Chantalite $CaAl_2SiO_4(OH)_4$

Crystal Data: Tetragonal. *Point Group:* $4/m$. As anhedral grains up to 0.3 mm.

Physical Properties: Hardness = n.d. D(meas.) = 2.8–2.9 D(calc.) = 2.97

Optical Properties: Semitransparent. *Color:* Colorless to white. *Luster:* Vitreous. *Optical Class:* Uniaxial (–). $\omega = 1.653(1)$ $\epsilon = 1.642(1)$

Cell Data: *Space Group:* $I4_1/a$. $a = 4.952(1)$ $c = 23.275(6)$ Z = 4

X-ray Powder Pattern: Taurus Mountains, Turkey.
2.598 (100), 4.171 (70), 3.349 (60), 1.453 (60), 2.235 (50), 4.828 (45), 2.202 (35)

Chemistry:

	(1)	(2)
SiO_2	23.74	23.64
Al_2O_3	38.44	40.12
FeO	0.02	
MgO	0.06	
CaO	21.57	22.07
Na_2O	0.06	
H_2O	[16.11]	14.17
Total	[100.00]	100.00

(1) Taurus Mountains, Turkey; by electron microprobe, average of four analyses, H_2O by difference. (2) $CaAl_2SiO_4(OH)_4$.

Occurrence: In rodingite dikes in an ophiolite.

Association: Vuagnatite, prehnite, hydrogrossular, chlorite, calcite.

Distribution: From Covur Yokusutepe, Taurus Mountains, Burdur Province, Turkey.

Name: For Chantal Sarp, wife of the mineral's discoverer.

Type Material: Natural History Museum, Geneva, Switzerland, 435/1; The Natural History Museum, London, England, 1984,741; National Museum of Natural History, Washington, D.C., USA, 146559.

References: (1) Sarp, H., J. Deferne, and B.W. Liebich (1977) Chantalite, $CaAl_2SiO_4(OH)_4$, a new natural calcium aluminum silicate. Schweiz. Mineral. Petrog. Mitt., 57, 149–156 (in French with English abs.). (2) (1978) Amer. Mineral., 63, 1282. (abs. ref. 1). (3) Liebich, B.W., H. Sarp, and E. Parthé (1979) The crystal structure of chantalite, $CaAl_2(OH)_4SiO_4$. Zeits. Krist., 150, 53–63.