

Crystal Data: Triclinic. *Point Group:* $\bar{1}$. As crusts and spherical granular aggregates to ~1 mm.

Physical Properties: *Cleavage:* None. *Fracture:* n.d. *Tenacity:* n.d. *Hardness* = ~1
D(meas.) = n.d. D(calc.) = 2.12

Optical Properties: [Translucent.] *Color:* Blue-green. *Streak:* White. *Luster:* Vitreous.
Optical Class: Biaxial (+). $\alpha = 1.548(2)$ $\beta = 1.555(2)$ $\gamma = 1.574(2)$ $2V(\text{meas.}) = 86(1)^\circ$
Orientation: $X \wedge c \approx 18^\circ$ (in β obtuse), $Y \approx a$, $Z \wedge b \approx 19^\circ$ (in γ obtuse).

Cell Data: *Space Group:* $P\bar{1}$. $a = 7.548(3)$ $b = 7.805(2)$ $c = 7.821(3)$ $\alpha = 79.03(4)^\circ$
 $\beta = 71.94(3)^\circ$ $\gamma = 65.31(3)^\circ$ $Z = 2$

X-ray Powder Pattern: North Mesa mines, Temple Mountain district, Emery County, Utah, USA.
6.617 (100), 7.053 (80), 4.116 (80), 3.712 (80), 3.206 (70), 2.934 (50), 5.314 (30)

Chemistry:	(1)
VO ₂	33.93
SO ₃	30.78
H ₂ O	[35.52]
Total	100.23

(1) North Mesa mines, Temple Mountain district, Emery County, Utah, USA; average electron microprobe analysis, H₂O calculated from structure; corresponds to $V_{1.04}S_{0.98}O_5(H_2O)_5$.

Polymorphism & Series: Polymorphous with orthominasragrite and minasragrite.

Occurrence: In sandstone in a silicified fossil tree with a rim of coal around the tree.

Association: Orthominasragrite, bobjonesite.

Distribution: From the North Mesa mine group, Temple Mountain mining district, Emery County, Utah, USA.

Name: Prefix, *anortho*, denotes its relation to *minasragrite*, as a triclinic polymorph.

Type Material: Canadian Museum of Nature, Ottawa, Ontario, Canada (CMNMC 83924).

References: (1) Cooper, M.A., F.C. Hawthorne, J.D. Grice, and P. Haynes (2003) Anorthominasragrite, $V^{4+}O(SO_4)(H_2O)_5$, a new mineral species from Temple Mountain, Emery County, Utah, U.S.A.: description, crystal structure and hydrogen bonding. *Can. Mineral.*, 41, 959-979. (2) (2004) *Amer. Mineral.*, 89(2), 467 (abs. ref. 1).