Ferroindialite $(Fe^{2+},Mg)_2Al_4Si_5O_{18}$

Crystal Data: Hexagonal. *Point Group*: 6/*m* 2/*m* 2/m. As hexagonal prismatic or tabular crystals, to 1.5 mm.

Physical Properties: *Cleavage*: None. *Fracture*: Conchoidal. *Tenacity*: Brittle.
Hardness = 7 D(meas.) = 2.66(1) D(calc.) = 2.667

Optical Properties: Transparent. *Color*: Brownish purple to gray with a violet-blue tint.
Streak: White. *Luster*: Vitreous. *Pleochroism*: Weak, *X* = colorless, *Z* = pale violet.
Dispersion: r < *v*, weak.
Optical Class: Biaxial (–) [anomalous]. α = 1.539(2) β = 1.552(2) γ = 1.554(2)
2V(meas.) = 30(10)°

Cell Data: *Space Group*: *P*6/*mcc*. *a* = 9.8759(3) *c* = 9.3102(3) Z = 2

X-ray Powder Pattern: Bellerberg Mountain, Eifel region, Germany.
8.59 (100), 3.390 (35), 3.055 (31), 4.094 (27), 3.147 (19), 2.657 (12), 1.695 (9)

Chemistry:

	(1)
Na_2O	0.14
K_2O	0.46
MgO	4.95
MnO	1.13
FeO	12.66
Fe_2O_3	2.64
Al_2O_3	30.45
SiO_2	47.22
Total	99.65

(1) Bellerberg Mountain, Eifel region, Germany; average of 5 electron microprobe analyses, Fe^{2+} and Fe^{3+} calculated from structure refinement, absence of OH^- and H_2O confirmed by IR spectroscopy; corresponding to $(K_{0.06}Na_{0.03})(Fe^{2+}_{1.12}Mg_{0.78}Mn_{0.10})_{\Sigma=2.00}(Al_{3.79}Fe^{3+}_{0.21})_{\Sigma=4.00}Si_{4.98}O_{18}$.

Mineral Group: Beryl group.

Occurrence: In a metamorphosed pelitic xenolith in alkaline basalt.

Association: Sillimanite, sanidine, phlogopite, enstatite-ferrosilite, wagnerite, fluorapatite, tridymite, zircon, high-Mg almandine.

Distribution: From the Caspar quarry, Bellerberg Mountain, near Mayen, Eifel region, Rheinland-Pfalz, Germany.

Name: As the iron-dominant (*ferro*) analog of *indialite*.

Type Material: A.E. Fersman Mineralogical Museum, Russian Academy of Sciences, Moscow, Russia (# 4400/1).

References: (1) Chukanov, N.V., S.M. Aksenov, I.V. Pekov, B. Ternes, W. Schüller, D.I. Belakovskiy, K.V. Van, and G. Blass (2014) Ferroindialite $(Fe^{2+},Mg)_2Al_4Si_5O_{18}$ - a new beryl-group mineral from the Eifel volcanic region, Germany. Zap. Ross. Mineral. Obshch., 143(1), 46-56 (in Russian with English abstract). Geology of Ore Deposits, 56(8), 637–643 (in English).
(2) (2015) Amer. Mineral., 100, 334-335 (abs. ref. 1).