Henritermierite $Ca_3(Mn^{3+},Al)_2(SiO_4)_2(OH)_4$

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Crystal Data: Tetragonal. *Point Group:* $4/m\ 2/m\ 2/m$. As pseudo-octahedral crystals, to 3 mm, and as aggregates of small grains. *Twinning:* Common on {101}, sectored.

Physical Properties: *Fracture:* Conchoidal. Hardness = n.d. D(meas.) = 3.34(2) D(calc.) = 3.40

Optical Properties: Translucent. *Color:* Clove-brown to apricot-brown; lemon-yellow to pale yellow in thin section. *Streak:* White. *Luster:* Vitreous.
Optical Class: Uniaxial (+); may be anomalously biaxial. *Pleochroism:* Weak; O = very pale yellow; E = lemon-yellow. $\omega = 1.765(5)$ $\epsilon = 1.800(5)$ 2V(meas.) = Small.

Cell Data: *Space Group:* $I4_1/acd$. $a = 12.39(1)$ $c = 11.91(1)$ Z = 8

X-ray Powder Pattern: Tachgagalt mine, Morocco.
2.75 (vvs), 2.516 (vs), 4.37 (s), 3.09 (s), 2.98 (s), 2.684 (ms), 1.614 (ms)

Chemistry:

	(1)
SiO_2	24.65
Al_2O_3	5.95
Fe_2O_3	0.95
MnO	22.38
CaO	35.45
active O_2	2.56
H_2O^+	7.85
H_2O^-	0.08
Total	99.87

(1) Tachgagalt mine, Morocco; corresponds to $Ca_{2.97}(Mn^{3+}_{1.48}Al_{0.54}Fe_{0.06})_{\Sigma=2.08}Si_{1.93}O_{7.90}(OH)_{4.10}$.

Occurrence: As small grains filling interstices between crystals of other minerals in a manganese ore deposit (Tachgagalt mine, Morocco).

Association: Marokite, hausmannite, gaudefroyite, calcite (Tachgagalt mine, Morocco); hausmannite, manganite, hematite, calcite, barite, andradite (N'Chwaning mine, South Africa).

Distribution: In the Tachgagalt manganese mine, Anti-Atlas Mountains, Morocco. From the N'Chwaning and Wessels mines, near Kuruman, Cape Province, South Africa.

Name: For Henri F.E. Termier (1897–), Professor of Geology at the Sorbonne, Paris, France.

Type Material: National School of Mines, Paris, France.

References: (1) Gaudefroy C., M. Orliac, F. Permingeat, and A. Parfenoff (1969) L'henritermiérite, une nouvelle espèce minérale. Bull. Soc. fr. Minéral., 92, 185–190 (in French with English abs.). (2) Aubry, A., Y. Dusausoy, A. Laffaille, and J. Protas (1969) Détermination et étude de la structure cristalline de l'henritermiérite, hydrogrenat de symétrie quadratique. Bull. Soc. fr. Minéral., 92, 126–133 (in French with English abs.). (3) (1969) Amer. Mineral., 54, 1739 (abs. refs. 1 and 2).

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