Trattnerite $(Fe,Mg)_2(Mg,Fe)_3[Si_{12}O_{30}]$

Crystal Data: Hexagonal. *Point Group: 6/m 2/m* 2/*m*. Short prismatic to tabular crystals to 1 mm, showing {100}, {001}, {101} and {111}.

Physical Properties: *Cleavage:* Good on {001}, poor on {100}. *Fracture:* n.d. *Tenacity:* Brittle. Hardness = n.d. D(meas.) = n.d. D(calc.) = 2.68

Optical Properties: Translucent. *Color:* Deep blue to yellowish green. *Streak:* White. *Luster:* Vitreous.
Optical Class: Uniaxial (-). $\omega = 1.589(1)$ $\varepsilon = 1.586(1)$
Pleochroism: *Strong; O* = deep blue, *E* = yellowish green.

Cell Data: *Space Group: P6/mcc*. $a = 10.050(1)$ $c = 14.338(2)$ $Z = 2$

X-ray Powder Pattern: Stradner Kogel quarry, near Bad Gleichenberg, eastern Styria, Austria. 7.17 (100), 8.7 (97), 5.535 (96), 3.207 (85), 5.026 (61), 4.352 (53), 2.767 (38)

Chemistry:

	(1)
Na_2O	0.03
K_2O	0.33
CaO	0.02
MgO	9.75
MnO	0.56
ZnO	0.36
Al_2O_3	0.21
Fe_2O_3	17.93
TiO_2	0.07
SiO_2	70.80
Total	100.06

(1) Stradner Kogel quarry, near Bad Gleichenberg, eastern Styria, Austria; average of 17 electron microprobe analyses, no H_2O detected by IR; Mg and Fe distributions from crystal structure analysis, Fe^{3+}/Fe^{2+} by charge balance; corresponding to $(K_{0.07}Na_{0.01})_{\Sigma=0.08}(Mg_{2.46}Fe^{3+}_{1.99}Fe^{2+}_{0.30}Mn_{0.08}Zn_{0.05}Al_{0.04}Ti_{0.01})_{\Sigma=4.93}[Si_{12}O_{30}]$.

Mineral Group: Milarite (osumilite) group.

Occurrence: In small cavities within a Si-rich xenolith in nephelinite volcanic rock.

Association: Sanidine, plagioclase, quartz, tridymite, hematite, orthopyroxene, clinopyroxene, clinoamphibole**.**

Distribution: From the Stradner Kogel haüyne–nephelinite quarry, near Bad Gleichenberg, eastern Styria, Austria.

Name: Honors the knowledgeable mineral collector, Walter Trattner, who found the specimen.

Type Material: Landesmuseum, Joanneum Graz and in the Natural History Museum, Vienna, Austria; 82775-82779.

References: (1) Postl, W., F. Walter, K. Ettinger, C. Hauzenberger, H.-P. Bojar (2004) Trattnerite, $(Fe,Mg)_2(Mg,Fe)_3[Si_{12}O_{30}]$, a new mineral of the milarite group: mineral data and crystal structure. Eur. J. Mineral., 16, 375-380. (2) (2005) Amer. Mineral., 90, 273-274 (abs. ref. 1).