



## 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 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 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](mailto: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

\*Author for correspondence: Marco Pasero, Email: [marco.pasero@unipi.it](mailto:marco.pasero@unipi.it)

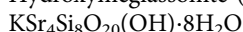
Cite this article: Miyawaki R., Hatert F., Pasero M. and Mills S.J. (2021) Newsletter 59. *Mineralogical Magazine* 85, 278–281. <https://doi.org/10.1180/mgm.2021.5>

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. (2021) Xuite, IMA 2018-135a. CNMNC Newsletter 59; *Mineralogical Magazine*, 85, <https://doi.org/10.1180/mgm.2021.5>

##### 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](mailto: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)

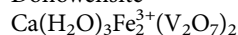
Type material is deposited in the collections of the University of Arizona Mineral Museum, 1601 E University Blvd,

Tucson, AZ 85719, USA, catalogue # 22691 (holotype), and the RRUFF Project, deposition # R200004 (cotype)

How to cite: Yang, H., Gu, X. and Scott, M.M. (2021) Hydroxymcglassonite-(K), IMA 2020-066. CNMNC Newsletter 59; *Mineralogical Magazine*, **85**, <https://doi.org/10.1180/mgm.2021.5>

IMA No. **2020-067**

Donowensite



North Wilson pit, Wilson Springs mine (a.k.a. Union Carbide mine), Wilson Springs (a.k.a. Potash Sulfur 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](mailto:akampf@nhm.org)

New structure type

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

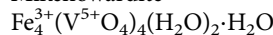
$a = 7.3452(4)$ ,  $b = 9.9291(4)$ ,  $c = 10.0151(7)$  Å,  $\alpha = 94.455(7)$ ,  
 $\beta = 98.476(7)$ ,  $\gamma = 100.779(7)^\circ$   
 9.88(100), 7.12(24), 4.176(17), 3.671(20), 3.283(44), 3.202(22),  
 3.110(19), 2.973(26)

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. (2021) Donowensite, IMA 2020-067. CNMNC Newsletter 59; *Mineralogical Magazine*, **85**, <https://doi.org/10.1180/mgm.2021.5>

IMA No. **2020-068**

Mikehowardite



North Wilson pit, Wilson Springs mine (a.k.a. Union Carbide mine), Wilson Springs (a.k.a. Potash Sulfur 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](mailto:akampf@nhm.org)

Structurally related to schubnelite

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

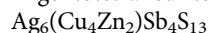
$a = 6.655(2)$ ,  $b = 6.669(1)$ ,  $c = 9.003(2)$  Å,  $\alpha = 76.515(5)$ ,  
 $\beta = 84.400(6)$ ,  $\gamma = 75.058(5)^\circ$   
 8.799(86), 6.449(100), 3.693(29), 3.198(88), 2.982(50), 2.909(59),  
 2.792(31), 2.145(30)

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. (2021) Mikehowardite, IMA 2020-068. CNMNC Newsletter 59; *Mineralogical Magazine*, **85**, <https://doi.org/10.1180/mgm.2021.5>

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 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@uniipi.it](mailto:cristian.biagioni@uniipi.it)

Tetrahedrite group

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

$a = 10.550(1)$  Å

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. (2021) Argentotetrahedrite-(Zn), IMA 2020-069. CNMNC Newsletter 59; *Mineralogical Magazine*, **85**, <https://doi.org/10.1180/mgm.2021.5>

IMA No. **2020-070**

Zolenskyite



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

Chi Ma\*

\*E-mail: [chima@caltech.edu](mailto:chima@caltech.edu)

The Fe analogue of breznaitite and a dimorph of daubrélite  
 Monoclinic:  $C2/m$

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

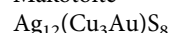
5.251(52), 2.977(47), 2.646(92), 2.625(46), 2.067(93), 2.057  
 (100), 1.720(47), 1.716(78)

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. (2021) Zolenskyite, IMA 2020-070. CNMNC Newsletter 59; *Mineralogical Magazine*, **85**, <https://doi.org/10.1180/mgm.2021.5>

IMA No. **2020-071**

Makotoite



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

Xiangping Gu\*

\*E-mail: [guxp2004@163.com](mailto:guxp2004@163.com)

The Cu-Au-ordered analogue of uytenbogaardtite

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

$a = 13.584(2)$ ,  $c = 16.781(3)$  Å

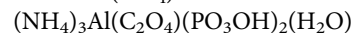
6.873(29), 2.788(16), 2.690(74), 2.576(100), 2.339(32), 2.104(44),  
 1.970(34), 1.762(19)

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

How to cite: Gu, X. (2021) Makotoite, IMA 2020-071. CNMNC Newsletter 59; *Mineralogical Magazine*, **85**, <https://doi.org/10.1180/mgm.2021.5>

IMA No. **2020-072**

Thebaite-(NH<sub>4</sub>)



125-foot level of the Rowley mine, ca. 20 km NW 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](mailto:akampf@nhm.org)

New structure type

Monoclinic:  $P2_1/c$ ; structure determined

$a = 11.156(9)$ ,  $b = 6.234(6)$ ,  $c = 18.65(2)$  Å,  $\beta = 102.93(1)^\circ$   
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. (2021) Thebaite-(NH<sub>4</sub>), IMA 2020-072. CNMNC Newsletter 59; *Mineralogical Magazine*, **85**, <https://doi.org/10.1180/mgm.2021.5>

## 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 Krüger\*, Hannes Krüger, Irina O. Galuskina, Evgeny V. Galuskin and Yevgeny Vapnik

\*E-mail: [biljana.krueger@uibk.ac.at](mailto:biljana.krueger@uibk.ac.at)

Sapphirine supergroup

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

$a = 10.5662(1)$ ,  $b = 10.9497(1)$ ,  $c = 9.08459(7)$  Å,  $\alpha = 106.4300(8)$ ,  $\beta = 95.7466(7)$ ,  $\gamma = 124.298(1)^\circ$   
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: Krüger, B., Krüger, H., Galuskina, I.O., Galuskin E.V. and Vapnik, Y. (2021) Devilliersite, IMA 2020-073. CNMNC Newsletter 59; *Mineralogical Magazine*, **85**, <https://doi.org/10.1180/mgm.2021.5>

### IMA No. 2020-074

Uranoclite

$(\text{UO}_2)_2(\text{OH})_2\text{Cl}_2(\text{H}_2\text{O})_4$

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](mailto: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. (2021) Uranoclite, IMA 2020-074. CNMNC Newsletter 59; *Mineralogical Magazine*, **85**, <https://doi.org/10.1180/mgm.2021.5>

### IMA No. 2020-075

Kenoargentotetrahedrite-(Zn)

$\text{Ag}_6(\text{Cu}_4\text{Zn}_2)\text{Sb}_4\text{S}_{12}\square$

Yindongpo mine, Weishancheng ore field, Tongbai County, 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](mailto:qukai_tcgs@foxmail.com)

Tetrahedrite group

Cubic:  $\bar{I}43m$ ; 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. (2021) Kenoargentotetrahedrite-(Zn), IMA 2020-075. CNMNC Newsletter 59; *Mineralogical Magazine*, **85**, <https://doi.org/10.1180/mgm.2021.5>

### IMA No. 2020-076

Zolotarevite

$\text{Na}_5\text{Zr}[\text{Si}_6\text{O}_{15}(\text{OH})_3]\cdot 3\text{H}_2\text{O}$

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](mailto:mikhailova@geoksc.apatity.ru)

Lovozeroite 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. (2021) Zolotarevite, IMA 2020-076. CNMNC Newsletter 59; *Mineralogical Magazine*, **85**, <https://doi.org/10.1180/mgm.2021.5>

### IMA No. 2020-078

Nitscheite

$(\text{NH}_4)_2[(\text{UO}_2)_2(\text{SO}_4)_3(\text{H}_2\text{O})_2]\cdot 3\text{H}_2\text{O}$

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](mailto: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. (2021) Nitscheite, IMA 2020-078. CNMNC Newsletter 59; *Mineralogical Magazine*, **85**, <https://doi.org/10.1180/mgm.2021.5>

#### IMA No. 2020-079

Argentotetrahedrite-(Hg)

$\text{Ag}_6(\text{Cu}_4\text{Hg}_2)\text{Sb}_4\text{S}_{13}$

Dongping deposit, Baojing County, 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](mailto:guxp2004@163.com)

Tetrahedrite group

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

$a = 10.6511(2)$  Å

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. (2021) Argentotetrahedrite-(Hg), IMA 2020-079. CNMNC Newsletter 59; *Mineralogical Magazine*, **85**, <https://doi.org/10.1180/mgm.2021.5>

#### 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](mailto:koderal@uniba.sk)

A dimorph of hibbingite

Trigonal:  $R\bar{3}m$

$a = 6.94(5)$ ,  $c = 14.5(2)$  Å

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 no. 7601

How to cite: Koděra, P., Majzlan, J., Pollok, K., Kiefer, S., Šimko, F., Luptáková, J. and Cawthorn, G. (2021) Parahibbingite, IMA 2020-038a. CNMNC Newsletter 59; *Mineralogical Magazine*, **85**, <https://doi.org/10.1180/mgm.2021.5>

#### REVISED CHEMICAL FORMULAE

A paper on the new mineral petrovite has been recently published (*Mineral. Mag.*, **84**, 2020, 691–698) 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  $\text{Na}_8(\text{Na}_{0.53}\text{Ca}_{0.47})_2(\text{Na}_{0.53}\square_{0.47})_2\text{Cu}_2(\text{SO}_4)_8$ , 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.

A paper on the new mineral chiyokoite has been recently published [*Can. Mineral.*, **58** (2020), 653–662] 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 no longer an essential constituent. 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.