Dobšináite $Ca_2Ca(AsO_4)_2 \cdot 2H_2O$

Crystal Data: Monoclinic. *Point Group*: 2/*m*. As aggregates, to 4 mm, of densely intergrown, slightly rounded, thin platy crystals to 0.1 mm.

Physical Properties: *Cleavage*: Good on {010}. *Tenacity*: Brittle. *Fracture*: Uneven.
Hardness = ~3 D(meas.) = n.d. D(calc.) = 3.395

Optical Properties: Transparent to translucent. *Color*: White to pink (cobalt rich).
Streak: White. *Luster*: Vitreous.
Optical Class: Biaxial (-). $\alpha' = 1.601(2)$ $\gamma' = 1.629(2)$ 2V(meas.) = 60° (+/- 20°)
Dispersion: Weak, $r > v$. Extinction undulatory ~parallel to elongation.

Cell Data: *Space Group: P*$2_1/c$. $a = 5.990(2)$ $b = 13.013(4)$ $c = 5.726(2)$ $\beta = 108.47(3)°$ Z = 2

X-Ray Diffraction Pattern: Zemberg-Terézia veins, near Dobšiná, Rožnava Co., Slovakia.
3.026 (100), 3.249 (77), 3.385 (66), 2.822 (60), 3.201 (42), 3.443 (38), 5.197 (37)

Chemistry:

	(1)	(2)	(3)
CaO	36.74	33.91	38.75
MgO	0.89		
CoO	0.51	3.66	
NiO	0.37	0.79	
As_2O_5	52.75	53.59	52.94
P_2O_5	0.03		
SO_3	0.18	0.20	
H_2O	[8.31]	[8.45]	8.30
Total	99.78	100.60	100.00

(1) Zemberg-Terézia veins, near Dobšiná, Rožnava Co., Slovakia; average electron microprobe analysis supplemented by Raman spectroscopy, H_2O calculated, white crystal; corresponds to $Ca_2(Ca_{0.84}Mg_{0.10}Co_{0.03}Ni_{0.02})_{\Sigma=0.99}[(AsO_4)_{1.99}(SO_4)_{0.01}]_{\Sigma=2.00} \cdot 2H_2O$. (2) Do., pink crystal; corresponds to $Ca_2(Ca_{0.58}Co_{0.21}Ni_{0.04})_{\Sigma=0.83}[(AsO_4)_{1.99}(SO_4)_{0.01}]_{\Sigma=2.00} \cdot 2H_2O$. (3) $Ca_2Ca(AsO_4)_2 \cdot 2H_2O$.

Mineral Group: Roselite group.

Occurrence: Secondary in siderite-ankerite hydrothermal carbonate-quartz veins with Ni-Fe-Co-Cu mineralization. By oxidation of primary safflorite and arsenopyrite in a Ca-enriched environment (abundant calcite in the matrix) under relatively dry conditions.

Association: Phaunouxite, picropharmacolite, erythrite-hörnesite, gypsum, aragonite (Slovakia).

Distribution: From the Dionýz mining field, Zemberg-Terézia vein system, 2.2 km northeast of Dobšiná, Spišsko-gemerské rudohorie Mts., Rožnava Co., Košice Region, Slovakia [TL]. At the Tuvinskaya deposit, Tuva Autonomous Republic, Russia.

Name: For the occurrence near *Dobšiná* where the studied material was collected.

Type Material: Department of Mineralogy and Petrography, Moravian Museum, Brno, Czech Republic (B12257).

References: (1) Sejkora, J., M. Stevko, R. Skoda, E. Viskova, J. Toman, S. Hreus, J. Plasil, and Z. Dolnicek (2021) Dobsinaite, $Ca_2Ca(AsO_4)_2 \cdot 2H_2O$, a new member of the roselite group from Dobsina (Slovak Republic). J. Geosciences, 66(2), 127-135. (2) (2022) Amer. Mineral., 107, 1657 (abs. ref. 1).