

Preiswerkite**Na(Mg₂Al)(Al₂Si₂)O₁₀(OH)₂**

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Crystal Data: Monoclinic. *Point Group:* 2/*m*. Crystals are platy, to 1 mm.
Twinning: Common about [310].

Physical Properties: *Cleavage:* Perfect on {001}. Hardness = 2.5 D(meas.) = 2.96
D(calc.) = 2.94

Optical Properties: Translucent. *Color:* Pale green; in thin section, colorless.
Optical Class: Biaxial (-). $\alpha = 1.560(4)$ $\beta = 1.614(2)$ $\gamma = 1.615(2)$ 2V(meas.) = 5°–7°

Cell Data: *Space Group:* C2/*c*. $a = 5.228(7)$ $b = 9.049(10)$ $c = 9.819(12)$
 $\beta = 100.41(13)^\circ$ Z = 2

X-ray Powder Pattern: Geisspfad complex, Switzerland.
2.572 (100), 1.508 (100), 2.457 (70), 4.52 (60), 2.149 (60), 9.64 (50), 3.215 (50)

Chemistry:	(1)
	SiO ₂ 29.9
	Al ₂ O ₃ 35.4
	FeO 2.8
	MgO 18.7
	CaO 0.09
	Na ₂ O 7.35
	K ₂ O 0.19
	H ₂ O 4.6
	Total 99.03

(1) Geisspfad complex, Switzerland; by electron microprobe, H₂O determined separately on an impure concentrate; corresponds to (Na_{0.98}K_{0.02}Ca_{0.01})_{Σ=1.01}(Mg_{1.91}Fe_{0.16})_{Σ=2.07}Al_{2.86}Si_{2.05}O₁₀(OH)_{2.10}.

Polymorphism & Series: 1M, 2M₁ polytypes.

Mineral Group: Mica group.

Occurrence: Formed in a rodingite dike during upper-greenschist to lower-amphibolite facies metamorphism (Geisspfad complex, Switzerland).

Association: Aluminian pargasite, zoisite (Geisspfad complex, Switzerland).

Distribution: In the Geisspfad ultramafic complex, Binntal, Valais, Switzerland. From Liset, Selje district, southwestern Norway.

Name: For H. Preiswerk (1876–1940), Professor in Basel, Switzerland.

Type Material: Natural History Museum, Bern, Switzerland, B2548; The Natural History Museum, London, England, 1982,455.

References: (1) Keusen, H.R. and T. Peters (1980) Preiswerkite, an Al-rich trioctahedral sodium mica from the Geisspfad ultramafic complex (Penninic Alps). *Amer. Mineral.*, 65, 1134–1137. (2) Oberti, R., L. Ungaretti, A. Tlili, D.C. Smith, and J.-L. Robert (1993) The crystal structure of preiswerkite. *Amer. Mineral.*, 78, 1290–1298.