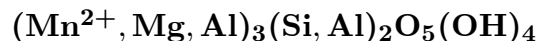


Kellyite

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Crystal Data: Hexagonal. *Point Group:* 6. As irregular to platy tablets and laths, to 3 mm.**Physical Properties:** *Cleavage:* Perfect on {0001}. *Hardness* = n.d. *D*(meas.) = 3.07
D(calc.) = 3.11**Optical Properties:** Transparent. *Color:* Yellow; light yellow in thin section.
Optical Class: Biaxial (-). *Pleochroism:* *X* = colorless to greenish yellow; *Y* = *Z* = pale yellow to reddish brown. *Orientation:* *X* ⊥ (0001). *Dispersion:* *r* > *v*, moderate. $\alpha = 1.639(1)$
 $\beta = 1.646(1)$ $\gamma = 1.646(1)$ $2V(\text{meas.}) = 30^\circ\text{--}16^\circ$ **Cell Data:** *Space Group:* $P6_3$. $a = 5.438(8)$ $c = 14.04(1)$ $Z = [4]$ **X-ray Powder Pattern:** Bald Knob, North Carolina, USA.
3.51 (100), 7.0 (90), 2.53 (60), 2.67 (40), 2.34 (40), 1.954 (30), 1.570 (30)

Chemistry:	(1)
	SiO ₂ 17.60
	TiO ₂ < 0.05
	Al ₂ O ₃ 28.55
	Fe ₂ O ₃ 2.18
	MnO 38.84
	MgO 2.97
	H ₂ O [10.82]
	<hr/> Total [100.96]

(1) Bald Knob, North Carolina, USA; by electron microprobe, H₂O calculated from stoichiometry; corresponds to $(\text{Mn}_{1.82}\text{Al}_{0.84}\text{Mg}_{0.24}\text{Fe}_{0.09})_{\Sigma=2.99}(\text{Al}_{1.02}\text{Si}_{0.98})_{\Sigma=2.00}\text{O}_5(\text{OH})_4$.**Polymorphism & Series:** two-layer hexagonal and six-layer rhombohedral polytypes noted.**Mineral Group:** Kaolinite-serpentine group.**Occurrence:** In banded Ca-Mn carbonate-rich rocks (Bald Knob mine, North Carolina, USA); in an intrusive alkalic gabbro-syenite complex (Mont Saint-Hilaire, Canada).**Association:** Kutnohorite, galaxite, jacobsonite, manganoan chlorite, alleghanyite, sonolite (Bald Knob mine, North Carolina, USA); aegirine, analcime, calcite, catapleiite, microcline, natrolite (Mont Saint-Hilaire, Canada).**Distribution:** In the Bald Knob mine, near Sparta, Alleghany Co., North Carolina, USA. From Mont Saint-Hilaire, Quebec, Canada.**Name:** To honor Professor William Crowe Kelly (1929–), geologist, of the University of Michigan, Ann Arbor, Michigan, USA.**Type Material:** Department of Geological Sciences, University of Michigan, Ann Arbor, Michigan; National Museum of Natural History, Washington, D.C., USA, 127101, 137140, 137141.**References:** (1) Peacor, D.R., E.J. Essene, W.B. Simmons, Jr., and W.C. Bigelow (1974) Kellyite, a new Mn-Al member of the serpentine group from Bald Knob, North Carolina, and new data on grovesite. *Amer. Mineral.*, 59, 1153–1156.