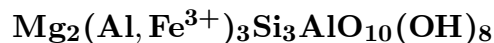


Sudoite

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Crystal Data: Monoclinic. *Point Group:* 2/m. Fine-grained.**Physical Properties:** *Cleavage:* Perfect on {001}. Hardness = n.d. D(meas.) = 2.63–2.68
D(calc.) = 2.653**Optical Properties:** Translucent. *Color:* Whitish.*Optical Class:* Biaxial (+). $\alpha = 1.581\text{--}1.583$ $\beta = 1.584\text{--}1.589$ $\gamma = [1.591\text{--}1.601]$
2V(meas.) = 64°–70°**Cell Data:** *Space Group:* C2/m. $a = 5.237(3)$ $b = 9.070(5)$ $c = 14.285(13)$
 $\beta = 97^\circ 02(5)'$ $Z = 2$ **X-ray Powder Pattern:** Negaunee, Michigan, USA.

2.501 (100), 4.52 (85), 14.2 (80), 4.74 (80), 3.55 (65), 1.511 (60), 2.409 (50)

Chemistry:

	(1)		(1)
SiO ₂	32.81	MnO	0.29
TiO ₂	0.18	MgO	13.54
Al ₂ O ₃	35.71	CaO	0.03
Fe ₂ O ₃	2.66	K ₂ O	0.03
FeO	1.07	H ₂ O	12.95
		Total	99.27

(1) Ottré, Belgium; by XRF, Fe²⁺:Fe³⁺ determined separately, H₂O by titration with Karl Fischer reagent; corresponds to (Mg_{1.85}Fe_{0.08}²⁺Mn_{0.02})_{Σ=1.95}(Al_{2.86}Fe_{0.18}³⁺Ti_{0.01})_{Σ=3.05}Si_{3.00}Al_{1.00}O₁₀(OH)_{7.91}.**Mineral Group:** Chlorite group.**Occurrence:** Disseminated in hematite ore, probably of hydrothermal origin (Negaunee, Michigan, USA); an authigenic mineral in aeolian sandstones (Kesselberg, Germany); in low-grade metamorphic assemblages (Ottré, Belgium).**Association:** Hematite (Negaunee, Michigan, USA); quartz, carpholite, manganooan garnet, hematite (Biesenrode, Germany); pyrophyllite, diaspore, mica, böhmite (Itaya, Japan).**Distribution:** From Lützelbach, near Plochingen, Baden-Württemberg; in the Kesselberg area, Black Forest; and from near Biesenrode, Harz Mountains, Germany. At Ottré, near Salmchâteau, Ardennes Mountains, Belgium. From Beresov, Ural Mountains, Russia. In the USA, from the Tracy mine, Negaunee, Marquette Co., Michigan. Around the Cigar Lake uranium deposit, Athabasca basin, Saskatchewan, Canada. From the Hanaoka and Kamakita mines, Aomori Prefecture; the Ehara mine, Mitsuishi, and at Itaya, Hyogo Prefecture; in the Furutobe mine, Akita Prefecture; the Kamagamine mine, Hiroshima Prefecture; the Shinyo mine, Nagano Prefecture, and elsewhere in Japan.**Name:** For Professor Toshio Sudo (1911–), University of Tokyo, Tokyo, Japan.**Type Material:** n.d.**References:** (1) von Engelhardt, W., G. Müller, and H. Kromer (1962) Dioktaedrischer Chlorit ("Sudoit") in Sedimenten des Mittleren Keupers von Plochingen (Württ.). *Naturwiss.*, 49, 205–206 (in German). (2) (1963) *Amer. Mineral.*, 48, 213–214 (abs. ref. 1). (3) Eggleton, R.A. and S.W. Bailey (1967) Structural aspects of dioctahedral chlorite. *Amer. Mineral.*, 52, 673–689. (4) Shirozu, H. and S. Higashi (1976) Structural investigations of sudoite and regularly interstratified sericite/sudoite. *Mineral. J. (Japan)*, 8, 158–170. (5) Kramm, U. (1980) Sudoite in low-grade metamorphic manganese rich assemblages. *Neues Jahrb. Mineral., Abh.*, 138, 1–13. (6) Bailey, S.W. and J.S. Lister (1989) Structures, compositions, and X-ray diffraction identification of dioctahedral chlorites. *Clays and Clay Minerals*, 37, 193–202.

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