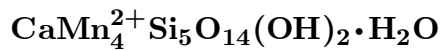


# Santaclaraite



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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 <sub>2</sub>	44.74
Al <sub>2</sub> O <sub>3</sub>	0.12
FeO	0.09
MnO	41.26
CoO	0.06
NiO	0.06
MgO	0.31
CaO	7.24
Na <sub>2</sub> O	0.12
H <sub>2</sub> O	5.28
Total	99.28

(1) Santa Clara Co., California, USA; H<sub>2</sub>O 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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