



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

### Newsletter 65

Ritsuro Miyawaki (Chairman, CNMNC)<sup>1</sup>, Frédéric Hatert (Vice-Chairman, CNMNC)<sup>2</sup>, Marco Pasero (Vice-Chairman, CNMNC)<sup>3\*</sup> and Stuart J. Mills (Secretary, CNMNC)<sup>4</sup>

<sup>1</sup>Department of Geology, National Museum of Nature and Science, 4-1-1 Amakubo, Tsukuba 305-0005, Japan – [miyawaki@kahaku.go.jp](mailto:miyawaki@kahaku.go.jp); <sup>2</sup>Laboratoire de Minéralogie, Université de Liège, Bâtiment B18, Sart Tilman, 4000 Liège, Belgium – [fhatert@uliege.be](mailto:fhatert@uliege.be); <sup>3</sup>Dipartimento di Scienze della Terra, Università di Pisa, Via Santa Maria 53, 56126 Pisa, Italy – [marco.pasero@unipi.it](mailto:marco.pasero@unipi.it); and <sup>4</sup>Geosciences, Museum Victoria, PO Box 666, Melbourne, Victoria 3001, Australia – [smills@museum.vic.gov.au](mailto:smills@museum.vic.gov.au)

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 (ideal formula)

Mineral symbol

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 2021

##### IMA No. 2021-062a

Slyudyankaite

Sdy

$\text{Na}_{28}\text{Ca}_4(\text{Si}_{24}\text{Al}_{24}\text{O}_{96})(\text{SO}_4)_6(\text{S}_6)_{1/3}(\text{CO}_2)\cdot 2\text{H}_2\text{O}$

Malo-Bystrinskoe deposit, Baikal Lake area, eastern Siberia, Russia (51°40'50" N, 103°25'18" E)

Anatoly N. Sapozhnikov, Nadezhda B. Bolotina, Nikita V. Chukanov\*, Ekaterina V. Kaneva, Roman Y. Shendrik, Marina F. Vigasina and Larisa A. Ivanova

\*E-mail: [nikchukanov@yandex.ru](mailto:nikchukanov@yandex.ru)

Sodalite group

Triclinic: *P*1; structure determined

$a = 9.0523(4)$ ,  $b = 12.8806(6)$ ,  $c = 25.681(1)$  Å,  $\alpha = 89.988(2)$ ,

$\beta = 90.052(1)$ ,  $\gamma = 90.221(1)^\circ$

12.93(6), 6.45(20), 3.716(100), 2.878(12), 2.625(23), 2.431(6), 2.143(11), 1.784(9)

Type material is deposited in the collections of the Sidorov Mineralogical Museum (INRTU), Lermontova St. 83, Irkutsk 664074, Russia, registration numbers MMU/MF 27296 (holotype) and MMU/MF 27297 (cotype)

How to cite: Sapozhnikov, A.N., Bolotina, N.B., Chukanov, N.V., Kaneva, E.V., Shendrik, R.Y., Vigasina, M.F. and Ivanova, L.A. (2022) Slyudyankaite, IMA 2021-062a. CNMNC Newsletter 65; *Mineralogical Magazine*, **86**, <https://doi.org/10.1180/mgm.2022.14>

##### IMA No. 2021-081

Kozłowskiite

Kzw

$\text{Ca}_4\text{Fe}^{2+}\text{Sn}_3(\text{Si}_2\text{O}_7)_2(\text{Si}_2\text{O}_6\text{OH})_2$

In a pegmatite of the Karkonosze granite, Szklarska Poręba Huta quarry, Lower Silesia, Poland (50°49'40" N, 15°29'22" E) Adam Pieczka\*, Sylwia Zelek-Pogudź, Bożena Gołębiowska, Katarzyna M. Stadnicka and R. James Evans

\*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. (2022) Newsletter 65. *Mineralogical Magazine* 1–5. <https://doi.org/10.1180/mgm.2022.14>

\*E-mail: [pieczka@agh.edu.pl](mailto:pieczka@agh.edu.pl)

Kristiansenite group

Triclinic (pseudomonoclinic): C1; structure determined

$a = 10.0170(3)$ ,  $b = 8.3860(2)$ ,  $c = 13.3421(4)$  Å,  $\alpha = 90$ ,  $\beta = 109.050(3)$ ,  $\gamma = 90^\circ$

5.190(73), 4.569(30), 3.906(19), 3.153(65), 3.094(28), 3.089(100), 2.595(27), 2.141(31)

Type material is deposited in the collections of the Mineralogical Museum, University of Wrocław, Cybulskiego 30, 50-205 Wrocław, Poland, catalogue number MMWr IV7929

How to cite: Pieczka, A., Zelek-Pogudz, S., Gołębiowska, B., Stadnicka, K.M. and Evans, R.J. (2022) Kozłowskiite, IMA 2021-081. CNMNC Newsletter 65; *Mineralogical Magazine*, **86**, <https://doi.org/10.1180/mgm.2022.14>

#### IMA No. 2021-082

Medvedevite

Mvv

$\text{KMn}^{2+}\text{V}_2\text{O}_6\text{Cl}\cdot 2\text{H}_2\text{O}$

Toludskoe lava field, 2012-2013 Tolbachik Fissure Eruption, Plosky Tolbachik volcano, Kamchatka, Russia (55°45'02" N, 160°19'41" E)

Andrey P. Shablinskii\*, Margarita S. Avdontseva, Lidiya P. Vergasova, Stanislav K. Filatov, Evgenia Y. Avdontseva, Alexey V. Povolotskiy, Svetlana V. Moskaleva, Anatoly A. Kargopoltsev and Sergey N. Britvin

\*E-mail: [shablinskii.andrey@mail.ru](mailto:shablinskii.andrey@mail.ru)

New structure type

Monoclinic:  $P2_1/c$ ; structure determined

$a = 7.1863(2)$ ,  $b = 10.1147(3)$ ,  $c = 12.7252(4)$  Å,  $\beta = 106.243(3)^\circ$   
7.79(100), 5.70(11), 4.75(14), 3.89(29), 3.25(53), 3.05(19), 2.958(79), 2.850(33)

Type material is deposited in the collections of the Saint-Petersburg State University mineralogical museum, University Emb. 7/9, St. Petersburg 199034, Russia, catalogue number 1/19900

How to cite: Shablinskii, A.P., Avdontseva, M.S., Vergasova, L.P., Filatov, S.K., Avdontseva, E.Y., Povolotskiy, A.V., Moskaleva, S.V., Kargopoltsev, A.A. and Britvin, S.N. (2022) Medvedevite, IMA 2021-082. CNMNC Newsletter 65; *Mineralogical Magazine*, **86**, <https://doi.org/10.1180/mgm.2022.14>

#### IMA No. 2021-083

Tennantite-(Cd)

Tnt-Cd

$\text{Cu}_6(\text{Cu}_4\text{Cd}_2)\text{As}_4\text{S}_{13}$

Berenguela mining district, Pacajes Province, La Paz, Bolivia  
Cristian Biagioni\*, Anatoly V. Kasatkin, Jiří Sejkora, Fabrizio Nestola and Radek Škoda

\*E-mail: [cristian.biagioni@unipi.it](mailto:cristian.biagioni@unipi.it)

Tetrahedrite group

Cubic:  $\bar{I}43m$ ; structure determined

$a = 10.3088(2)$  Å  
4.206(7), 2.973(100), 2.574(12), 2.428(4), 2.019(3), 1.881(5), 1.821(27), 1.553(8)

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 5755/1 (holotype), and the Department of Mineralogy and Petrology, National Museum of Prague, Cirkusová 1740, 19300 Praha 9, Czech Republic, registration number P1P 47/2021 (cotype)

How to cite: Biagioni, C., Kasatkin, A.V., Sejkora, J., Nestola, F. and Škoda, R. (2022) Tennantite-(Cd), IMA 2021-083. CNMNC Newsletter 65; *Mineralogical Magazine*, **86**, <https://doi.org/10.1180/mgm.2022.14>

#### IMA No. 2021-084

Höslite

Hös

$\text{Fe}_3^+(\text{VO}_4)_2(\text{SO}_4)(\text{OH})(\text{H}_2\text{O})_4\cdot 3\text{H}_2\text{O}$

Struhadlo deposit, near the Struhadlo village, 10 km west of Klatovy, Plzeň region, Southern Bohemia, Czech Republic (49°23'51.11" N, 13°11'20.61" E)

Pavel Škácha\*, Jiří Sejkora, Gwladys Steciuk, Jakub Plášil and Radek Škoda

\*E-mail: [skachap@seznam.cz](mailto:skachap@seznam.cz)

Structurally similar to schubnelite

Monoclinic:  $P2_1/c$ ; structure determined

$a = 8.657(3)$ ,  $b = 10.443(4)$ ,  $c = 20.4996(7)$  Å,  $\beta = 93.32(2)^\circ$   
10.233(100), 6.800(17), 6.422(9), 5.116(10), 3.411(12), 3.233(8), 3.179(13), 3.125(9)

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 30/2021

How to cite: Škácha, P., Sejkora, J., Steciuk, G., Plášil, J. and Škoda, R. (2022) Höslite, IMA 2021-084. CNMNC Newsletter 65; *Mineralogical Magazine*, **86**, <https://doi.org/10.1180/mgm.2022.14>

#### IMA No. 2021-086

Gurzhiite

Grz

$\text{Al}(\text{UO}_2)(\text{SO}_4)_2\text{F}\cdot 10\text{H}_2\text{O}$

495 m level of the underground Mine #2, Bykogorskoe U deposit, Byk Mountain, Stavropol Krai, Northern Caucasus, Russia (44°11'05.4" N, 42°57'31.5" E)

Anatoly V. Kasatkin\*, Jakub Plášil, Nikita V. Chukanov, Radek Škoda, Fabrizio Nestola, Atali A. Agakhanov and Dmitry I. Belakovskiy

\*E-mail: [anatoly.kasatkin@gmail.com](mailto:anatoly.kasatkin@gmail.com)

A lower hydrate of straßmannite, with different structure

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

$a = 7.193(2)$ ,  $b = 11.760(2)$ ,  $c = 11.792(2)$  Å,  $\alpha = 67.20(3)$ ,  $\beta = 107.76(3)$ ,  $\gamma = 89.99(3)^\circ$

10.24(100), 6.76(10), 5.40(14), 5.11(54), 3.618(8), 3.405(11), 3.348(7), 3.065(11)

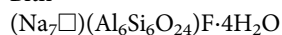
Type material is deposited in the collections of the Fersman Mineralogical Museum, Russian Academy of Sciences, Leninskiy Prospekt 18-2, Moscow 119071, Russia, registration number 5756/1

How to cite: Kasatkin, A.V., Plášil, J., Chukanov, N.V., Škoda, R., Nestola, F., Agakhanov, A.A. and Belakovskiy, D.I. (2022) Gurzhiite, IMA 2021-086. CNMNC Newsletter 65; *Mineralogical Magazine*, **86**, <https://doi.org/10.1180/mgm.2022.14>

## IMA No. 2021-088

Bolotinaite

Bltn



In den Dellen (Ziegłowski) pumice quarry, 1.5 km northeast of Mendig, Laach Lake (Laacher See) paleovolcano, Eifel region, Rhineland-Palatinate, Germany (50°23'34" N, 7°17'04" E)

Nikita V. Chukanov\*, Natalia V. Zubkova, Christof Schäfer, Igor V. Pekov, Marina F. Vigasina, Dmitry I. Belakovskiy, Sergey N. Britvin, Vasilii O. Yapaskurt and Dmitry Y. Pushcharovskiy

\*E-mail: [nikchukanov@yandex.ru](mailto:nikchukanov@yandex.ru)

Sodalite group

Cubic:  $I\bar{4}3m$ ; structure determined
 $a = 9.0228(1) \text{ \AA}$ 

6.36(47), 4.502(10), 3.679(100), 2.851(28), 2.603(29), 2.126(18), 1.770(7), 1.595(7)

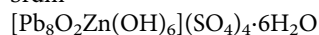
Type material is deposited in the collections of the Fersman Mineralogical Museum, Russian Academy of Sciences, Leninskiy Prospekt 18-2, Moscow 119071, Russia, registration number 5754/1

How to cite: Chukanov, N.V., Zubkova, N.V., Schäfer, C., Pekov, I.V., Vigasina, M.F., Belakovskiy, D.I., Britvin, S.N., Yapaskurt, V.O. and Pushcharovskiy, D.Y. (2022) Bolotinaite, IMA 2021-088. CNMNC Newsletter 65; *Mineralogical Magazine*, **86**, <https://doi.org/10.1180/mgm.2022.14>

## IMA No. 2021-089

Sulfatoredmondite

Srdm



Redmond mine, Haywood Co., North Carolina, USA (35° 40'49" N, 83°01'07" W)

Anthony R. Kampf\*, Jason B. Smith, John M. Hughes, Chi Ma and Christopher Emproto

\*E-mail: [akampf@nhm.org](mailto:akampf@nhm.org)

Structurally related to redmondite and hydroredmondite

Monoclinic:  $C2/m$ ; structure determined
 $a = 17.294(2)$ ,  $b = 7.3668(9)$ ,  $c = 12.727(2) \text{ \AA}$ ,  $\beta = 110.622(9)^\circ$ 

8.10(100), 6.23(48), 5.86(46), 3.115(78), 2.892(63), 2.779(63), 2.706(47), 1.827(46)

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 76181, 76182 and 76183

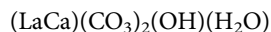
How to cite: Kampf, A.R., Smith, J.B., Hughes, J.M., Ma, C. and Emproto, C. (2022) Sulfatoredmondite, IMA 2021-089. CNMNC Newsletter 65; *Mineralogical Magazine*, **86**, <https://doi.org/10.1180/mgm.2022.14>

## NEW MINERAL PROPOSALS APPROVED IN JANUARY 2022

## IMA No. 2021-090

Calcioancylite-(La)

Canc-La



Gejiu intrusion, Honghe Hani and Yi Autonomous Prefecture, Yunnan Province, China (23°29'40" N, 103°04'41" E)

Yanjuan Wang, Xiangping Gu, Guochen Dong\*, Zengqian Hou, Zhusen Yang, Guang Fan, Yufei Wang, Chao Tang, Yinhang Cheng and Kai Qu

\*E-mail: [donggc@cugb.edu.cn](mailto:donggc@cugb.edu.cn)

Ancylite group

Orthorhombic:  $Pm\bar{c}n$ ; structure determined
 $a = 5.0253(3)$ ,  $b = 8.5152(6)$ ,  $c = 7.2717(6) \text{ \AA}$ 

4.322(75), 3.693(68), 2.956(80), 2.640(47), 2.520(55), 2.335(100), 2.077(44), 2.012(42)

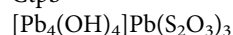
Type material is deposited in the mineralogical collections of the Geological Museum of China, No. 16, Yangrou Hutong, Xisi, Beijing 100031, People's Republic of China, catalogue number M16129

How to cite: Wang, Y., Gu, X., Dong, G., Hou, Z., Yang, Z., Fan, G., Wang, Y., Tang, C., Cheng, Y. and Qu, K. (2022) Calcioancylite-(La), IMA 2021-090. CNMNC Newsletter 65; *Mineralogical Magazine*, **86**, <https://doi.org/10.1180/mgm.2022.14>

## IMA No. 2021-091

Cubothioplumbite

Ctpb



Redmond mine, Haywood Co., North Carolina, USA (35° 40'49" N, 83°01'07" W)

Anthony R. Kampf\*, Jason B. Smith, John M. Hughes, Chi Ma and Christopher Emproto

\*E-mail: [akampf@nhm.org](mailto:akampf@nhm.org)

A dimorph of hexathioplumbite (IMA No. 2021-092; this Newsletter)

Cubic:  $Pa\bar{3}$ ; structure determined
 $a = 14.918(1) \text{ \AA}$ 

5.28(56), 3.732(57), 3.619(100), 3.346(64), 3.262(81), 2.490(92), 1.803(52), 1.700(49)

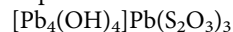
Cotype material is deposited in the mineralogical collections of the Natural History Museum of Los Angeles County, 900 Exposition Boulevard, Los Angeles, CA 90007, USA, catalogue numbers 76184, 76185 and 76186

How to cite: Kampf, A.R., Smith, J.B., Hughes, J.M., Ma, C. and Emproto, C. (2022) Cubothioplumbite, IMA 2021-091. CNMNC Newsletter 65; *Mineralogical Magazine*, **86**, <https://doi.org/10.1180/mgm.2022.14>

## IMA No. 2021-092

Hexathioplumbite

Htpb



Redmond mine, Haywood Co., North Carolina, USA (35° 40'49" N, 83°01'07" W)

Anthony R. Kampf\*, Jason B. Smith, John M. Hughes, Chi Ma and Christopher Emproto

\*E-mail: [akampf@nhm.org](mailto:akampf@nhm.org)

A dimorph of cubothioplumbite (IMA No. 2021-091; this Newsletter)

Hexagonal:  $P6_3$ ; structure determined
 $a = 10.721(1)$ ,  $c = 8.6541(6) \text{ \AA}$ 

6.32(67), 3.511(100), 3.359(70), 3.249(86), 2.733(77), 2.536(89), 2.476(43), 1.837(52)

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 76187, 76188 and 76189

How to cite: Kampf, A.R., Smith, J.B., Hughes, J.M., Ma, C. and Empro, C. (2022) Hexathioplumbite, IMA 2021-092. CNMNC Newsletter 65; *Mineralogical Magazine*, **86**, <https://doi.org/10.1180/mgm.2022.14>

#### IMA No. 2021-094

Ferrofettelite

Fftt

$[\text{Ag}_6\text{As}_2\text{S}_7][\text{Ag}_{10}\text{FeAs}_2\text{S}_8]$

Glasberg quarry, Nieder-Beerbach, Odenwald, Germany (49° 47'49" N, 8°41'38" E)

Luca Bindi\* and Robert T. Downs

\*E-mail: [luca.bindi@unifi.it](mailto:luca.bindi@unifi.it)

The Fe analogue of fettelite

Monoclinic:  $C2$ ; structure determined

$a = 26.011(2)$ ,  $b = 15.048(1)$ ,  $c = 15.513(1)$  Å,  $\beta = 90.40(1)^\circ$   
3.18(50), 3.014(100), 3.004(60), 2.930(15), 2.755(40), 2.501(30), 2.484(20), 1.880(30)

Type material is deposited in the collections of the University of Arizona Gem and Mineral Museum, 115 N Church Ave, Tucson, AZ 85701, USA, catalogue number 22716

How to cite: Bindi, L. and Downs, R.T. (2022) Ferrofettelite, IMA 2021-094. CNMNC Newsletter 65; *Mineralogical Magazine*, **86**, <https://doi.org/10.1180/mgm.2022.14>

#### IMA No. 2021-096

Franksousaite

Fns

$\text{PbCu}(\text{Se}^{6+}\text{O}_4)(\text{OH})_2$

El Dragón mine, Antonio Quijarro Province, Potosí Department, Bolivia (19°49'15" S, 65°55'00" W)

Hexiong Yang\*, James A. McGlasson, Ronald B. Gibbs and Robert T. Downs

\*E-mail: [hyang@arizona.edu](mailto:hyang@arizona.edu)

The  $\text{Se}^{6+}$  analogue of linarite

Monoclinic:  $P2_1/m$ ; structure determined

$a = 9.8208(3)$ ,  $b = 5.7340(2)$ ,  $c = 4.7498(1)$  Å,  $\beta = 102.683(2)^\circ$   
9.548(22), 4.917(24), 4.578(35), 3.602(60), 3.193(100), 3.150(50), 2.621(21), 1.828(21)

Type material is deposited in the collections of the University of Arizona Gem and Mineral Museum, 115 N Church Ave, Tucson, AZ 85701, USA, catalogue number 22713 (holotype), and the RRUFF Project, deposition number R210012 (cototype)

How to cite: Yang, H., McGlasson, J.A., Gibbs, R.B. and Downs, R.T. (2022) Franksousaite, IMA 2021-096. CNMNC Newsletter 65; *Mineralogical Magazine*, **86**, <https://doi.org/10.1180/mgm.2022.14>

#### IMA No. 2021-097

Mariakrite

Mari

$[\text{Ca}_4\text{Al}_2(\text{OH})_{12}(\text{H}_2\text{O})_4][\text{Fe}_2\text{S}_4]$

Ca. 2 km south-east of the Hatrum Junction (road no. 31), Hatrum Basin, Negev Desert, Israel

Michail N. Murashko, Yevgeny Vapnik, Natalia S. Vlasenko, Oleg S. Vereshchagin, Yulia S. Shelukhina, Igor V. Pekov and Sergey N. Britvin\*

\*E-mail: [sbritvin@gmail.com](mailto:sbritvin@gmail.com)

Hydrotalcite supergroup

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

$a = 5.7107(2)$ ,  $b = 9.9952(4)$ ,  $c = 10.9095(4)$  Å,  $\alpha = 98.678(3)$ ,  $\beta = 90.100(3)$ ,  $\gamma = 90.019(3)^\circ$

10.83(100), 9.90(39), 5.42(75), 3.96(22), 3.523(19), 2.856(37), 2.400(23), 2.241(20)

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 5694/1  
How to cite: Murashko, M.N., Vapnik, Y., Vlasenko, N.S., Vereshchagin, O.S., Shelukhina, Y.S., Pekov, I.V. and Britvin, S.N. (2022) Mariakrite, IMA 2021-097. CNMNC Newsletter 65; *Mineralogical Magazine*, **86**, <https://doi.org/10.1180/mgm.2022.14>

#### IMA No. 2021-098

Tetrahedrite-(Mn)

Ttr-Mn

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

Teine mine, Sapporo, Hokkaido, Japan (43°05'58" N, 141°11'48" E)  
Koichi Momma\*, Masaaki Shimizu, Yoko Kusaba and Yoshiya Ohki

\*E-mail: [k-momma@kahaku.go.jp](mailto:k-momma@kahaku.go.jp)

Tetrahedrite group

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

$a = 10.35953(6)$  Å  
3.669(9), 2.995(100), 2.773(6), 2.593(15), 2.445(7), 1.893(6), 1.833(29), 1.563(12)

Type material is deposited in the mineralogical collections of the National Museum of Nature and Science, 4-1-1 Amakubo, Tsukuba, Ibaraki 305-0005, Japan, specimen number MSN-M49019

How to cite: Momma, K., Shimizu, M., Kusaba, Y. and Ohki, Y. (2022) Tetrahedrite-(Mn), IMA 2021-098. CNMNC Newsletter 65; *Mineralogical Magazine*, **86**, <https://doi.org/10.1180/mgm.2022.14>

### NOMENCLATURE/CLASSIFICATION PROPOSALS APPROVED IN JANUARY 2022

#### Revised formula for lithiomarsturite, $\text{LiCaMn}_3\text{Si}_5\text{O}_{14}(\text{OH})$

In the IMA List of Minerals the chemical formula of lithiomarsturite is given as  $\text{LiMn}_2^{2+}\text{Ca}_2\text{Si}_5\text{O}_{14}(\text{OH})$ . However, a crystal structure study carried out on holotype material (*Am. Mineral.*, **75**, 409–414, 1990) clearly shows that Ca is hosted at the 7-fold coordinated M4 site ( $^{\text{M}4}\text{Ca}_{1.00}$ ), whereas Mn is the dominant constituent at the three 6-fold coordinated sites:  $^{\text{M}1}\text{Mn}_{1.00}$ ,  $^{\text{M}2}(\text{Mn}_{0.77}\text{Ca}_{0.23})$  and  $^{\text{M}3}\text{Mn}_{1.00}$ . Accordingly, the end-member formula should be written as  $\text{LiCaMn}_3\text{Si}_5\text{O}_{14}(\text{OH})$ . This formula matches the formula of the related mineral marsturite,  $\text{NaCaMn}_3\text{Si}_5\text{O}_{14}(\text{OH})$ . This is an executive decision taken by the officers of the IMA-CNMNC.

#### IMA 21-I: A proposed correction to the formula of rouvilleite

Proposal 21-I is accepted, and the formula of rouvilleite is changed from  $\text{Na}_3\text{CaMn}^{2+}(\text{CO}_3)_3\text{F}$  to  $\text{Na}_3\text{Ca}_2(\text{CO}_3)_3\text{F}$ .

**IMA 21-J: Redefinition of angastonite as an amorphous mineral**

Proposal 21-J is accepted, and angastonite is redefined as an amorphous mineral species, with the ideal formula  $\text{CaMgAl}_2(\text{PO}_4)_2(\text{OH})_4 \cdot 7\text{H}_2\text{O}$ .

**IMA 21-K: Grandviewite,  $\text{Cu}_3\text{Al}_2(\text{SO}_4)(\text{OH})_{10} \cdot \text{H}_2\text{O}$ : proposal for its redefinition**

Proposal 21-K is accepted, and grandviewite is redefined as a hydrated copper-aluminum hydroxy-sulfate, having the ideal formula  $\text{Cu}_3\text{Al}_2(\text{SO}_4)(\text{OH})_{10} \cdot \text{H}_2\text{O}$  ( $Z = 2$ ) and a triclinic symmetry,

with space group  $P\bar{1}$ ,  $a = 6.002(3)$ ,  $b = 10.54(3)$ ,  $c = 11.249(8)$  Å,  $\alpha = 72.1(2)$ ,  $\beta = 81.6(6)$ ,  $\gamma = 86.1(8)^\circ$ .

**IMA 21-L: Discreditation of luinaite-(OH),  $(\text{Na}, \square)(\text{Fe}^{2+}, \text{Mg})_3\text{Al}_6(\text{BO}_3)_3\text{Si}_6\text{O}_{18}(\text{OH})_4$ , a mineral species of the tourmaline supergroup**

Proposal 21-L is accepted, and luinaite-(OH) is discredited. This monoclinic tourmaline-type species, with a simplified composition  $(\text{Na}, \square)(\text{Fe}^{2+}, \text{Mg})_3\text{Al}_6(\text{BO}_3)_3\text{Si}_6\text{O}_{18}(\text{OH})_4$ , was approved with IMA number 2009-046. It is now considered a structurally similar polymorph of schorl, since it only differs in terms of a slight structural distortion from the typical trigonal tourmaline structure.