

Crystal Data: Monoclinic. *Point Group:* 2/m. As euhedral flattened prismatic crystals to 300 μm .

Physical Properties: *Cleavage:* Perfect on (001). *Tenacity:* Brittle. *Fracture:* Curved. Hardness = 3.5 D(meas.) = 3.28(2) D(calc.) = 3.298 Nonfluorescent.

Optical Properties: Transparent to translucent. *Color:* Yellow to orange. *Streak:* Yellowish white. *Luster:* Vitreous.

Optical Class: Biaxial. $1.791 < n(\text{calc.}) < 1.799$ *Pleochroism:* Strong: X = yellow, Y = orange yellow, Z = brownish orange. *Absorption:* $X < Y \ll Z$. Elongation (+). *Orientation:* $Z \wedge c \sim 14^\circ$.

Cell Data: *Space Group:* $P2_1/n$. $a = 7.8289(2)$ $b = 14.5673(4)$ $c = 6.7011(2)$ $\beta = 93.773(2)^\circ$ $Z = 4$

X-Ray Diffraction Pattern: Fianel mine, Val Ferrera, Grisons, Switzerland. 3.048 (100), 5.34 (80), 2.730 (60), 2.206 (60), 7.28 (50), 2.344 (50), 6.88 (40)

Chemistry:	(1)	(2)
MnO	36.84	38.58
FeO	0.06	
As ₂ O ₅	25.32	31.25
V ₂ O ₅	28.05	20.38
SiO ₂	0.13	
<u>H₂O</u>	<u>9.51</u>	<u>9.79</u>
Total	99.91	100.00

(1) Fianel mine, Val Ferrera, Grisons, Switzerland; average electron microprobe analysis supplemented by Raman spectroscopy, H₂O calculated; corresponding to $\text{Mn}_{1.97}(\text{V}^{5+}_{1.17}\text{As}_{0.83}\text{Si}_{0.01})_{\Sigma=2.01}\text{O}_7 \cdot 2\text{H}_2\text{O}$. (2) $\text{Mn}^{2+}_2\text{V}^{5+}\text{As}^{5+}\text{O}_7 \cdot 2\text{H}_2\text{O}$.

Polymorphism & Series: As-dominant analogue of fianelite.

Occurrence: In a small Alpine metamorphic Mn deposit in dolomitic marble.

Association: Ansermetite, Fe oxyhydroxide (Fianel); braccoite, fianelite, quartz, hematite (Valletta).

Distribution: From the Fianel mine, Val Ferrera, Grisons, Switzerland [TL] and the Valletta mine, Canosio, Cuneo, Piedmont, Italy.

Name: Honors Gottfried *Rüdlinger* (b. 1919), a pioneer in the 1960-1980s, in the study of small minerals from the Alpine manganese mineral deposits of Grisons.

Type Material: Mineralogical Collection, Geology Museum, University of Lausanne, Switzerland (MGL 080116) and Museum of Natural Sciences, Torino, Italy (M/U 17121).

References: (1) Roth, P., N. Meisser, F. Nestola, R. Škoda, F. Cámara, F. Bosi, M.E. Ciriotti, U. Hålenius, C. Schnyder, and R. Bracco (2020) Rüdlingerite, $\text{Mn}^{2+}_2\text{V}^{5+}\text{As}^{5+}\text{O}_7 \cdot 2\text{H}_2\text{O}$, a new species isostructural with fianelite. *Minerals*, 10, 960, 1-15.