The Canadian Mineralogist
Vol. 43, pp. 829-835 (2005)

NEW MINERALS AND NOMENCLATURE MODIFICATIONS APPROVED IN 2004 BY THE COMMISSION ON NEW MINERALS AND MINERAL NAMES, INTERNATIONAL MINERALOGICAL ASSOCIATION

ERNST A.J. BURKE[§]

Faculteit der Aard- en Levenswetenschappen, Vrije Universiteit Amsterdam, De Boelelaan 1085, 1081 HV Amsterdam, Netherlands

GIOVANNI FERRARIS[¶]

Dipartimento di Scienze Mineralogiche e Petrologiche, Università di Torino, Via Valperga Caluso 35, I–10125 Torino, Italy

The information given here is provided by the Commission on New Minerals and Mineral Names (CNMMN), International Mineralogical Association (IMA), for comparative purposes and as a service to mineralogists working on new species. Each mineral is described in the following format:

IMA number
Type locality
Corresponding author
Chemical formula
Relationship to other minerals
Crystal system, space group, structure determined, yes or no
Unit-cell parameters
Interplanar spacing (Å) and intensity of the strongest lines in the X-ray powder-diffraction pattern

The names of these approved species are considered confidential information until the authors have published their descriptions or released information themselves. No other information will be released by the Commission.

This list is also available on the CNMMN website: http://sheba.geo.vu.nl/~ima-cnmmn/minerals2004.pdf

2004 PROPOSALS

IMA No. **2004–001**
Little Patsy pegmatite, Jefferson Co., Colorado, USA
William B. Simmons
[(REE+Y),U,Th,Ca,Fe,…](Nb,Ta,Ti)O_4 with Yb as dominant REE
Yb-dominant analogue of samarskite
Monoclinic: *P*2/*c*
a 5.687, *b* 9.918, *c* 5.201 Å, β 93.18° (for heated material)
3.664(21), 3.086(25), 2.981(100), 1.895(12), 1.865(20), 1.769(15), 1.746(12), 1.587(20)

IMA No. **2004–002**
Tastyg spodumene deposit, Tuva, Siberia, Russia
Roberta Oberti
$NaLi_2(Mg_2Al_2Li)_{\Sigma 5}Si_8O_{22}F_2$ Amphibole group
Monoclinic: *C*2/*m*; structure determined
a 9.357, *b* 17.580, *c* 5.267 Å, β 102.37°
8.11(56), 4.39(54), 3.371(43), 3.002(66), 2.869(26), 2.675(100)

IMA No. **2004–003**
Findlay Gulch, Saguache Co., Colorado, USA
Luca Bindi
$Ag_3HgPbSbTe_5$ Strong similarities with petrovicite
Orthorhombic: *Pna*2_1 or *Pnam* (probably)
a 16.495, *b* 14.762, *c* 4.506 Å
3.65(60), 3.60(40), 3.26(50), 3.17(60), 3.01(100), 2.754(60), 2.316(45), 2.137(50), 1.806(55)

§ Chairman, CNMMN; ernst.burke@falw.vu.nl
¶ Vice-Chairman, CNMMN; giovanni.ferraris@unito.it

IMA No. **2004–004**
Tahara, Hirukawa-mura, Ena-gun, Gifu Prefecture, Japan
Satoshi Matsubara
$Ce_2Be_2(SiO_4)_2(OH)_2$ Gadolinite group
Monoclinic: $P2_1/a$
a 9.8973, *b* 7.6282, *c* 4.7505 Å, β 90.416°
6.06(42), 3.74(37), 3.44(34), 3.13(86), 2.85(100), 2.56(46), 2.21(33), 1.976(30)

IMA No. **2004–005**
Palitra pegmatite, Lovozero, Kola Peninsula, Russia
Igor V. Pekov
$CsFe_2S_3$ Cs-dominant analogue of rasvumite and picotpaulite
Orthorhombic: *Cmcm*
a 9.477, *b* 11.245, *c* 5.485 Å
4.69(30), 4.28(20), 2.981(100), 2.723(40), 2.003(30), 1.910(60), 1.785(30), 1.565(40)

IMA No. **2004–006**
ca. 7.5 km southwest of Wolf Mountain, Thunder Bay District, Ontario, Canada
Anton R. Chakhmouradian
$(Ca,Na)_5[(P,S)O_4]_3(OH,Cl)$ Apatite group
Monoclinic: $P2_1/b$
a 9.445, *b* 18.853, *c* 6.8783 Å, γ 120.00°
2.817(66), 2.781(41), 2.724(79), 2.630(24), 2.267(100), 1.945(39), 1.841(58), 1.784(70)

IMA No. **2004–007**
Mesamax Northwest deposit, Cape Smith, Ungava region, Canada
Louis J. Cabri
Pd_2Sb
Orthorhombic: $Cmc2_1$
a 3.3906, *b* 17.5551, *c* 6.957 Å
2.407(34), 2.303(35), 2.245(100), 2.057(52), 2.001(40), 1.367(35), 1.284(42), 1.212(50)

IMA No. **2004–008**
Eveslogchorr Mountain, Khibiny massif, Kola Peninsula, Russia
Igor V. Pekov
$(Sr,Ba,K)(Ti,Nb)_2(Si_4O_{12})(OH,O)_2{\bullet}3H_2O$ Labuntsovite group
Monoclinic: *Cm*; structure determined
a 14.490, *b* 14.23, *c* 7.881 Å, β 117.28°
7.10(90), 6.45(50), 5.01(40), 3.230(100), 3.135(80), 2.510(80), 1.728(50), 1.570(45)

IMA No. **2004–009**
Dora–Maira massif, Vallone di Gilba, Val Varaita, Piemonte, Italy
Christian Chopin
$Mg_2(PO_4)(OH)$ Triplite–triploidite group
Monoclinic: $P2_1/c$
a 9.646, *b* 12.7314, *c* 11.980 Å, β 108.38°
3.292(50), 3.117(66), 2.984(100), 2.851(80), 2.752(28), 2.710(19), 2.484(14)

IMA No. **2004–010**
Shergotty SNC meteorite
Charles T. Prewitt
SiO_2 Polymorphous with quartz
Orthorhombic: *Pbcn* or *Pb*2*n*; structure determined
a 4.097, *b* 5.0462, *c* 4.4946 Å
3.181(72), 2.596(100), 1.970(25), 1.938(64), 1.514(31), 1.499(44), 1.288(19), 1.265(15)

IMA No. **2004–011**
Kumdy–Kul, Kokchetav, Kazakhstan
Shyh-Lung Hwang
$KAlSi_3O_8$ Feldspar group
Hexagonal: probably *P*6/*mmm*
a 5.27, *c* 7.82 Å
7.82, 4.56, 3.94, 2.97, 2.63, 2.50, 2.26, 1.80

IMA No. **2004–012**
Dara-i-Pioz glacier, Tajikistan
Leonid A. Pautov
$CsLi_2AlSi_4O_{10}F_2$ Mica group
Monoclinic: *C*2/*m*, *C*2 or *Cm*
a 5.182, *b* 9.005, *c* 10.692 Å, β 99.82°
3.897(49), 3.682(80), 3.418(65), 3.174(100), 2.980(41), 2.634(79), 2.582(66), 2.107(94)

IMA No. **2004–013**
Fernando-do-Noronha Island, Brazil
Frank C. Hawthorne
$(Ba,K)(Mg,Fe^{2+},Ti^{4+})_3(Si,Al)_4O_{10}O_2$ Mica group
Monoclinic: *C*2/*m*; structure determined
a 5.3516, *b* 9.2817, *c* 10.0475 Å, β 100.337°
3.646(7), 3.383(6), 3.130(7), 2.902(5), 2.637(10), 2.435(5), 2.172(9), 1.988(5)

IMA No. **2004–014**
Le Coreux, Ardennes, Belgium
Werner Schreyer
$La_3Mn^{2+}{}_3Cu^{2+}(Mn^{3+},Fe^{3+},Mn^{4+})_{26}(Si_2O_7)_6O_{30}$ New structure-type determined
Trigonal: $P3_1$
a 11.525, *c* 33.347 Å
11.116(18) 5.446(31), 3.1873(19), 2.7789(40), 2.7232(100), 2.3702(29), 1.6887(28), 1.6635(40)

IMA No. **2004–015**
Central Pyrenees, France
Christian Chopin
$(Mn^{2+},Ca)(REE)V^{3+}AlMn^{2+}(Si_2O_7)(SiO_4)O(OH)$, with Ce as dominant REE Epidote group
Monoclinic: $P2_1/m$; structure determined
a 8.856, *b* 5.729, *c* 10.038 Å, β 113.088°
3.5004, 2.8891, 2.8645, 2.7114, 2.7023, 2.6124, 2.5916

IMA No. **2004–016**
Silver Gill mine, Cumbria, United Kingdom
Joseph J. Pluth
$Cu_6(OH)_{10}(SO_4)\bullet H_2O$ Langite group
Monoclinic: $P2_1/c$; structure determined
a 3.155, *b* 10.441, *c* 19.436 Å, β 90.089°
9.72(90), 7.11(100), 4.60(30), 4.068(20), 2.880(30), 2.318(50), 2.000(15), 1.941(15)

IMA No. **2004–017**
Dara-i-Pioz glacier, Tajikistan
Leonid A. Pautov
$CsKNaCa_2TiO[Si_7O_{18}(OH)]$ Cs-dominant analogue of tinaksite
Triclinic: $P\bar{1}$; structure determined
a 10.4191, *b* 12.2408, *c* 7.0569 Å, α 90.857, β 99.193, γ 91.895º
4.08(13), 3.33(11), 3.25(16), 3.14(21), 3.06(100), 2.959(20), 2.038(17)

IMA No. **2004–018**
Mariposa mine, Texas, USA
Andrew C. Roberts
$Hg^{2+}{}_3O_2Cl_2$ Oxyhalide with Hg
Orthorhombic: *Imam*, *Imcm*, *Ima*2, or *I*2*cm*
a 6.737, *b* 25.528, *c* 5.533 Å
5.413(30), 4.063(80), 3.201(50), 3.023(50), 2.983(60), 2.858(30), 2.765(50), 2.518(100)

IMA No. **2004–019**
Qaqarssuk complex, Greenland
Joel D. Grice
$Ba(Ce,REE)(CO_3)_2F$ Polymorphic relation with huanghoite-(Ce)
Trigonal: *P*3; structure determined
a 7.2097, *c* 18.187 Å
4.552(43), 3.674(32), 3.539(41), 3.351(100), 3.096(40), 2.571(35), 2.109(39), 2.080(60)

IMA No. **2004–020**
Mesamax Northwest deposit, Quebec, Canada
Louis J. Cabri
Pd_4Sb_3 Pd-dominant analogue of genkinite
Tetragonal: $P4_12_12$, $P4_122$, $P4_32_12$, $P4_22_12$, or $P4_222$
a 7.7388, *c* 24.145 Å
3.0077(90), 2.2633(100), 2.1471(30), 1.9404(60), 1.2465(30), 1.2002(30), 0.9221(30)

IMA No. **2004–021**
Kovdor massif, Kola Peninsula, Russia
Victor N. Yakovenchuk
$Co_3(PO_4)_2\bullet 8H_2O$ Vivianite group
Monoclinic: *C*2/*m*
a 10.034, *b* 13.341, *c* 4.670 Å, β 105.02°
6.67(10), 4.85(4), 3.84(4), 3.195(6), 2.948(7), 2.691(7), 2.521(6), 2.408(6)

IMA No. **2004–022**
Horní Halže, Krušné Hory Mountains, Czech Republic
Jiří Sejkora
$Pb_2(UO_2)_{11}(BiO)_8(PO_4)_5(OH)_{19}\bullet 6H_2O$ P-dominant analogue of asselbornite
Cubic: *Im*3*m*, *I*432, *Im*3 or *I*23
a 15.5728 Å
5.513(53), 4.499(48), 4.163(100), 3.671(77), 3.484(31), 3.179(99), 2.596(54), 1.9776(30)

IMA No. **2004–023**
Kara–Oba deposit, Kazakhstan
Leonid A. Pautov
$Ca_3(Nd,Y)Al_2(SO_4)F_{13}\bullet 12H_2O$ Nd-dominant analogue of chukhrovite
Cubic: *Fd*3
a 16.759 Å
9.7(10), 5.92(7), 4.20(4), 3.22(8), 2.555(7), 2.240(5), 2.180(6), 1.827(5)

IMA No. **2004–024**
Kara–Tangi deposit, Kyrgyzstan
Leonid A. Pautov
$ZnAl_4(SO_4)(OH)_{12}\bullet 3H_2O$ Zn-dominant analogue of chalcoalumite
Monoclinic: $P2_1/n$
a 10.246, *b* 8.873, *c* 17.22 Å, β 96.41°
8.60(100), 7.93(70), 4.83(80), 4.27(100), 2.516(70), 2.292(80), 1.998(95), 1.896(65)

IMA No. **2004–025**
Tolbachik volcano, Kamchatka Peninsula, Russia
Sergey V. Krivovichev
$Cu^+Cu^{2+}{}_5PbO_2(SeO_3)_2Cl_5$ New structure-type determined
Monoclinic: *C*2/*m*
a 18.468, *b* 6.1475, *c* 15.314 Å, β 119.284°
3.86(80), 3.55(80), 3.08(100), 2.504(20), 1.710(30), 1.543(50), 1.448(30), 1.348(40)

IMA No. **2004–026**
Poudrette Quarry, Mont Saint-Hilaire, Rouville County, Quebec, Canada
Joel D. Grice
$Na_{12}(Ce,REE,Sr)_3Ca_6Mn_3Zr_3$
$W(Si_{25}O_{73})(OH)_3(CO_3)\bullet H_2O$ Eudialyte group
Trigonal: *R*3*m*; structure determined
a 14.249, *c* 30.06 Å
11.308(95), 9.460(81), 3.547(36), 3.395(38), 3.363(32), 3.167(75), 2.968(100), 2.849(81)

IMA No. **2004–028**
Mina Challacollo, Chile
Jochen Schlüter
KPb_2Cl_5 New structure-type determined
Monoclinic: $P2_1/c$

a 8.864, *b* 7.932, *c* 12.491 Å, β 90.153°
8.8547(39), 5.3350(14), 3.9614(31), 3.6859(100), 3.6093(13), 2.6691(42), 2.5483(18)

IMA No. **2004–029**
La Creusaz, Valais, Switzerland, and Radium Ridge, South Australia
Joël Brugger
$(Ce,Nd,Ca)[(UO_2)_3O(OH)(PO_4)_2]•6H_2O$ Related to phosphuranylite group
Monoclinic: *P*2_1/*c*
a 9.295, *b* 15.53, *c* 13.718 Å, β 112.39°
7.76(100), 5.77(60), 4.42(30), 4.37(30), 3.87(60), 3.43(70), 3.14(80), 2.038(40)

IMA No. **2004–030**
Greenbushes, Western Australia
Roberta Oberti
$\square Li_2(Fe^{2+}{}_3Al_2)_{\Sigma 5}(Si_8O_{22})(OH)_2$ Amphibole group
Orthorhombic: *Pnma*; structure determined
a 18.287, *b* 17.680, *c* 5.278 Å
8.11(100), 4.42(26), 3.62(13), 3.00(48), 2.797(17), 2.648(14), 2.536(11)

IMA No. **2004–031**
Nagybörzsöny ore deposit, Börzsöny Mountains, Hungary
Werner Paar
$AuBi_5S_4$
Monoclinic: *F*2/*m*, *F*2 or *Fm*
a 18.329, *b* 4.108, *c* 13.974 Å, β 100.90°
9.002(40), 6.876(30), 6.046(20), 3.460(30), 3.382(40), 2.959(100), 2.101(50), 2.086(50)

IMA No. **2004–032**
Mutnovsky volcano, Kamchatka Peninsula, Russia
Filippo Vurro
$Pb_2AsS_3(I,Cl)$
Orthorhombic: *Pnma*; structure determined
a 11.543, *b* 6.6764, *c* 9.359 Å
4.690(32), 4.370(67), 3.340(73), 3.190(100), 2.715(61), 2.648(66), 2.539(31), 1.894(30)

IMA No. **2004–033**
Koashva Mountain, Khibiny massif, Kola Peninsula, Russia
Igor V. Pekov
$Cu_3FeS_3•2H_2O$
Orthorhombic: *Pmmm*
a 5.147, *b* 7.289, *c* 5.889 Å
5.12(40), 4.21(40), 3.69(30), 3.104(100), 2.727(50), 2.292(50), 1.897(70), 1.828(50)

IMA No. **2004–034**
Ilmen Mountain Ridge, South Ural, Russia
Alfred G. Bazhenov
$(\square,Na)(Na,Ca)_2(Mg, Fe^{2+})_4$
$Fe^{3+}[Si_8O_{22}](OH)_2$ Amphibole group
Monoclinic: *C*2/*m*
a 9.811, *b* 18.014, *c* 5.295 Å, β 104.10°
8.42(100), 3.391(10), 3.268(13), 3.116(60), 2.800(10), 2.711(20)

IMA No. **2004–035**
Iron Monarch quarry, Iron Knob, South Australia
Allan Pring
$Mn_7(PO_4)_2(OH)_8$
Monoclinic: *P*2_1/*c*; structure determined
a 11.364, *b* 5.570, *c* 10.455 Å, β 96.61°
4.436(70), 3.621(100), 3.069(50), 2.941(40), 2.890(20), 2.842(20), 2.780(35), 2.718(20)

IMA No. **2004–036**
Mina Santa Rosa, Iquique, Chile
Jochen Schlüter
$Na_2Cu(CO_3)_2$
Monoclinic: *P*2_1/*a*
a 6.171, *b* 8.171, *c* 5.645 Å, β 116.23°
5.06(66), 4.57(57), 4.30(37), 4.26(75), 2.666(100), 2.619(65), 2.450(33), 2.390(25)

IMA No. **2004–037**
Mány coal deposit, Tatabánya, Hungary
István E. Sajó
$CaAl_2(CO_3)_2(OH)_4•H_2O$ Dresserite group
Orthorhombic: *Pnma*
a 15.564, *b* 5.591, *c* 9.112 Å
7.86(87), 7.78(62), 5.92(100), 4.37(86), 2.957(48), 2.946(44), 2.569(17), 1.902(26)

IMA No. **2004–038**
Krásno near Horní Slavkov, Bohemia, Czech Republic
Jiří Sejkora
$Cu_{13}(AsO_4)_6(AsO_3OH)_4•23H_2O$
Triclinic: $P\bar{1}$; structure determined
a 6.408, *b* 14.491, *c* 16.505 Å, α 102.87, β 101.32, γ 97.13°
15.70(3), 11.98(100), 6.99(3), 5.99(6), 3.448(5), 2.967(5), 2.895(3), 2.400(4)

IMA No. **2004–040**
Iron mine, Kovdor massif, Kola Peninsula, Russia
Nikita V. Chukanov
$Na_9(Ca,Na)_6Ca_6Fe_2Zr_3\square Si_{25}O_{72}$
$(CO_3)(OH)_4$ Eudialyte group
Trigonal: *R*3*m*; structure determined
a 14.232, *c* 30.210 Å
4.31(64), 3.213(100), 3.163(44), 3.027(65), 2.977(91), 2.859(79), 2.703(46), 2.595(45)

IMA No. **2004–041**
Linópolis, Divino das Laranjeiras, Minas Gerais State, Brazil
Nikita V. Chukanov
$Ca_2Fe^{2+}\square Mg_2Fe^{2+}{}_2Be_4(PO_4)_6$
$(OH)_4•6H_2O$ Related to roscherite

Triclinic: $P\bar{1}$; structure determined
a 6.668, *b* 9.879, *c* 9.883 Å, α 73.53, β 85.60, γ 86.93°
9.47(41), 5.92(100), 3.31(34), 3.17(53), 2.784(86), 2.639(30), 2.225(26), 2.202(32)

IMA No. **2004–043**
Farnese, Viterbo province, Latium, Italy
Giancarlo Della Ventura
$(Na_{37}K_9Ca_{10})_{\Sigma 56}(Si_{42}Al_{42})_{\Sigma 84}$
$O_{168}(SO_4)_{12}{\bullet}6H_2O$ Cancrinite–sodalite group
Hexagonal: $P6_3/m$; structure determined
a 12.8784, *c* 37.0078 Å
5.404(20), 3.862(23), 3.722(100), 3.668(26), 3.485(65), 3.119(36), 2.648(32), 2.149(34)

IMA No. **2004–044**
Fianel Alp, Ferrera valley, Graubünden, Switzerland
Joël Brugger
$Na(Mn,Mg,Zn)_9$
$[VSi_9O_{28}(OH)](OH)_3$ Related to saneroite
Triclinic: $P\bar{1}$; structure determined
a 9.831, *b* 10.107, *c* 13.855 Å, α 86.222, β 73.383, γ 71.987°
8.68(50), 7.91(70), 4.83(30), 3.94(30), 3.22(40), 3.09(80), 2.92(40), 2.71(100)

IMA No. **2004–045**
Arnold mine, Fowler, St. Lawrence Co., New York, USA
Roberta Oberti
$^{A}\square^{B}(CaMn)_{\Sigma 2}{}^{C}Mg_5{}^{T}Si_8O_{22}(OH)_2$ Amphibole group
Monoclinic: $C2/m$; structure determined
a 9.7807, *b* 18.0548, *c* 5.2928 Å, β 104.19°
9.027(54), 8.395(62), 3.395(62), 3.269(56), 3.113(80), 2.950(51), 2.713(100), 2.531(59)

IMA No. **2004–046**
Skaergaard Intrusion, Greenland
Andy McDonald
$PdCu_3$
Tetragonal: $I4/mmm$
a 3.715, *c* 14.651 Å
3.657(60), 2.138(100), 1.8604(70), 1.8337(40), 1.3049(60), 1.1188(55), 1.0655(30), 0.8459(25)

IMA No. **2004–047**
Buraco do Ouro gold mine, Cavalcante, Goiás State, Brazil.
Nilson F. Botelho
PdAsSe Gersdorffite group
Cubic: *Pa*
a 6.089 Å
3.027(75), 2.725(65), 2.478(65), 1.838(100), 1.077(80), 0.988(70), 0.929(90), 0.918(70)

IMA No. **2004–048**
Skrikerum, Sweden
Luca Bindi
Ag_3CuSe_2
Tetragonal: $I4_1/amd$
a 8.939, *c* 11.844 Å
4.47(60), 2.891(85), 2.813(80), 2.552(50), 2.473(75), 2.426(100), 2.162(70), 2.034(60)

IMA No. **2004–049**
Kasagu-mura, Gifa Prefecture, Japan
Yasuyuki Banno
$NaMg_3(AlSi_3)O_{10}(OH)_2$ Mica group
Monoclinic: $C2/m$; structure determined
a 5.291, *b* 9.16, *c* 10.12 Å, β 105.1°
9.77(100), 4.59(25), 3.26(50), 2.61(100), 2.55(25), 2.45(20), 2.19(20)
Triclinic: $C\bar{1}$; structure determined
a 5.289, *b* 9.16, *c* 9.892 Å, α 94.45, β 97.74, γ 90.0°
9.73(80), 4.57(40), 3.26(40), 2.62(100), 2.55(30), 2.43(25), 2.19(25), 2.17(25)

IMA No. **2004–050**
Grube Mark near Essershausen, Taunus, Hesse, Germany
Uwe Kolitsch
$Fe_3(PO_4)_2(OH)_3{\bullet}5H_2O$ Wavellite group
Monoclinic: $P2_1/n$; structure determined
a 9.777, *b* 7.358, *c* 17.830 Å, β 92.19°
8.90(100), 8.41(60), 5.870(50), 4.873(30), 3.600(50), 3.357(40), 3.231(80), 2.177(20)

IMA No. **2004–051**
Kulet Kol region, Kokchetav massif, Kazakhstan
Shyh-Lung Hwang
$5Al_2O_3{\bullet}H_2O$
Hexagonal: $P6_3mc$; structure determined
a 5.58, *c* 8.86 Å
4.839, 4.423, 4.231, 2.783, 2.530, 2.361, 1.673, 1.435, 1.417

IMA No. **2004–052**
Chivruai river valley, Lovozero massif, Kola Peninsula, Russia
Sergey V. Krivovichev
$Ca_3Ti_5[(Si_6O_{17})_2|O(OH)_4]{\bullet}14H_2O$ Zorite group
Orthorhombic: *Cmmm*; structure determined
a 7.17, *b* 22.98, *c* 6.94 Å
11.6(10), 6.91(9), 5.23(5), 3.41(5), 3.35(5), 3.04(8), 2.97(4), 2.58(5)

IMA No. **2004–053**
Mt. Lepkhe-Nelm, Lovozero massif, Kola Peninsula, Russia
Victor N. Yakovenchuk
$Pb_3[Al(OH)_6](SO_4)(OH)$ New structure-type determined

Trigonal: *R*3*c*
a 7.693, *c* 31.57 Å
3.58(10), 3.10(6), 2.591(9), 2.216(5), 2.048(7), 1.893(5), 1.859(4), 1.704(8)

IMA No. **2004–054**
Sixiangkou L6 chondrite
Ahmed El Goresy
$(Na,Ca)AlSi_3O_8$ Feldspar group
Tetragonal: *I*4/*m*
a 9.263, *c* 2.706 Å
6.55(66), 4.63(60), 2.931(100), 2.265(35), 2.032(85), 1.737(37), 1.543(33), 1.450(42)

Older Proposals

IMA No. **2003–031a**
Aitern-Süd, Black Forest, Germany
Kurt Walenta
$(Pb,REE,Ca)Cu_6(AsO_4)_3(OH)_6{\bullet}3H_2O$ Mixite group
Hexagonal: $P6_3/m$
a 13.77, *c* 5.94 Å
12.01(10), 4.51(6), 3.60(8), 3.31(5), 2.98(6), 2.74(5), 2.61(5), 2.49(7), 1.817(5)

IMA No. **99–004a**
Kudriavy volcano, Iturup Island, Kuriles, Russia
Ilya V. Chaplygin
ReS_2
Triclinic: $P\bar{1}$; structure determined
a 6.470, *b* 6.368, *c* 6.401 Å, α 105.0, β 91.59, γ 118.90°
2.7834(10), 2.764(10), 2.733(10), 2.642(8), 2.404(8), 2.371(9), 2.1035(8), 2.0914(9)

IMA No. **2003–045a**
Heftetjern pegmatite, southern Norway
Frank C. Hawthorne
$(Sc,Ca)_2KBe_3Si_{12}O_{30}$ Milarite group
Hexagonal: *P*6/*mmc*; structure determined
a 10.097, *c* 13.991 Å
7.012(4), 5.044(5), 4.097(7), 3.504(5), 3.229(10), 2.880(8), 1.836(4), 1.751(4)

IMA No. **2002–042a**
Aris intrusion, Namibia
Fernando Cámara
$Na_3La[Si_6O_{15}]{\bullet}2H_2O$ La-dominant analogue of sazhinite
Orthorhombic: *Pmm*2; structure determined
a 7.415, *b* 15.515, *c* 7.164 Å
7.42(59), 6.50(48), 5.36(60), 5.26(68), 3.411(100), 3.345(45), 3.252(83), 3.226(45)

Nomenclature of a Mineral Group

Application and status of the amphibole nomenclature: discrimination between approved amphiboles and named amphiboles

New root-names for amphibole species can only be proposed where *new heterovalent substitutions* (*i.e.*, substitutions not mentioned in the 1997 and 2003/4 amphibole reports) have been observed in natural material; such material consists of a new amphibole species, and **it must be submitted to the CNMMN with its new root or trivial name, and it should fulfill the requirements for all new mineral species**. If approved, these new amphiboles receive an *A* status in IMA listings.

New amphibole names originating from *new homovalent substitutions* are always formed by use of an appropriate prefix to an existing root or trivial name, according to the schemes of the 1997 and 2003/4 reports. **The status of such new amphibole names will depend on the authors; they will have the choice to submit the new amphibole to the CNMMN for approval, or not**. This will lead to two categories of amphibole species. 1) **Approved amphiboles**. An amphibole is considered as an approved species and receives an *A* status in the IMA listing if it has been submitted to, and approved by the CNMMN, according to the usual rules applied to all new mineral species. New root names need CNMMN approval. 2) **Named amphiboles**. Those researchers who have not enough data to prepare a regular new-mineral proposal, or simply are not willing to submit a proposal for whatever reason, may give a name to their amphibole according to the 1997 and 2003/4 schemes of amphibole nomenclature and publish it. These amphibole names, however, will not receive an *A* status and will not be included in the official IMA listings, because the material to which such a name was applied has not been investigated according to the rules for a new species. **Authors not seeking approval run the risk that other researchers will submit their own material for species approval with the same name**.

A proper order for the use of prefixes in amphibole names

The approved ordering scheme does not split any of the "end-member" names, as listed in 1997 and 2003/04 amphibole reports, nor any of the names that appear in the nomenclature figures. It is not possible to implement any scheme of prefix order based on systematically increasing or decreasing elements according to valences, or of *M*1, *M*2, *M*3 and *M*4 order, without splitting the existing "end-member" names. The approved scheme is as follows: (1) Any *magnesio-* or *ferro-* prefixes come immediately in front of the root name. (2) *Alumino-*, *ferri-*, *ferric-*, *mangani-* or *chromio-* prefixes come next in front (cases of more than one are not known). (3) The very first prefix (*i.e.*, at the front) is *proto-*, *parvo-* or *magno-*. (4) Next after (3) come any prefix referring to anions, *chloro-*, or *fluoro-*. (5) Finally, any remaining prefixes come after (4) and before (2), in alphabetical order.

Prefixes are hyphenated except that the prefix immediately before the root name is joined to the root name without a hyphen, unless two vowels would then come together or it would be unclear (see the 1997 amphibole report).

The decisions on named amphiboles and the order of prefixes in amphibole names have been published by Burke & Leake [*Canadian Mineralogist* **42** (2004), 1881-1883; *American Mineralogist* **90** (2005), 516-517].

Monthly Announcement of New Minerals on the CNMMN Website

After approval of a new mineral by the CNMMN, the following data will be published one month after the approval date of the CNMMN website:

IMA number
Type locality
Corresponding author
Chemical formula
Relationship to other minerals
Crystal system, space group, unit-cell parameters
Structure determined, yes or no
Strongest lines in the X-ray powder-diffraction pattern

Discreditation

The approval of proposal 2004–002 implies the official discreditation of clinoholmquistite, as holotype material from the latter mineral was used for the description of the new mineral species. Clinoholmquistite is now only a theoretical name in the system of amphibole nomenclature.

Renamed Mineral

IMA No. 04–A: cesium kupletskite is renamed as kupletskite-(Cs).