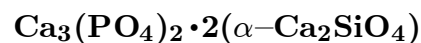


Nagelschmidtit



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Crystal Data: n.d. *Point Group:* n.d. As elongated anhedral grains, to 150 μm .

Twinning: Complexly twinned to produce lamellae intersecting at $\sim 60^\circ$.

Physical Properties: Hardness = n.d. $D(\text{meas.}) = 3.065$ (synthetic). $D(\text{calc.}) = \text{n.d.}$

Optical Properties: Transparent to translucent. *Color:* Colorless to yellowish or brownish.

Optical Class: Uniaxial (-); rarely biaxial (+). $\alpha = 1.638\text{--}1.680$ (synthetic). $\beta = 1.642\text{--}1.675$

$\gamma = 1.652\text{--}1.698$ $2V(\text{meas.}) = \sim 0^\circ\text{--}20^\circ$

Cell Data: *Space Group:* n.d. $Z = \text{n.d.}$

X-ray Powder Pattern: Hatrurim Formation, Israel.

2.66 (vs), 2.80 (s), 1.94 (s), 3.80 (m), 3.42 (m), 2.20 (m), 1.34 (m)

Chemistry:

	(1)
SiO ₂	27.88
Al ₂ O ₃	0.03
Fe ₂ O ₃	0.02
Cr ₂ O ₃	0.03
[MnO]	0.05
MgO	0.03
CaO	62.06
Na ₂ O	0.82
K ₂ O	0.84
P ₂ O ₅	8.27
SO ₃	0.12
Total	100.15

(1) Hatrurim Formation, Israel; by electron microprobe, some MgO probably a misprint for MnO; corresponding to $(\text{Ca}_{3.78}\text{Na}_{0.06}\text{K}_{0.06})_{\Sigma=3.90}(\text{Si}_{1.58}\text{P}_{0.40})_{\Sigma=1.98}\text{O}_8$.

Polymorphism & Series: α and β polymorphic phases appear to be intergrown in the natural material.

Occurrence: In a complex assemblage of high-temperature contact metamorphosed sedimentary rocks.

Association: Gehlenite, rankinite, perovskite, titanian andradite, magnetite.

Distribution: In the Hatrurim Formation, Israel.

Name: For Guenther Nagelschmidt, chemist who first reported the synthetic compound in slags.

Type Material: n.d.

References: (1) Gross, S. (1977) The mineralogy of the Hatrurim Formation, Israel. *Geol. Sur. Israel Bull.* 70, 31. (2) (1978) *Amer. Mineral.*, 63, 425–426 (abs. ref. 1). (3) Barrett, R.L. and W.J. McCaughey (1942) The system $\text{CaO} - \text{SiO}_2 - \text{P}_2\text{O}_5$. *Amer. Mineral.*, 27, 680–695. (4) Segnit, E.R. (1950) New data on the slag minerals nagelschmidtit and steadite. *Mineral. Mag.*, 29, 173–190.