Calciocopiapite $CaFe_4^{3+}(SO_4)_6(OH)_2 \cdot 20H_2O$

Crystal Data: Triclinic. *Point Group:* $\overline{1}$. As powdery crusts.

Physical Properties: Hardness = [2–3] (by analogy to copiapite group members). D(meas.) = n.d. D(calc.) = 2.225

Optical Properties: Semitransparent. *Color:* Grayish yellow to brownish yellow. *Optical Class:* Biaxial. α = n.d. β = n.d. γ = n.d. 2V(meas.) = n.d.

Cell Data: *Space Group:* $[P\overline{1}]$ (by analogy to copiapite; ICDD 27-77). $a = 7.35$ $b = 18.21$ $c = 7.01$ $\alpha = 85.52°$ $\beta = 103.55°$ $\gamma = 100.62°$ Z = 1

X-ray Powder Pattern: Dashkesan deposit, Azerbaijan.
3.108 (10), 3.027 (10), 2.809 (10), 1.860 (10), 3.458 (9), 1.267 (9), 1.244 (9)

Chemistry:

	(1)	(2)
SO_3	39.00	38.92
Fe_2O_3	26.25	25.88
MgO	0.32	
CaO	4.85	4.54
H_2O	29.30	30.66
insol.	0.40	
Total	100.12	100.00

(1) Dashkesan deposit, Azerbaijan. (2) $CaFe_4(SO_4)_6(OH)_2 \cdot 20H_2O$.

Mineral Group: Copiapite group.

Occurrence: In the oxidized weathering zone of a magnetite–pyrite deposit.

Association: Chalcanthite, malachite, hydrous iron oxides.

Distribution: From the Dashkesan deposit, Middle Caucasus Mountains, Azerbaijan.

Name: As the *calcium* member of the *copiapite* group.

Type Material: n.d.

References: (1) Kashkai, M.A. and R.M. Aliev (1960) The new mineral calciocopiapite (tusiite) of the copiapite group and the general characteristics of this group. Akad. Nauk Azerbaijan SSR, Trudy Azerbaijan Geograph. Obshch, 49–76 (in Russian with English abs.). (2) (1962) Amer. Mineral., 47, 807–808 (abs. ref. 1).