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NEW MINERALS APPROVED IN 2005 AND NOMENCLATURE MODIFICATIONS APPROVED IN 2005 BY THE COMMISSION ON NEW MINERALS AND MINERAL NAMES, INTERNATIONAL MINERALOGICAL ASSOCIATION

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The information given here is provided by the Commission on New Minerals and Mineral Names (CNMMN) of the 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
Strongest lines in the X-ray powder-diffraction pattern: *d*(Å), (Intensity)

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/minerals2005.pdf

2005 PROPOSALS

IMA No. **2005–002**
Uroi hill, Hunedoara district, Romania
Hans-Peter Bojar
$(Na,K)Ca_2(Mg,Fe^{3+},Ti)_5(Si,Al)_8O_{22}F_2$ Amphibole group

Monoclinic: *C*2/*m*; structure determined
a 9.872, *b* 18.007, *c* 5.314 Å, β 105.37°
9.007(27), 8.421(61), 3.376(44), 3.271(61), 3.124(100), 2.931(35), 2.805(28), 2.700(54)

IMA No. **2005–003**
Bota–Burum, Kazakhstan
Nikita V. Chukanov
$Al(UO_2)_2(AsO_4)_2(F,OH)•6.5H_2O$ Related to threadgoldite

Monoclinic: *P*2/*m*, *P*2 or *Pm*
a 19.99, *b* 9.79, *c* 19.62 Å, β 110.7°
9.34(100), 9.14(100), 4.93(18), 4.87(20), 4.76(27), 4.69(17), 3.55(15), 2.281(13)

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IMA No. **2005–004**
Tolbachik volcano, Kamchatka Peninsula, Russia
Sergey V. Krivovichev
$VO(SO_4)$ New structure-type
Orthorhombic: *Pnma*; structure determined
a 7.389, *b* 6.274, *c* 7.079 Å
5.11(27), 4.70(18), 3.54(31), 3.28(100), 3.14(73), 2.845(18), 2.237(17), 2.209(17)

IMA No. **2005–005a**
Prairie Lake, Thunder bay district, Ontario, Canada
Anton R. Chakhmouradian
$Na_2Ca_4(Nb,Zr)_2(Si_2O_7)_2(O,F)_4$ Cuspidine group
Monoclinic: $P2_1$; structure determined
a 10.845, *b* 10.226, *c* 7.272 Å, β 109.33°
3.64(m), 3.23(m), 3.04(s), 2.98(s), 2.85(s), 2.48(m), 2.42(m), 2.02(s)

IMA No. **2005–006**
Greenwood iron mine, Harriman State Park, Tuxedo, Orange County, New York, USA
Marian V. Lupulescu
$KCa_2(Fe^{2+}{}_2Mg_2Fe^{3+})_{\Sigma 5}(Si_6Al_2)_{\Sigma 8}O_{22}F_2$ Amphibole group
Monoclinic: *C*2/*m*; structure determined
a 9.9480, *b* 18.1777, *c* 5.3302 Å, β 105.140°
8.499(100), 3.401(11), 3.299(32), 3.151(76), 2.830(53), 2.722(23), 2.402(17), 1.661(10)

IMA No. **2005–007**
Dashkesan Co–Fe deposit, Minor Caucasus, Azerbaijan
Igor V. Pekov
$KCa_2(Fe^{2+}{}_3MgFe^{3+})_{\Sigma 5}(Si_6Al_2)_{\Sigma 8}O_{22}Cl_2$ Amphibole group
Monoclinic: *C*2/*m*; structure determined
a 9.964, *b* 18.31, *c* 5.351 Å, β 105.0°
8.53(100), 3.32(11), 3.16(51), 2.981(12), 2.839(18), 2.749(23), 2.191(10)

IMA No. **2005–008**
Vetralla, Viterbo Province, Latium, Italy
Athos Callegari
$(Ca_8REE_2)_{\Sigma 10}(Al_{0.5}Fe^{3+}{}_{0.5})_{\Sigma 1}$
$(\square,Be)_2Si_6B_8O_{36}(OH,F)_2$ Hellandite group
Monoclinic: *P*2/*a*; structure determined
a 28.097, *b* 4.777, *c* 10.236 Å, β 96.81°
3.33(40), 3.20(31), 3.01(34), 2.90(45), 2.78(43), 2.65(100), 1.91(48), 1.74(28)

IMA No. **2005–009**
Sounion mine #19, Lavrion, Attica, Greece
Werner Krause
$Cu_3Zn(OH)_6Cl_2$ Polymorphic relationship with herbertsmithite
Trigonal: $P\bar{3}m1$; structure determined
a 6.300, *c* 5.733 Å
5.73(100), 2.865(11), 2.761(12), 2.730(39), 2.464(81), 1.976(32), 1.576(17), 1.519(10)

IMA No. **2005–010**
Skorpion zinc deposit, Namibia
Werner Krause
$Ca_3Zn_2(PO_4)_2CO_3(OH)_2{\bullet}H_2O$ New structure-type
Monoclinic: *C*2/*c*; structure determined
a 19.045, *b* 9.320, *c* 6.525 Å, β 92.73°
9.501(53), 5.328(30), 3.170(100), 3.063(42), 3.014(54), 2.788(67), 2.582(21), 2.260(21)

IMA No. **2005–011**
Gentil mine, Mendes Pimentel County, Minas Gerais, Brazil
Daniel Atencio
$NaMgAl_5(PO_4)_4(OH)_6{\bullet}2H_2O$ Dufrénite group
Monoclinic: *C*2/*c*; structure determined
a 25.075, *b* 5.0470, *c* 13.4370 Å, β 110.97°
11.75(86), 6.58(100), 4.02(50), 3.297(25), 3.109(60), 2.670(49), 1.941(34), 1.543(37)

IMA No. **2005–012a**
Fabi quarry, near Lanzada, Valmalenco, Sondrio, Lombardy, Italy
Francesco Demartin
$NaBa_3CaY(CO_3)_3(OH)_6{\bullet}3H_2O$ Donnayite group
Triclinic: *P*1; structure determined
a 9.1526, *b* 9.1574, *c* 13.7953 Å, α 109.43, β 109.33, γ 60.00°
6.394(36), 4.312(48), 3.187(28), 3.114(100), 2.641(27), 2.614(35), 2.032(29), 2.013(27)

IMA No. **2005–013**
Helikon II pegmatite, Karibib, Namibia
Paul Keller
$(Mn^{2+},Mn^{3+},Fe^{3+})_2(PO_4)O$ Triplite–triploidite groups
Monoclinic: *I*2/*a*; structure determined
a 11.888, *b* 6.409, *c* 9.804 Å, β 106.17°
3.600(4), 3.209(6), 3.077(8), 2.819(10), 2.184(4), 2.082(5), 1.787(5), 1.495(5)

IMA No. **2005–014**
Bayun Obo iron mine, Inner Mongolia, China
Xu Jinsha
$(Ce,La)_4Fe^{2+}(Ti,Fe^{2+},Mg,Fe^{3+})_2Ti_2Si_4O_{22}$ Chevkinite group
Monoclinic: $P2_1/a$ (pseudo-*C*2/*m*); structure determined
a 13.4656, *b* 5.7356, *c* 11.0977 Å, β 100.636°
3.342(39), 3.198(68), 3.162(46), 3.095(39), 2.8702(52), 2.7524(100), 2.7263(98), 2.5460(54)

IMA No. **2005–015a**
Zhelezny mine, Kovdor carbonatite massif, Kola Peninsula, Russia
Sergey V. Britvin

$[Mg_{18}Al_9(OH)_{54}][Sr_2(CO_3,PO_4)_9(H_2O,H_3O)_{11}]$ Layered double hydroxide
Trigonal: space group not determined
a 16.055, *c* 25.66 Å
8.52(10), 6.41(6), 5.13(3), 4.27(6), 3.665(9), 3.547(9), 3.081(6), 2.513(1)

IMA No. **2005–016**
Carrière de la Flèche, near Bertrix, Ardennes, Belgium
Frédéric Hatert
$Ca_2(Al,Fe^{2+},Mg)Al_2(SiO_4)(Si_2O_7)(OH,O)_2 \bullet H_2O$ Pumpellyite group
Monoclinic: *A*2/*m*; structure determined
a 8.818, *b* 5.898, *c* 19.126 Å, β 97.26°
8.735(35), 4.371(65), 3.787(80), 3.040(70), 2.912(95), 2.895(100), 2.731(40), 2.191(45)

IMA No. **2005–017**
Indarch meteorite, Shusha, Nagorno–Karabakh, Azerbaijan
Sergey N. Britvin
(Fe,Zn)S Sphalerite group
Cubic: *F*3*m*
a 5.426 Å
3.130(100), 2.714(10), 1.919(50), 1.634(40), 1.246(30), 1.107(30), 1.045(30)

IMA No. **2005–018**
Gambatesa mine, Val Graveglia, Genova, Italy
Maria Franca Brigatti
$Ca_2(V^{3+},Fe^{3+},Mg)(V^{3+},Al)_2(Si,Al)_3(O,OH)_{14}$ Pumpellyite group
Monoclinic: *C*2/*m*; structure determined
a 19.2889, *b* 6.0444, *c* 8.8783 Å, β 97.328°
4.739(34), 3.817(70), 2.930(100), 2.756(34), 2.551(62), 2.548(65), 2.367(51), 1.612(57)

IMA No. **2005–019**
Mt. Alluaiv, Lovozero alkaline massif, Kola Peninsula, Russia
Alexander P. Khomyakov
$Na_{30}(Ca,Na,Ce,Sr)_{12}(Na,Mn,Fe,Ti)_6Zr_3Ti_3MnSi_{51}O_{144}(OH,H_2O,Cl)_9$ Eudialyte group
Trigonal: *R*3*m*; structure determined
a 14.153, *c* 60.72 Å
7.11(40), 4.31(50), 2.964(100), 2.839(90), 2.675(30), 2.159(60), 1.770(60), 1.362(50)

IMA No. **2005–020**
Paratoo copper mine, near Yunta, Olary Province, South Australia, Australia
Allan Pring
$(REE,Ca,Na,Sr)_{12}Cu_2(CO_3)_{16}$
Orthorhombic: *P*222 or *P*222$_1$
a 10.0862, *b* 12.8088, *c* 7.2360 Å
5.04(53), 4.80(49), 3.96(43), 3.48(43), 2.94(100), 2.93(52), 2.53(52), 1.97(56)

IMA No. **2005–021a**
Mangazeiskoye silver ore deposit, eastern Yakutia, Siberia, Russia
Gennady N. Gamyanin
$Al_2(SO_4)(OH)_4 \bullet 3H_2O$ Aluminite group
Triclinic: *P*1 or $P\bar{1}$
a 8.286, *b* 9.385, *c* 11.35 Å, α 96.1, β 98.9, γ 96.6°
8.14(19), 7.59(49), 7.16(46), 4.520(13), 4.258(100), 4.060(48), 3.912(43), 3.795(12)

IMA No. **2005–022**
Mica mine, Kovdor alkaline-ultramafic complex, Kola Peninsula, Russia
Igor V. Pekov
$Ba_4Na_3Ti_3Si_4O_{14}(PO_4,SO_4)_2(O,F)_3$ Bafertisite series
Triclinic: *P*1 or $P\bar{1}$
a 5.38, *b* 7.10, *c* 14.76 Å, α 99.00, β 94.94, γ 90.14°
14.5(100), 3.455(40). 3.382(35), 2.921(35), 2.810(40), 2.683(90), 2.133(80), 2.059(40)

IMA No. **2005–023**
Jacupiranga mine, Cajati County, São Paulo, Brazil
Daniel Atencio
$Ba_2MgZr_4(BaNb_{12}O_{42}) \bullet 12H_2O$
Cubic: $Im\bar{3}$; structure determined
a 13.017 Å
9.183(100), 4.592(12), 4.136(11), 3.256(16), 3.070(13), 2.923(11), 2.655(13), 1.741(21)

IMA No. **2005–024**
Pirquitas mining district, Puna Region, Rinconada Department, Jujuy Province, Argentina
Werner Paar
$(Pb,Sn)_{12.5}As_3Sn_5FeS_{28}$ Franckeite solid-solution series
Two monoclinic sub-cells:
Q layer: *a* 5.839, *b* 5.862, *c* 17.324 Å, β 94.073°
H layer: *a* 6.278, *b* 3.660, *c* 17.347 Å, β 91.416°
4.27(61), 3.426(72), 3.345(87), 3.122(78), 3.009(71), 2.966(94), 2.883(100), 2.065(51)

IMA No. **2005–026**
Capitana mine, Copiapó, Atacama Province, Chile
Anthony R. Kampf
$Ca_2Pb_3(PO_4)_3Cl$
Apatite group
Hexagonal: *P*6$_3$/*m*; structure determined
a 9.857, *c* 7.130 Å
8.538(20), 4.054(60), 3.565(30), 2.942(100), 2.882(30), 2.139(35), 1.918(25), 1.890(25)

IMA No. **2005–027**
Acapulcoite achondrite "Northwest Africa 1054"
Vanni Moggi-Cecchi
$(Ni,Fe)_4P$ New structure-type
Cubic: *P*2$_1$3; structure determined
a 6.025 Å

2.694(15), 2.005(100), 1.906(60), 1.816(20), 1.420(10), 1.348(10), 1.182(15), 1.119(15)

IMA No. **2005–028**
Kirovskii apatite mine, Kukisvumchorr, Khibiny alkaline massif, Kola Peninsula, Russia
Igor V. Pekov
$K_3Na_2Mn_5Si_{12}(O,OH)_{36}•2H_2O$ Related to ganophyllite- and stilpnomelane-group minerals
Monoclinic: $P2_1/m$ or $P2_1$
a 12.55, *b* 5.721, *c* 26.86 Å, β 114.04°
12.28 (100), 4.31(81), 3.555(62), 2.840(90), 2.634(88), 2.366(76), 1.669(64), 1.614(56)

IMA No. **2005–029**
Pegmatite #61, Karnasurt, Lovozero, Kola Peninsula, Russia
Igor V. Pekov
$K_2Ca(Nb,Ti)_4(Si_4O_{12})_2(O,OH)_4•6H_2O$ Labuntsovite group
Monoclinic: *C*2/*m*; structure determined
a 14.6365, *b* 14.2049, *c* 7.8919 Å, β 117.467°
7.100 (100), 6.999(88), 6.476(38), 4.985(78), 3.252(42), 3.246(43), 3.167(46), 3.140(36)

IMA No. **2005–030**
De-Mix quarry, Mont Saint-Hilaire, Quebec, Canada
Igor V. Pekov
$(K,Na)_2Na(Nb,Ti)_4(Si_4O_{12})_2(OH,O)_4•5H_2O$ Labuntsovite group
Monoclinic: *C*2/*m*; structure determined
a 14.626, *b* 14.160, *c* 7.910 Å, β 117.43°
7.102(29), 7.044(54), 6.510(42), 4.995(44), 3.252(51), 3.249(100), 3.163(24), 3.148(28)

IMA No. **2005–031**
Umbozero mine, Alluaiv, Lovozero, Kola Peninsula, Russia
Giovanni Ferraris
$(Na,Sr)_3(Fe^{3+},Mg)_{10}[Ti_2Si_{12}O_{37}](O,OH)_9•8H_2O$ Related to nafertisite
Monoclinic: *P*2/*n* (?)
a 16.47, *b* 5.303, *c* 24.39 Å, β 93.5°
14.1(20), 13.3(30), 12.1(100), 4.38(10), 2.968(8), 2.923(8), 2.692(12), 2.631(13)

IMA No. **2005–032**
Horrsjöberg, Värmland, Sweden
Christian Chopin
$SrFe^{2+}Na_2Ca(Fe^{2+},Mn,Mg)_{13}Al(PO_4)_{11}(PO_3OH)(OH,F)_2$ Arrojadite group
Monoclinic: *Cc*; structure determined
a 16.3992, *b* 9.9400, *c* 24.4434 Å, β 105.489°
3.3784(26), 3.1925(41), 3.0093(100), 2.8202(24), 2.8050(28), 2.7383(28), 2.6854(70), 2.5291 (23)

IMA No. **2005–033**
Horoman, Samani-cho, Urakawa-gun, Japan
A. Kitazake
$Cu(Fe,Ni)_8S_8$ Pentlandite group
Tetragonal: $P4_2/mnm$
a 10.566, *c* 9.749 Å
3.061(74), 2.975(32), 2.641(33), 2.072(100), 1.962(38), 1.954(42), 1.804(83), 1.791(85)

IMA No. **2005–035**
Mt. Kukisvumchorr, Kola Peninsula, Russia
Victor N. Yakovenchuk
$K_5Na_7Mn_{15}(Si_9O_{22})_4(OH)_{10}•4H_2O$ Modulated manganese phyllosilicate
Monoclinic: *C*2/*m*; structure determined
a 17.3335, *b* 23.5390, *c* 13.4895 Å, β 115.069°
12.9(9), 11.7(10), 3.021(9), 2.805(5), 2.608(8), 2.352(6), 1.668(6), 1.659(6)

IMA No. **2005–036**
Felbertal scheelite deposit, Salzburg Province, Austria
Dan Topa
$Cu_8Pb_4Ag_3Bi_{19}S_{38}$ Pavonite homologous series
Monoclinic: *C*2/*m*; structure determined
a 13.380, *b* 4.0007, *c* 31.083 Å, β 93.064°
3.6066(57), 3.4574(100), 3.4357(37), 3.3401(34), 2.9526(29), 2.8742(33), 2.8335(99), 2.2558(29)

IMA No. **2005–037**
Sparone, Val di Locana, Piedmont, Italy
Marco Pasero
$Mn^{2+}_4[Al_4(Mg,Al,Fe^{3+},Mn^{3+})_2][Si_5(V,Si)]O_{22}(OH)_6$ Ardennite group
Orthorhombic: *Pnmm*
a 8.760, *b* 5.838, *c* 18.56 Å
2.948(90), 2.609(100), 2.329(38), 2.271(37), 2.033(55), 1.585(75), 1.525(39), 1.477(45)

IMA No. **2005–039**
Dronino meteorite, Kasimov District, Ryazan Oblast, Russia
Igor V. Pekov
$Fe_2(CO_3)(OH)_2$ Malachite group
Monoclinic: $P2_1/m$ or $P2_1$
a 9.639, *b* 12.226, *c* 6.492 Å, β 96.06°
6.13(40), 5.15(60), 3.73(80), 2.798(95), 2.645(100), 2.361(40), 2.171(40), 1.733(50)

IMA No. **2005–040**
Johnston Fjord, Stornes Peninsula, Prydz Bay, East Antarctica
Edward S. Grew
$(Y, Ca)Na_6(Ca,Na)_8(Mg,Fe)_{43}(PO_4)_{36}$ Fillowite group
Trigonal: $R\bar{3}$; structure determined
a 14.9628, *c* 42.756 Å
3.67(40), 3.52(40), 3.18(10), 2.94(60), 2.73(100), 2.62(10), 2.47(30), 1.84(40)

IMA No. **2005–042**
Bou Azzer, Anti-Atlas, Morocco
Joël Brugger
$(Mg,\square)_{11}\ Bi_6\ (Fe,Cr)_{14}\ (AsO_4,CrO_4)_{14}\ [AsO_3(H_2O)]_4O_{12}(OH)_4(H_2O)_{86}$ New structure-type
Monoclinic: $P2_1/n$: structure determined
a 13.6322, *b* 30.469, *c* 18.4671 Å, β 91.134°
15.78(60), 12.45(70), 11.79(100), 10.98(80), 10.16(80), 7.900(80), 3.414(40), 3.153(40)

IMA No. **2005–043**
Bota–Burum uranium deposit, Kazakhstan
Nikita V. Chukanov
$(NH_4,H_3O)_2(UO_2)_2(AsO_4,PO_4)_2{\bullet}6H_2O$ Meta-autunite group
Tetragonal: *P*4/*mmm*
a 7.19, *c* 9.15 Å
9.27(100), 4.58(25), 3.86(20), 2.80(13), 2.28(20), 2.076(6), 1.823(8), 1.713(7)

IMA No. **2005–044**
Aghbar mine near Bou Azzer, Anti-Atlas, Morocco
Nicolas Meisser
$MgAl_2(AsO_4)_2(OH)_2{\bullet}8H_2O$ Laueite group
Triclinic: $P\bar{1}$; structure determined
a 5.436, *b* 7.075, *c* 10.500 Å, α 97.701, β 102.021, γ 110.295°
9.9 (100), 6.4(90), 4.90(80), 4.08(50), 3.314(40), 3.198(60), 2.885(60), 2.622(60)

IMA No. **2005–045**
Kunratice near Šluknov, northern Bohemia, Czech Republic
František Laufek
Ni_2SbTe_2 Nickeline group
Hexagonal: $P6_3/mmc$; structure determined
a 3.9090, *c* 15.6820 Å
3.3848(13), 2.8421(81), 2.0704(16), 1.9556(100), 1.6114(23), 1.4218(7), 1.2437(20), 1.1290(14)

IMA No. **2005–046a**
Tolbachik volcano, Kamchatka Peninsula, Russia
Nikita V. Chukanov
$K_2Cu_5Cl_8(OH)_4{\bullet}H_2O$
Monoclinic: $P2/m$ or $P2_1/m$
a 24.34, *b* 5.878, *c* 11.626 Å, β 86.7°
11.63(100), 5.88(20), 5.80(27), 5.73(17), 5.12(12), 3.052(15), 2.518(19), 2.321(17)

IMA No. **2005–047**
Rapid Creek, Yukon Territory, Canada
Christian Chopin
$^{A1}K\ ^{A2}Na\ ^{B1}Na\ ^{B2}Na\ ^{Na1,2}Na_2\ ^{Na3}\square\ ^{Ca}Ca\ ^{M}(Fe,Mn,Mg)_{13}\ Al\ (PO_4)_{11}\ ^{P1x}(PO_3OH)\ ^{W}(OH,F)_2$ Arrojadite group
Monoclinic: *Cc*; structure determined
a 16.5520, *b* 10.0529, *c* 24.6477 Å, β 106.509°
5.86(29), 5.03(28), 3.009(34), 3.050(100), 2.798(25), 2.793(28), 2.777(24), 2.698(71)

IMA No. **2005–048**
Branchville, Fairfield County, Connecticut, USA
Christian Chopin
$^{A1}K\ ^{A2}Na\ ^{B1}Mn\ ^{B2}\square\ ^{Na1,2}Na_2\ ^{Na3}Na\ ^{Ca}Ca\ ^{M}(Mn,Fe,Mg)_{13}\ Al\ (PO_4)_{11}\ ^{P1x}(PO_4)\ ^{W}(OH,F)_2$ Arrojadite group
Monoclinic: *Cc*; structure determined
a 16.6900, *b* 10.1013, *c* 24.8752(13) Å, β 105.616°
5.97(27), 3.245(33), 3.063(100), 2.868(27), 2.788(27), 2.779(29), 2.730(89), 2.570(27)

IMA No. **2005–049**
Grube Vereinigung, near Eisenbach, Taunus, Hesse, Germany
Uwe Kolitsch
$PbFe_3(PO_4)_2(OH)_4(H_2O,OH)_2$ Dimorphic relationship with kintoreite
Triclinic: $P\bar{1}$; structure determined
a 5.307, *b* 7.209, *c* 7.349 Å, α 87.75, β 86.36, γ 71.42°
6.84(64), 4.85(100), 4.17(26), 3.667(47), 3.547(57), 3.417(52), 3.022(51), 2.834(45)

IMA No. **2005–050**
Fuka mine, Fuka, Bitchu-cho, Takahashi City, Okayama Prefecture, Japan
Isao Kusachi
$Ca_4CuB_4O_6(OH)_6(CO_3)_2$ Cu-dominant analogue of borcarite
Monoclinic: *C*2/*m*
a 17.794, *b* 8.381, *c* 4.4494 Å, β 102.42°
7.57(100), 2.899(44), 2.727(68), 2.671(84), 2.272(48), 2.201(28), 1.887(52), 1.698(34)

IMA No. **2005–051**
Johnston Fjord, Stornes Peninsula, Larsemann Hills, Prydz Bay, East Antarctica
Edward S. Grew
$(Na,\square)Ca_2(Mg,Fe^{2+},Fe^{3+})_2(Fe^{3+},Mg)_2(Fe^{2+},Mg)_2(PO_4)_6(H_2O)_2$ Wicksite group
Orthorhombic: *Pbca*; structure determined
a 12.4899, *b* 11.6264, *c* 12.7825 Å
6.40(5), 3.497(40), 3.000(80), 2.895(80), 2.735(100), 2.545(10), 2.091(30)

IMA No. **2005–053**
Jáchymov Ag–Bi–Co–Ni–U deposit, Krušné hory Mts., western Bohemia, Czech Republic
Jiří Sejkora
$(Zn,Cu,Co)Cu_4(AsO_4)_2(AsO_3OH)_2{\bullet}9H_2O$ Zn-dominant analogue of lindackerite
Triclinic: $P\bar{1}$; structure determined
a 6.3948, *b* 8.0024, *c* 10.3557 Å, α 85.488, β 79.354, γ 84.673°
10.185(100), 7.974(12), 3.987(13), 3.637(15), 3.395(37), 3.238(15), 2.910(12), 2.668(16)

IMA No. **2005–054**
Titoskoe deposit, Chersky Range, basin of the river Dogdo, Sakha Republic (Yakutia), Russia
Nikita V. Chukanov
$Mg_3(BO_3)(OH)_3$ OH-dominant analogue of fluoborite
Hexagonal: $P6_3/m$
a 8.912, *c* 3.112 Å
7.69(52), 4.45(82), 2.916(42), 2.573(65), 2.551(49), 2.422(100), 2.141(44), 2.128(60)

IMA No. **2005–055**
Madeni Zakh, Iran
Andreas Ertl
$K_2(Fe^{2+},Mg)_2(Mg,Fe^{3+})_4$
$Fe^{3+}{}_2Al(SO_4)_{12}•18H_2O$ Voltaite group
Tetragonal: $I4_1/acd$; structure determined
a 19.2080, *c* 27.2158 Å
5.543(28), 3.396(100), 3.136(21), 3.038(39), 2.848(31), 2.534(21), 2.078(29), 1.601(21)

IMA No. **2005–056**
Sapucaia pegmatite, Galilea, Minas Gerais, Brazil
Christian Chopin
$PbFe^{2+}Na_2Ca(Fe^{2+},Mn,Mg)_{13}$
$Al(PO_4)_{11}(PO_3OH)(OH,F)_2$ Arrojadite group
Monoclinic: *Cc*; structure determined
a 16.4304, *b* 9.9745, *c* 24.5869 Å, β 105.485°
3.208(43), 3.019(100), 2.829(35), 2.820(33), 2.750(29), 2.698(55), 2.694(32), 2.538(30)

IMA No. **2005–058a**
Sidi-bou-Kricha, Marrakech province, Morocco
Christian Chopin
$BaFe^{2+}Na_2Ca(Fe^{2+},Mn,Mg)_{13}$
$Al(PO_4)_{11}(PO_3OH)(F,OH)_2$ Arrojadite group
Monoclinic: *Cc*; structure determined
a 16.4970, *b* 10.0176, *c* 24.6359 Å, β 105.649°
3.400(31), 3.211(47), 3.032(100), 2.841(34), 2.759(33), 2.706(39), 2.703(68), 2.543(38)

IMA No. **2005–061a**
Sapucaia mine, Minas Gerais, Brazil
Daniel Atencio
$Ca_2\square_2(Fe^{3+},Mn,Mg)_4Be_4(PO_4)_6(OH)_4•6H_2O$
Roscherite group
Monoclinic: *C*2/*c*
a 15.92, *b* 11.91, *c* 6.61 Å, β 96.4°
9.485(44), 5.943(100), 4.816(65), 3.169(44), 3.117(25), 3.065(22), 2.777(41), 2.643(42)

Older Proposals

IMA No. **2002–032a**
Novodneprovskoe deposit, Kazakhstan
Galiya K. Bekenova
$AuPb_3$
Tetragonal: $I42m$
a 11.954, *c* 5.890 Å
2.792(2), 2.668(1), 2.423(1), 2.342(10), 1.8705(2), 1.5825(3), 1.4705(2), 1.3890(1)

IMA No. **2004–027b**
Lake Bolshoi Ishkul, Ilmen Mountains, Ilmen Nature Reserve, South Urals, Russia
Victor G. Korinevsky
$(K,Na)Ca_2(Mg,Fe^{2+},Fe^{3+},Al)_5(Si,Al)_8O_{22}(OH,Cl)_2$ Amphibole group
Monoclinic: *C*2/*m*
a 9.958, *b* 18.037, *c* 5.346 Å, β 105.498°
8.500(60), 3.385(41), 3.282(42), 3.135(100), 2.941(22), 2.720(45), 2.359(35), 2.168(29)

IMA No. **2004–042a**
Bunan deposit, Shandong Province, People's Republic of China
Xiang-Ping Gu
$Ag_9FeTe_2S_4$
Orthorhombic: space group unknown
a 12.769, *b* 14.814, *c* 16.233 Å
6.726(69), 6.416(39), 5.951(33), 3.265(100), 2.981(24), 2.188(71), 2.123(31), 1.949(33)

Modifications to the Nomenclature

IMA No. **05–B**
The name of the mineral noélbensonite has been modified in noelbensonite.

IMA No. **05–D**
A new scheme of nomenclature has been approved for minerals of the arrojadite group; this will be published by the authors: Christian Chopin, Fernando Cámara and Roberta Oberti. Minerals of this group will have root names (arrojadite or dickinsonite), followed by suffixes. The species name sigismundite is replaced by the name arrojadite-(BaFe).

IMA No. **05–E**
The species and name natromontebrasite are discredited because natromontebrasite is a mixture of OH-rich amblygonite with lacroixite and subordinate wardite.

Nullified CNMMN Decision

Proposal 2004–051, hydrous alumina, was approved by the CNMMN (see the report on Minerals approved in 2004). Several CNMMN members had asked, however, for a re-examination of akdalaite (69–002), which was approved as the first natural hydrous alumina. The authors of 2004–051 obtained holotype material of akdalaite from the Fersman Museum in Moscow. The re-examination showed that akdalaite and the material for 2004–051 are identical. The previously refined unit-cell of akdalaite is incorrect, so that akdalaite and 2004–051 are actually the same mineral species. The name *akdalaite* has priority; the fact that akdalaite was given a wrong space group does not necessitate a formal redefinition of this mineral. The re-examination and 2004–051 should be published as "New data and a new occurrence of akdalaite". The approval decision of the CNMMN on 2004–051 is consequently nullified.