently published (*Mineral. Mag.*, 84, 691–698, 2020) in which the ideal chemical formula of the mineral is given as $\text{Na}_{10}\text{CaCu}_2(\text{SO}_4)_8$. With respect to the previously accepted formula $\text{Na}_8(\text{NaCu})\text{Cu}_2\text{Na}(\text{SO}_4)_8$ (cf. CNMNC Newsletter 52), Ca has the status of species-forming constituent and is partitioned at one of the six independent Na sites. After a careful consideration by the officers of the CNMNC, it turned out that $\text{Na}_{10}\text{CaCu}_2(\text{SO}_4)_8$ can not be an end-member formula for the mineral. In fact, it is an intermediate between the two compositions $\text{Na}_{12}\text{Cu}_2(\text{SO}_4)_8$ and $\text{Na}_8\text{Ca}_2\text{Cu}_2(\text{SO}_4)_8$, which correspond to the two end-members (with $x = 0$ and $x = 1$, respectively), of the general formula $\text{CuNa}_{6-2x}\text{Ca}_x(\text{SO}_4)_4$, where $0 \leq x \leq 1$. Examination of site occupancies indicates a structural formula $\text{Na}_8(\text{Na}_{0.53}\text{Ca}_{0.47})_2(\text{Na}_{0.53}\text{Ca}_{0.47})_2\text{Cu}_2(\text{SO}_4)_8$, which shows a $\text{Na}^+ + \text{Na}^+ = \text{Ca}^{2+} + \square$ substitution mechanism. However, sodium is the dominant cation at all Na sites of the structure; therefore, the ideal formula of petrovite should correspond to the formula of the predominant, Ca-free end-member constituent, $\text{Na}_{12}\text{Cu}_2(\text{SO}_4)_8$. The official IMA List of Minerals has been modified accordingly.

3.2 Chiyokoite

A paper on the new mineral chiyokoite has been recently published (*Can. Mineral.*, 58, 653–662, 2020) in which the ideal chemical formula of the mineral is given as $\text{Ca}_3\text{Si}(\text{CO}_3)[\text{B}(\text{OH})_4]\text{O}(\text{OH})_5 \cdot 12\text{H}_2\text{O}$. With respect to the previously accepted formula, arsenic is not an essential constituent anymore. Actually, the chemical and crystallographic data show that arsenic, in the form of the complex anion $(\text{AsO}_3)^{3-}$, is a subordinate constituent in the channels of the structure. These data were examined carefully by the CNMNC officers and were considered reliable. Accordingly, it was agreed to modify the formula of chiyokoite in the official IMA List of Minerals.