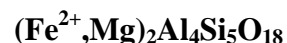


**Ferroindialite**

**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].  $\alpha = 1.539(2)$   $\beta = 1.552(2)$   $\gamma = 1.554(2)$   
 $2V(\text{meas.}) = 30(10)^\circ$

**Cell Data:** *Space Group:* P6/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)

<b>Chemistry:</b>	(1)
Na <sub>2</sub> O	0.14
K <sub>2</sub> O	0.46
MgO	4.95
MnO	1.13
FeO	12.66
Fe <sub>2</sub> O <sub>3</sub>	2.64
Al <sub>2</sub> O <sub>3</sub>	30.45
<u>SiO<sub>2</sub></u>	<u>47.22</u>
Total	99.65

(1) Bellerberg Mountain, Eifel region, Germany; average of 5 electron microprobe analyses, Fe<sup>2+</sup> and Fe<sup>3+</sup> calculated from structure refinement, absence of OH<sup>-</sup> and H<sub>2</sub>O confirmed by IR spectroscopy; corresponding to (K<sub>0.06</sub>Na<sub>0.03</sub>)(Fe<sup>2+</sup><sub>1.12</sub>Mg<sub>0.78</sub>Mn<sub>0.10</sub>) $\Sigma=2.00$ (Al<sub>3.79</sub>Fe<sup>3+</sup><sub>0.21</sub>) $\Sigma=4.00$ Si<sub>4.98</sub>O<sub>18</sub>.

**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<sup>2+</sup>,Mg)<sub>2</sub>Al<sub>4</sub>Si<sub>5</sub>O<sub>18</sub> - 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).