

Kornite **$\text{KNa}_2(\text{Mg}, \text{Mn}^{3+}, \text{Fe}^{3+}, \text{Li})_5\text{Si}_8\text{O}_{22}(\text{OH})_2$**

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Crystal Data: Monoclinic. *Point Group:* $[2/m.]$ In bundles of fibers, elongated along $[001]$, commonly bent, to 200 μm ; rimming hennomartinite.

Physical Properties: *Cleavage:* Parallel to $[001]$. *Tenacity:* Brittle. Hardness = $[5-6]$
D(meas.) = n.d. D(calc.) = 3.15

Optical Properties: Transparent. *Color:* Dark red to brownish lilac. *Luster:* Vitreous.
Optical Class: Biaxial $(-)$. *Pleochroism:* $X = \text{pink}$; $Y = \text{dark red}$; $Z = \text{red-orange}$. *Orientation:*
 $Z = b$; $Y \wedge c = 60^\circ-65^\circ$. $\alpha = 1.654(4)$ $\beta = [1.675]$ $\gamma = 1.696(4)$ $2V(\text{meas.}) = 88^\circ-92^\circ$

Cell Data: *Space Group:* $P2_1/m$ or $P2_1/a$. $a = 9.94(1)$ $b = 17.80(2)$ $c = 5.302(4)$
 $\beta = 105.5(2)^\circ$ $Z = 2$

X-ray Powder Pattern: Wessels mine, South Africa; assembled from single crystal patterns.
3.257 (s), 3.132 (s), 2.812 (s), 2.553 (s), 8.890 (m), 8.427 (m), 5.077 (m)

Chemistry:

	(1)
SiO_2	56.06
Al_2O_3	0.00
Fe_2O_3	4.93
Mn_2O_3	13.17
MgO	10.03
CaO	0.00
Li_2O	1.96
Na_2O	7.61
K_2O	3.56
F	n.d.
H_2O	$[2.68]$
Total	$[100.00]$

(1) Wessels mine, South Africa; by electron microprobe, Li by ion microprobe, average of seven analyses, H_2O by difference; corresponds to $(\text{K}_{0.65}\text{Na}_{0.31})_{\Sigma=0.96}(\text{Na}_{1.79}\text{Li}_{0.21})_{\Sigma=2.00}(\text{Mg}_{2.12}\text{Mn}_{1.43}^{3+}\text{Li}_{0.91}\text{Fe}_{0.52}^{3+})_{\Sigma=4.98}\text{Si}_{8.00}\text{O}_{22}(\text{OH})_2$.

Mineral Group: Amphibole (alkali) group: $\text{Na}_B \geq 1.34$; $\text{Li}_C \geq 0.5$; $\text{Mn}^{3+} > \text{Fe}^{3+}$.

Occurrence: From a hand specimen, in veinlets of sérandite-pectolite cutting sugilite, probably of hydrothermal origin in a bedded manganese deposit.

Association: Sérandite-pectolite, sugilite, braunite, taikanite, hennomartinite.

Distribution: From the Wessels mine, near Kuruman, Cape Province, South Africa.

Name: For Hermann Korn (?–1946), German geologist, professionally associated with Henno Martin, for whom an associated mineral is named.

Type Material: Natural History Museum, Bern, Switzerland, B5564.

References: (1) Armbruster, T., R. Oberhänsli, V. Bermanec, and R. Dixon (1993) Hennomartinite and kornite, two new Mn^{3+} rich silicates from the Wessels mine, Kalahari, South Africa. Schweiz. Mineral. Petrog. Mitt., 73, 349–355. (2) (1994) Amer. Mineral., 79, 763–764 (abs. ref. 1).