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CNMNC Newsletter

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

NEWSLETTER 42

New minerals and nomenclature modifications approved in 2018

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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

https://doi.org/10.1180/mgm.2018.71

NEW MINERAL PROPOSALS APPROVED IN FEBRUARY 2018

IMA No. **2017-094**
Ammoniolasalite
$[(NH_4)_2Mg_2(H_2O)_{20}]\cdot[V_{10}O_{28}]$
Burro mine, Slick Rock district, San Miguel Co., Colorado, USA (38°2'42"N, 108°53'23"W)
Anthony R. Kampf*, Barbara P. Nash, Paul M. Adams, Joe Marty and John M. Hughes
*E-mail: akampf@nhm.org
The ammonium analogue of lasalite
Monoclinic: *C*2/*c*; structure determined
$a = 24.478(3)$, $b = 10.9413(4)$, $c = 17.551(1)$ Å, $\beta = 119.257(7)°$
10.64(24), 9.43(100), 8.57(21), 7.62(26), 6.80 (32), 2.891(13), 2.725(23), 2.125(13)
Cotype material is deposited in the mineralogical collections of the Natural History Museum of Los Angeles County, 900 Exposition Blvd, Los Angeles, California, USA, catalogue numbers 67477, 67478, 67479, 67480 and 67481
How to cite: Kampf, A.R., Nash, B.P., Adams, P.M., Marty, J. and Hughes, J.M. (2018) Ammoniolasalite, IMA 2017-094. CNMNC Newsletter No. 42, April 2018, page 446; *Mineralogical Magazine*, **82**, 445–451.

IMA No. **2017-099**
Ferrierite-NH_4
$(NH_4,Mg_{0.5})_5(Al_5Si_{31}O_{72})\cdot 22H_2O$
Libous lignite quarry, near Chomutov, Ústí Region, Bohemia, Czech Republic
Nikita V. Chukanov*, Igor V. Pekov, Dmitriy I. Belakovskiy and Sergey N. Britvin
*E-mail: nikchukanov@yandex.ru
Zeolite supergroup
Orthorhombic: *Immm*
$a = 19.10(1)$, $b = 14.15(1)$, $c = 7.489(3)$ Å
9.52(97), 6.95(28), 6.60(19), 3.988(61), 3.784 (19), 3.547(73), 3.482(100), 3.143(37)
Type material is deposited in the collections of the Fersman Mineralogical Museum, Russian Academy of Sciences, Moscow, Russia, registration number 5120/1
How to cite: Chukanov, N.V., Pekov, I.V., Belakovskiy, D.I. and Britvin, S.N. (2018) Ferrierite-NH_4, IMA 2017-099. CNMNC Newsletter No. 42, April 2018, page 446; *Mineralogical Magazine*, **82**, 445–451.

IMA No. **2017-100**
Nollmotzite
$Mg[U^{5+}(U^{6+}O_2)_2O_4F_3]\cdot 4H_2O$
Clara mine, Black Forest Mountains, Baden-Württemberg, Germany (48°22'59"N, 8° 14'47"E)
Jakub Plášil*, Anthony R. Kampf, Radek Škoda and Jiří Čejka
*E-mail: plasil@fzu.cz
New structure type
Monoclinic: *Cm*; structure determined
$a = 7.1122(4)$, $b = 11.7733(7)$, $c = 8.2075(4)$ Å, $\beta = 98.623(4)°$
8.10(100), 4.060(31), 3.518(30), 3.420(54), 3.237(22), 3.083(26), 2.710(17), 2.015(32)
Cotype material is deposited in the mineralogical collections of the Natural History Museum of Los Angeles County, 900 Exposition Blvd, Los Angeles, California, USA, catalogue numbers 66647, 66648 and 66649
How to cite: Plášil, J., Kampf, A.R., Škoda, R. and Čejka, J. (2018) Nollmotzite, IMA 2017-100. CNMNC Newsletter No. 42, April 2018, page 446; *Mineralogical Magazine*, **82**, 445–451.

IMA No. **2017-101**
Dellagiustaite
$V^{2+}Al_2O_4$
Sierra de Comechingones, San Luis, Argentina
Fernando Cámara*, Renato Pagano, Adriana Pagano and Luca Bindi
*E-mail: fernando.camara@unimi.it
Spinel supergroup
Cubic: $Fd\bar{3}\,m$; structure determined
$a = 8.1950(1)$ Å
2.469(19), 2.047(58), 1.576(38), 1.447(100), 1.182(27), 1.023(87), 0.915(21), 0.836(35)
Type material is deposited in the mineralogical collections of the Museo delle Collezioni di Mineralogia, Gemmologia, Petrologia e Giacimentologia, Dipartimento di Scienze della Terra "A. Desio", Università di Milano, catalogue number MCMGPG-H2017-001
How to cite: Cámara, F., Pagano, R., Pagano, A. and Bindi, L. (2018) Dellagiustaite, IMA 2017-101. CNMNC Newsletter No. 42, April 2018, page 446; *Mineralogical Magazine*, **82**, 445–451.

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IMA No. **2017-102**
Potassic-richterite
$K(NaCa)Mg_5Si_8O_{22}(OH)_2$
Stora Pajsberg mine, Filipstad, Värmland, Sweden (59°47.04'N, 14°19.03'E); or Harstigen mine, Filipstad, Värmland, Sweden (59°47.10'N, 14°18.84'E)
Dan Holtstam*, Fernando Cámara, Henrik Skogby and Andreas Karlsson
*E-mail: dan.holtstam@nrm.se
Amphibole supergroup
Monoclinic: *C2/m*; structure determined
$a = 9.9977(3)$, $b = 18.0409(4)$, $c = 5.2794(2)$ Å, $\beta = 104.465(4)°$
8.55(36), 3.303(56), 3.181(100), 2.847(50), 2.714(37), 2.173(25), 1.668(27), 1.456(32)
Type material is deposited in the mineralogical collections of the Department of Geosciences, Swedish Museum of Natural History, Box 50007, SE-10405 Stockholm, Sweden, collection number NRM19311387
How to cite: Holtstam, D., Cámara, F., Skogby, H. and Karlsson, A. (2018) Potassic-richterite, IMA 2017-102. CNMNC Newsletter No. 42, April 2018, page 447; *Mineralogical Magazine*, **82**, 445–451.

IMA No. **2017-103**
Magnesiofluckite
$CaMg(AsO_3OH)_2(H_2O)_2$
Torrecillas mine, Salar Grande, Iquique Province, Tarapacá Region, Chile (20°58'13"S, 70° 8'17"W)
Anthony R. Kampf*, Barbara P. Nash, Maurizio Dini and Arturo A. Molina Donoso
*E-mail: akampf@nhm.org
The Mg analogue of fluckite
Triclinic: $P\bar{1}$; structure determined
$a = 8.4143(6)$, $b = 7.5321(5)$, $c = 6.8917(4)$ Å, $\alpha = 82.477(6)$, $\beta = 97.682(6)$, $\gamma = 95.379(6)°$
7.46(78), 4.92(43), 4.191(45), 3.511(100), 3.248 (81), 2.953(62), 2.796(51), 2.679(75)
Type material is deposited in the mineralogical collections of the Natural History Museum of Los Angeles County, 900 Exposition Blvd, Los Angeles, California, USA, catalogue number 67257
How to cite: Kampf, A.R., Nash, B.P., Dini, M. and Molina Donoso, A.A. (2018) Magnesiofluckite, IMA 2017-103. CNMNC Newsletter No. 42, April 2018, page 447; *Mineralogical Magazine*, **82**, 445–451.

NEW MINERAL PROPOSALS APPROVED IN MARCH 2018

IMA No. **2017-084**
Lasnierite
$(Ca,Sr)(Mg,Fe^{2+})_2Al(P[O,F]_4)_3$
Mount Ibity, ca. 30 km NNE of Soavina, Ambatofinandrahana district, and 10 km SW of Manandona, Antsirabé 2 District, Vakinankaratra Region, Antananarivo Province, Madagascar
Benjamin Rondeau*, Bertrand Devouard, Damien Jacob, Pascal Roussel, Nicolas Stéphant, Constance Boulet, Valentin Mollé, Marianna Corre, Emmanuel Fritsch, Cristiano Ferraris and Gian Carlo Parodi
*E-mail: benjamin.rondeau@univ-nantes.fr
New structure type
Orthorhombic: *Pbcn*; structure determined
$a = 6.2771(3)$, $b = 17.684(3)$, $c = 8.1631(4)$ Å
4.421(83), 3.802(63), 3.706(100), 3.305(99), 2.890(90), 2.781(69), 2.772(67), 2.601(97)
Type material is deposited in the mineralogical collections of the Muséum National d'Histoire Naturelle (MNHN), 61 rue Buffon, 75005 Paris, France, registration number MNHN 217.001
How to cite: Rondeau, B., Devouard, B., Jacob, D., Roussel, P., Stéphant, N., Boulet, C., Mollé, V., Corre, M., Fritsch, E., Ferraris, C. and Parodi, G.C. (2018) Lasnierite, IMA 2017-084. CNMNC Newsletter No. 42, April 2018, page 447; *Mineralogical Magazine*, **82**, 445–451.

IMA No. **2017-104**
Vandermeerscheite
$K_2[(UO_2)_2V_2O_8]\cdot 2H_2O$
Schellkopf, Brenk, Eifel, Rhineland-Palatinate, Germany
Jakub Plášil*, Anthony R. Kampf, Radek Škoda and Jiří Čejka
*E-mail: plasil@fzu.cz
Chemically close to carnotite
Monoclinic: $P2_1/n$; structure determined
$a = 8.292(2)$, $b = 8.251(3)$, $c = 10.188(3)$ Å, $\beta = 110.84(4)°$
7.49(100), 4.147(22), 3.738(32), 3.616(20), 3.254(31), 3.132(21), 2.989(41), 2.091(13)
Cotype material is deposited in the mineralogical collections of the Natural History Museum of Los Angeles County, 900 Exposition Blvd, Los Angeles, California, USA, catalogue numbers 67260, 67261 and 67262

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How to cite: Plášil, J., Kampf, A.R., Škoda, R. and Čejka, J. (2018) Vandermeerscheite, IMA 2017-104. CNMNC Newsletter No. 42, April 2018, page 447; *Mineralogical Magazine*, **82**, 445–451.

IMA No. **2017-105**

Khrenovite

$Na_3Fe_2^{3+}(AsO_4)_3$

Arsenatnaya fumarole, Second scoria cone of the Northern Breakthrough of the Great Tolbachik Fissure Eruption, Tolbachik volcano, Kamchatka peninsula, Far-Eastern Region, Russia (55°41'N, 160°14'E, 1200 m asl)

Igor V. Pekov*, Natalia N. Koshlyakova, Dmitry I. Belakovskiy, Marina F. Vigasina, Natalia V. Zubkova, Atali A. Agakhanov, Sergey N. Britvin, Evgeny G. Sidorov and Dmitry Y. Pushcharovsky

*E-mail: igorpekov@mail.ru

Alluaudite group

Monoclinic: *C*2/*c*; structure determined

$a = 12.2394(7)$, $b = 12.7967(5)$, $c = 6.6589(4)$ Å, $\beta = 112.953\ (7)°$

6.40(48), 5.639(48), 3.582(41), 3.198(62), 2.939 (33), 2.824(60), 2.785(100), 2.612(33)

Type material is deposited in the collections of the Fersman Mineralogical Museum, Russian Academy of Sciences, Moscow, Russia, registration number 5028/1

How to cite: Pekov, I.V., Koshlyakova, N.N., Belakovskiy, D.I., Vigasina, M.F., Zubkova, N.V., Agakhanov, A.A., Britvin, S.N., Sidorov, E.G. and Pushcharovsky, D.Y. (2018) Khrenovite, IMA 2017-105. CNMNC Newsletter No. 42, April 2018, page 448; *Mineralogical Magazine*, **82**, 445–451.

IMA No. **2017-106**

Chinchorroite

$Na_2Mg_5(As_2O_7)_2(AsO_3OH)_2(H_2O)_{10}$

Torrecillas mine, Salar Grande, Iquique Province, Tarapacá Region, Chile (20°58'13"S, 70°8'17"W)

Anthony R. Kampf*, Barbara P. Nash, Maurizio Dini and Arturo A. Molina Donoso

*E-mail: akampf@nhm.org

New structure type

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

$a = 8.7777(2)$, $b = 8.8570(3)$, $c = 9.7981(7)$ Å, $\alpha = 91.097(6)$, $\beta = 110.544(8)$, $\gamma = 103.167(7)°$

9.10(100), 8.63(54), 5.25(32), 4.034(49), 3.521 (35), 3.036(53), 2.811(42), 2.568(36)

Type material is deposited in the mineralogical collections of the Natural History Museum of Los Angeles County, 900 Exposition Blvd, Los Angeles, California, USA, catalogue number 67257

How to cite: Kampf, A.R., Nash, B.P., Dini, M. and Molina Donoso, A.A. (2018) Chinchorroite, IMA 2017-106. CNMNC Newsletter No. 42, April 2018, page 448; *Mineralogical Magazine*, **82**, 445–451.

IMA No. **2017-107**

Nöggerathite-(Ce)

$(Ce,Ca)_2Zr_2(Nb,Ti)(Ti,Nb)_2Fe^{2+}O_{14}$

In den Dellen (Zieglowski) pumice quarry, 1.5 km NE of Mendig, Laach Lake (Laacher See) volcano, Eifel region, Rhineland-Palatinate, Germany

Nikita V. Chukanov*, Natalia V. Zubkova, Sergey N. Britvin, Igor V. Pekov, Marina F. Vigasina, Christof Schäfer, Bernd Ternes, Willi Schüller, Vera N. Ermolaeva and Dmitry Y. Pushcharovsky

*E-mail: chukanov@icp.ac.ru

Isostructural with zirconolite

Orthorhombic: *Cmca*; structure determined

$a = 7.2985(3)$, $b = 14.1454(4)$, $c = 10.1607(4)$ Å

3.689(10), 2.963(91), 2.903(100), 2.540(39), 1.823(15), 1.796(51), 1.543(20), 1.519(16)

Type material is deposited in the collections of the Fersman Mineralogical Museum, Russian Academy of Sciences, Moscow, Russia, registration number 5123/1

How to cite: Chukanov, N.V., Zubkova, N.V., Britvin, S.N., Pekov, I.V., Vigasina, M.F., Schäfer, C., Ternes, B., Schüller, W., Ermolaeva, V.N. and Pushcharovsky, D.Y. (2018) Nöggerathite-(Ce), IMA 2017-107. CNMNC Newsletter No. 42, April 2018, page 448; *Mineralogical Magazine*, **82**, 445–451.

IMA No. **2017-108**

Rhabdoborite-(V)

$Mg_{12}(V^{5+},Mo^{6+},W^{6+})_{1.5}O_6\{[BO_3]_{6-x}[(P,As)O_4]_xF_{2-x}\}$ $(x < 1)$

Arsenatnaya fumarole, Second scoria cone of the Northern Breakthrough of the Great Tolbachik Fissure Eruption, Tolbachik volcano, Kamchatka peninsula, Far-Eastern Region, Russia (55°41'N, 160°14'E, 1200 m asl)

Igor V. Pekov*, Natalia V. Zubkova, Natalia N. Koshlyakova, Dmitry I. Belakovskiy, Marina F. Vigasina, Atali A. Agakhanov, Sergey

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N. Britvin, Evgeny G. Sidorov and Dmitry Y. Pushcharovsky
*E-mail: igorpekov@mail.ru
Isostructural with rhabdoborite-(W) (IMA No. 2017-109)
Hexagonal: $P6_3$; structure determined
$a = 10.6314(4)$, $c = 4.5661(2)$ Å
9.17(100), 5.301(44), 3.472(76), 2.763(64), 2.547(61), 2.226(79), 1.701(63), 1.474(31)
Type material is deposited in the collections of the Fersman Mineralogical Museum, Russian Academy of Sciences, Moscow, Russia, registration number 5125/1
How to cite: Pekov, I.V., Zubkova, N.V., Koshlyakova, N.N., Belakovskiy, D.I., Vigasina, M.F., Agakhanov, A.A., Britvin, S.N., Sidorov, E. G. and Pushcharovsky, D.Y. (2018) Rhabdoborite-(V), IMA 2017-108. CNMNC Newsletter No. 42, April 2018, page 448; *Mineralogical Magazine*, **82**, 445–451.

IMA No. **2017-109**
Rhabdoborite-(W)
$Mg_{12}(W^{6+},V^{5+})_{1.5}O_6\{[BO_3]_{6-x}[(P,As)O_4]_xF_{2-x}\}$ ($x < 1$)
Arsenatnaya fumarole, Second scoria cone of the Northern Breakthrough of the Great Tolbachik Fissure Eruption, Tolbachik volcano, Kamchatka peninsula, Far-Eastern Region, Russia (55°41'N, 160°14'E, 1200 m asl)
Igor V. Pekov*, Natalia V. Zubkova, Natalia N. Koshlyakova, Dmitry I. Belakovskiy, Marina F. Vigasina, Atali A. Agakhanov, Sergey N. Britvin, Evgeny G. Sidorov and Dmitry Y. Pushcharovsky
*E-mail: igorpekov@mail.ru
Isostructural with rhabdoborite-(V) (IMA No. 2017-108)
Hexagonal: $P6_3$; structure determined
$a = 10.6366(5)$, $c = 4.5701(3)$ Å
9.18(100), 5.304(38), 4.595(25), 3.479(61), 2.766(29), 2.550(30), 2.228(35), 1.703(25)
Type material is deposited in the collections of the the Fersman Mineralogical Museum, Russian Academy of Sciences, Moscow, Russia, registration number 5126/1
How to cite: Pekov, I.V., Zubkova, N.V., Koshlyakova, N.N., Belakovskiy, D.I., Vigasina, M.F., Agakhanov, A.A., Britvin, S.N., Sidorov, E. G. and Pushcharovsky, D.Y. (2018) Rhabdoborite-(W), IMA 2017-109. CNMNC Newsletter No. 42, April 2018, page 449; *Mineralogical Magazine*, **82**, 445–451.

IMA No. **2017-110**
Pararaisaite
$CuMg[Te^{6+}O_4(OH)_2]\cdot 6H_2O$
North Star mine, Mammoth, Tintic district, Juab Co., Utah, USA (39°55'14"N, 112°6'28"W)
Anthony R. Kampf*, Robert M. Housley and George R. Rossman
*E-mail: akampf@nhm.org
A dimorph of raisaite
Monoclinic: $P2_1/c$; structure determined
$a = 9.6838(5)$, $b = 5.7517(2)$, $c = 17.634(1)$ Å, $\beta = 90.553(6)°$
8.77(100), 4.824(71), 4.392(43), 4.248(85), 2.733(39), 2.419(50), 1.893(48), 1.753(29)
Type material is deposited in the mineralogical collections of the Natural History Museum of Los Angeles County, 900 Exposition Blvd, Los Angeles, California, USA, catalogue number 67272
How to cite: Kampf, A.R., Housley, R.M. and Rossman, G.R. (2018) Pararaisaite, IMA 2017-110. CNMNC Newsletter No. 42, April 2018, page 449; *Mineralogical Magazine*, **82**, 445–451.

IMA No. **2017-111**
Thalhammerite
$Pd_9Ag_2Bi_2S_4$
Komsomolsky mine, Talnakh deposit, Noril'sk region, Russia (69°30'20"N, 88°27'17"E)
Anna Vymazalová*, František Laufek, Sergei F. Sluzhenikin, Vladimir V. Kozlov, Chris J. Stanley, Jakub Plášil, Federica Zaccarini, Giorgio Garuti and Ronald Bakker
*E-mail: anna.vymazalova@geology.cz
Known synthetic analogue
Tetragonal: $I4/mmm$; structure determined
$a = 8.0266(2)$, $c = 9.1531(2)$ Å
3.343(24), 2.839(46), 2.412(100), 2.324(61), 2.287(48), 2.220(29), 2.007(40), 1.508(30)
Type material is deposited in the mineralogical collections of the Natural History Museum, Cromwell Road, SW7 5BD London, UK, catalogue No. BM2017,16
How to cite: Vymazalová, A., Laufek, F., Sluzhenikin, S.F., Kozlov, V.V., Stanley, C.J., Plášil, J., Zaccarini, F., Garuti, G. and Bakker, R. (2018) Thalhammerite, IMA 2017-111. CNMNC Newsletter No. 42, April 2018, page 449; *Mineralogical Magazine*, **82**, 445–451.

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IMA No. **2017-112**
Mitrofanovite
Pt_3Te_4
East Chuarvy, Fedorovo-Pana intrusion, Kola Peninsula, Russia (67°24'30"N, 36°03'00"E)
Viktor V. Subbotin, Anna Vymazalová*, František Laufek, Yevgeny E. Savchenko, Chris J. Stanley, Dmitriy A. Gabov and Jakub Plášil
*E-mail: anna.vymazalova@geology.cz
Structurally and chemically related to moncheite
Trigonal: $R\bar{3}\,m$; structure determined
$a = 3.9875(1)$, $c = 35.362(7)$ Å
11.79(23), 5.891(100), 3.928(11), 2.851(26), 2.137(16), 2.039(18), 1.574(24), 1.310(21)
Type material is deposited in the collections of the Fersman Mineralogical Museum, Russian Academy of Sciences, Moscow, Russia, registration number 5141/1
How to cite: Subbotin, V.V., Vymazalová, A., Laufek, F., Savchenko, Y.E., Stanley, C.J., Gabov, D.A. and Plášil, J. (2018) Mitrofanovite, IMA 2017-112. CNMNC Newsletter No. 42, April 2018, page 450; *Mineralogical Magazine*, **82**, 445–451.

IMA No. **2017-113**
Jahnsite-(MnMnZn)
$Mn^{2+}Mn^{2+}Zn_2Fe^{3+}_2(PO_4)_4(OH)_2\cdot 8H_2O$
Herdade dos Pendões mine, ca. 5 km N of the village of Odemira, Beja district, Portugal (37°38'33"N, 8°37'52"W)
Anthony R. Kampf*, Pedro Alves, Anatoly Kasatkin and Radek Škoda
*E-mail: akampf@nhm.org
Jahnsite group
Monoclinic: $P2/a$
$a = 15.222(6)$, $b = 7.187(6)$, $c = 10.028(5)$ Å, $\beta = 111.746(16)°$
9.25(63), 5.00(40), 4.648(33), 3.509(41), 2.842(100), 1.998(37), 1.951(30), 1.585(33)
Type material is deposited in the mineralogical collections of the Natural History Museum of Los Angeles County, 900 Exposition Blvd, Los Angeles, California, USA, catalogue number 67277
How to cite: Kampf, A.R., Alves, P., Kasatkin, A. and Škoda, R. (2018) Jahnsite-(MnMnZn), IMA 2017-113. CNMNC Newsletter No. 42, April 2018, page 450; *Mineralogical Magazine*, **82**, 445–451.

IMA No. **2017-078a**
Kaitianite
$Ti^{3+}_2Ti^{4+}O_5$
Allende CV3 meteorite, fell at Pueblito de Allende, Chihuahua, Mexico
Ma, C.*
*E-mail: chi@gps.caltech.edu
The Ti analogue of oxyvanite
Monoclinic: $C2/c$
$a = 10.115$, $b = 5.074$, $c = 7.182$ Å, $\beta = 112.0°$
4.689(53), 3.377(75), 2.931(73), 2.662(100), 2.466(59), 1.737(66), 1.671(67), 1.451(52)
Type material is deposited in the mineralogical collections of the National Museum of Natural History, Smithsonian Institution, Washington, DC, USA, section UNSM 3510-5
How to cite: Ma, C. (2017) Kaitianite, IMA 2017-078. CNMNC Newsletter No. 42, April 2018, page 450; *Mineralogical Magazine*, **82**, 445–451.

NOMENCLATURE PROPOSALS APPROVED IN MARCH 2018

IMA 17-H: Spinel supergroup

Proposal 17-H on the classification of the spinel supergroup is accepted. The fifty-three minerals of the spinel supergroup are divided into three groups on the basis of dominant *X* anion: O^{2-} (oxyspinel), S^{2-} (thiospinel), and Se^{2-} (seleniospinel). Each group is divided into subgroups according to the dominant valence and then the dominant constituent (or heterovalent-pair of constituents) represented by the letter *B* in the formula AB_2X_4. The oxyspinel group can be divided into spinel subgroup 2-3 ($A^{2+}B^{3+}_2O_4$) and ulvöspinel subgroup 4-2 ($A^{4+}B^{2+}_2O_4$), thiospinel group into carrollite subgroup 1-3.5 ($A^{1+}B^{3.5+}_2S_4$) and linnaeite subgroup 2-3 ($A^{2+}B^{3+}_2S_4$), and the selenospinel group into bornhardtite subgroup 2-3 ($A^{2+}B^{3+}_2Se_4$) and tyrrellite. Once the subgroup is established by the valence of *B* and the dominant *B*-cation, then the mineral species is identified by the dominant *A*-cation. There are thirty species in the oxyspinel group, twenty in the thiospinel group and three in the seleniospinel group.

IMA 17-I: Revised end-member formula for flurlite

Proposal 17-I is accepted. A re-evaluation of the site occupancies in flurlite, using BVS calculations, resulted in a change in the dominant cation

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in the *M*1 site from Mn^{2+} to Zn. Consequently, the end-member formula for flurlite becomes $^{[5]}Zn\ ^{[6]}Zn_3{}^{[6]}Fe^{3+}(PO_4)_3(OH)_2(H_2O)_7{\cdot}2H_2O$.

IMA 18-A: Redefinition of eztlite

Proposal 18-A is accepted, and the formula for eztlite is redefined, according to new analytical results. The previously accepted formula, published by Sidney Williams in 1982, was $Fe^{3+}_6Pb^{2+}_2(Te^{4+}O_3)_3(Te^{6+}O_6)(OH)_{10}{\cdot}nH_2O$, with $n \approx 8$. This formula is now redefined to $Pb^{2+}_2Fe^{3+}_3(Te^{4+}O_3)_3(SO_4)O_2Cl$.

Nepheline - revised chemical formula

In the IMA List of Minerals the ideal chemical formulae of kalsilite and nepheline are given as $KAlSiO_4$ and $NaAlSiO_4$, respectively. Whereas the formula of kalsilite is correct, nepheline must contain some amount of potassium substituting for sodium. Both kalsilite and nepheline are hexagonal, space group $P6_3$. In kalsilite, which has a smaller unit cell, all cavities which host alkali cations have a hexagonal outline and are occupied by potassium; in nepheline, due to the doubling of the **a** parameter, there are 3 cavities with oval outline and 1 cavity with hexagonal outline: the former are occupied by sodium, the latter by potassium. Accordingly, the chemical formula of nepheline should be $Na_3K(Al_4Si_4O_{16})$. All known chemical analyses of nepheline, including those of nepheline from the type locality (Monte Somma – Vesuvius area, Italy) match the above formula. Therefore potassium is an essential constituent of nepheline and it should appear in the chemical formula of the mineral. This is an executive decision taken by the officers of the IMA CNMNC.

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