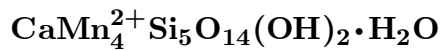


Santaclaraite



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Crystal Data: Triclinic. *Point Group:* $\bar{1}$. Rarely as thick prismatic crystals, to 1 cm. As radiating lamellar aggregates of thin prismatic to tabular subhedral crystals, flattened on {100}. In rough spherules, also as cross-vein prismatic to nearly fibrous crystals. *Twinning:* On {100}.

Physical Properties: *Cleavage:* Good on {100} and {010}. *Hardness* = 6.5
D(meas.) = 3.31 D(calc.) = 3.379

Optical Properties: Transparent. *Color:* Pale pink or moderate reddish orange. *Streak:* Pale pink. *Luster:* Vitreous.

Optical Class: Biaxial (-). *Pleochroism:* In thick sections, weak; X = very pale red; Y = pale red; Z = pale reddish brown. *Orientation:* $Z \wedge c = -2^\circ$; $X \wedge b = -21^\circ$ in {100} sections; $Y \wedge a = -14.5^\circ$ in {010} sections; $Z \wedge c = 16^\circ$. *Absorption:* $Y > Z > X$. $\alpha = 1.681(2)$ $\beta = 1.696(2)$ $\gamma = 1.708(2)$ $2V(\text{meas.}) = 81(1)^\circ$

Cell Data: *Space Group:* $P\bar{1}$. $a = 9.738(2)$ $b = 9.970(1)$ $c = 7.603(1)$ $\alpha = 109.77(1)^\circ$
 $\beta = 93.95(1)^\circ$ $\gamma = 104.97(2)^\circ$ $Z = 2$

X-ray Powder Pattern: Santa Clara Co., California, USA.

7.04 (100), 3.003 (84), 3.152 (80), 7.69 (63), 3.847 (57), 3.524 (39), 4.797 (38)

Chemistry:

	(1)
SiO ₂	44.74
Al ₂ O ₃	0.12
FeO	0.09
MnO	41.26
CoO	0.06
NiO	0.06
MgO	0.31
CaO	7.24
Na ₂ O	0.12
H ₂ O	5.28
Total	99.28

(1) Santa Clara Co., California, USA; H₂O by microcoulometric methods; corresponds to $(\text{Ca}_{0.87}\text{Na}_{0.03})_{\Sigma=0.90}(\text{Mn}_{3.94}^{2+}\text{Mg}_{0.05}\text{Fe}_{0.01}^{2+}\text{Ni}_{0.01}\text{Co}_{0.01})_{\Sigma=4.02}(\text{Si}_{5.04}\text{Al}_{0.02})_{\Sigma=5.06}\text{O}_{14.03}(\text{OH})_{1.97}\cdot\text{H}_2\text{O}$.

Occurrence: As cross-fiber veins and irregular masses in manganese-oxide-stained chert and quartz.

Association: Calcite, quartz, barite, harmotome, chalcopyrite, copper, howieite, kutnohorite, rhodochrosite, braunite.

Distribution: From an unspecified manganese mine in the Diablo Range, Santa Clara Co., and the Buckeye mine, Stanislaus Co., California, USA.

Name: For the occurrence in Santa Clara Co., California, USA.

Type Material: National Museum of Natural History, Washington, D.C., USA.

References: (1) Erd, R.C. and Y. Ohashi (1984) Santaclaraite, a new calcium-manganese silicate hydrate from California. *Amer. Mineral.*, 69, 200–206. (2) Ohashi, Y. and L.W. Finger (1981) The crystal structure of santaclaraite, $\text{CaMn}_4[\text{Si}_5\text{O}_{14}(\text{OH})](\text{OH})\cdot\text{H}_2\text{O}$: the role of hydrogen atoms in the pyroxenoid structure. *Amer. Mineral.*, 66, 154–168.

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