

Crystal Data: Triclinic. *Point Group:* $\bar{1}$. As microcrystalline aggregates to 2 mm; sometimes as well-shaped cubic crystals which are pseudomorphs after an unidentified mineral.

Physical Properties: *Cleavage:* n.d. *Tenacity:* n.d. *Fracture:* n.d. *Hardness* = 1
D(meas.) = n.d. D(calc.) = 2.020

Optical Properties: Transparent. *Color:* Violet. *Streak:* Pale violet. *Luster:* Vitreous.
Optical Class: n.d.

Cell Data: Space Group: $P\bar{1}$. $a = 4.982(1)$ $b = 6.896(1)$ $c = 9.115(2)$ $\alpha = 90.53(3)^\circ$
 $\beta = 97.85(3)^\circ$ $\gamma = 110.08(3)^\circ$ $Z = 1$ [Synthetic $\text{Cu}(\text{C}_3\text{N}_3\text{O}_3\text{H}_2)_2(\text{NH}_3)_2$]

X-ray Powder Pattern: Pabellón de Pica Mountain, Iquique Province, Tarapacá Region, Chile.
3.140 (100), 6.52 (68), 5.15 (47), 4.66 (21), 4.35 (9), 3.22 (7), 2.074 (7)

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|-------------------|--------|
| Chemistry: | (1) |
| C | 20.33 |
| N | 31.11 |
| O | 28.34 |
| Cu | 17.27 |
| Zn | 0.24 |
| H | [2.82] |
| Total | 100.11 |

(1) Pabellón de Pica Mountain, Iquique Province, Tarapacá Region, Chile; average of 10 electron microprobe analyses supplemented by FTIR spectroscopy, H calculated from the structural formula; corresponds to $\text{Cu}_{0.96}\text{Zn}_{0.01}\text{N}_{7.84}\text{C}_{5.98}\text{O}_{6.25}\text{H}_{9.96}$.

Occurrence: Formed in cracks in gabbro by the convergence of solutions derived from the oxidation of disseminated Cu mineralization and nitrogen-rich guano in an arid region.

Association: Salammoniac, dittmarite, möhnite, gypsum, chanabayaite, antipinite.

Distribution: From the guano deposit at Pabellón de Pica Mountain, Iquique Province, Tarapacá Region, Chile.

Name: Honors the Universalmuseum Joanneum, Graz, Austria which had its bicentennial in 2011.

Type Material: Universalmuseum Joanneum, Graz, Austria (85.011).

References: (1) Bojar, H.-P., F. Walter, and J. Baumgartner (2017) Joanneumite, $\text{Cu}(\text{C}_3\text{N}_3\text{O}_3\text{H}_2)_2(\text{NH}_3)_2$, a new mineral from Pabellón de Pica, Chile and the crystal structure of its synthetic analogue. *Mineral. Mag.*, 81(1), 155-166. (2) (2017) *Amer. Mineral.*, 102, 1146-1147 (abs. ref. 1).