Almarudite $K(\square, Na)_2(Mn, Fe, Mg)_2[(Be, Al)_3Si_{12}]O_{30}$

Crystal Data: Hexagonal. *Point Group*: 6/*m* 2/*m* 2/*m*. Crystals thick tabular on {00*1} to 1.5 mm, display {00*1}, {10*0}, {10*2} and {11*0}.

Physical Properties: *Cleavage:* None. *Fracture*: Irregular. *Tenacity*: Brittle.
Hardness = n.d. D(meas.) = n.d. D(calc.) = 2.72

Optical Properties: Transparent to translucent. *Color*: Yellow to orange. *Streak*: Light orange. *Luster*: Vitreous.
Optical Class: Uniaxial (-). ω = 1.560 ε = 1.559 *Pleochroism*: Strong, *O* = orange, *E* = colorless.

Cell Data: *Space Group*: *P*6/*mmc*. a = 9.997 c = 14.090 Z = 2

X-ray Powder Pattern: Bellerberg volcano lava field, eastern Eifel area, Germany.
2.882 (100), 3.187 (90), 4.076 (80), 2.732 (50), 7.047 (40), 5.000 (40), 3.522 (40)

Chemistry:

	(1)
Na_2O	0.66
K_2O	4.05
BeO	5.18
MgO	1.51
CaO	0.12
MnO	7.31
FeO	4.48
ZnO	0.24
Al_2O_3	4.09
SiO_2	72.31
Total	99.95

(1) Bellerberg volcano, eastern Eifel area, Germany; average of 7 electron microprobe analyses, BeO by laser-ablation ICP-MS; corresponding to $K_{0.86}Na_{0.21}(Mn_{1.03}Fe_{0.62}Mg_{0.38}Zn_{0.03}Ca_{0.02})_{\Sigma=2.08}(Be_{2.07}Al_{0.80})_{\Sigma=2.87}Si_{12.05}O_{30.00}$.

Mineral Group: Milarite group.

Occurrence: In metasomatized silica-rich xenoliths in leucite tephrite lava.

Association: Tridymite, sanidine, a clinopyroxene, an amphibole, quartz, hematite, braunite (Bellerberg volcano, Germany).

Distribution: From a quarry at the Bellerberg volcano lava field, near Ettringen, 2 km north of Mayen, Laacher See region, eastern Eifel area, Germany.

Name: Honors the authors' hosting and supporting institution, "Universität Wien", derived from the university's proper name "ALma MAter RUDolphina".

Type Material: The Natural History Museum, Vienna, Austria.

References: (1) Mihajlović, T., C.L. Lengauer, T. Ntaflos, U. Kolitsch, and E. Tillmanns (2004) Two new minerals, rondorfite, $Ca_8Mg[SiO_4]_4Cl_2$, and almarudite, $K(\square,Na)_2(Mn,Fe,Mg)_2(Be,Al)_3[Si_{12}O_{30}]$, and a study of iron-rich wadalite, $Ca_{12}[(Al_8Si_4Fe_2)O_{32}]Cl_6$, from the Bellerberg (Bellberg) volcano, Eifel, Germany. Neues Jahrb. Mineral. Abh., 179, 265-294. (2) (2004) Amer. Mineral., 89(10), 1576-1577 (abs. ref. 1).