

Crystal Data: Orthorhombic. *Point Group:* 2/m 2/m 2/m. As aggregates of radiating prismatic crystals to 0.2 mm.

Physical Properties: *Cleavage:* None. *Tenacity:* Brittle. *Fracture:* n.d. Hardness = n.d. D(calc.) = 2.185 Nonfluorescent.

Optical Properties: Transparent to translucent. *Color:* Colorless to white. *Streak:* White. *Luster:* Vitreous. *Optical Class:* Biaxial. *n*(calc.) = 1.54

Cell Data: *Space Group:* Pbcn. *a* = 11.3005(3) *b* = 8.6125(3) *c* = 6.8501(2) *Z* = 4

X-Ray Diffraction Pattern: La Fossa crater, Vulcano, Aeolian Islands, Italy. 5.65 (100), 4.84 (89), 6.85 (74), 3.06 (56), 3.06 (53), 3.08 (47), 2.68 (28)

Chemistry:	(1)	(2)
K ₂ O	3.38	
Al ₂ O ₃	25.35	23.59
SO ₃	36.58	37.05
F	26.12	26.36
(NH ₄) ₂ O	[22.47]	24.10
-O = F	11.00	11.10
Total	102.90	100.00

(1) La Fossa crater, Vulcano, Aeolian Islands, Italy; SEM-EDS analysis, NH₄ calculated from stoichiometry; corresponds to [(NH₄)_{1.85}K_{0.15}]_{Σ=2.00}Al_{1.06}F_{2.94}S_{0.98}O_{3.06}. (2) (NH₄)₂AlF₃(SO₄).

Occurrence: Fumarole sublimate encrustation at the rim of an active volcanic crater.

Association: Thermessaite, sulfur, arcanite, mascagnite, intermediate members of the arcanite-mascagnite series.

Distribution: From La Fossa crater, Vulcano, Aeolian Islands, Italy [TL]. On the burning Anna I coal dump, Anna mine, near Aachen, North Rhine-Westphalia, Germany.

Name: Prefix identifies the (NH₄)-analogue of *thermessaite*.

Type Material: C.L. Garavelli Museum, Dipartimento di Scienze della Terra e Geoambientali, Università degli Studi di Bari "Aldo Moro", Italy (15/nm-V28).

References: (1) Garavelli, A., D. Pinto, D. Mitolo, and U. Kolitsch (2021) Thermessaite-(NH₄), (NH₄)₂AlF₃(SO₄), a new fumarole mineral from La Fossa crater at Vulcano, Aeolian Islands, Italy. *Mineral. Mag.*, 85, 665-672.