Attakolite $\mathbf{(Ca,Sr)Mn^{2+}(Al,Fe^{3+})_4[H(Si,P)O_4](PO_4)_3(OH)_4}$.

Crystal Data: Monoclinic. *Point Group:* $2/m$. Indistinctly crystalline, massive. *Twinning:* Possible twin lamellae are observed in thin section.

Physical Properties: Hardness = 5 D(meas.) = 3.09–3.23 D(calc.) = [3.35]

Optical Properties: Transparent. *Color:* White to pale red; colorless in thin section. *Optical Class:* Biaxial (+). *Orientation:* $Y = b$; $Z = c$; $X \wedge a = 24°$. *Dispersion:* $r < v$ to $r \gg v$, strong. $\alpha = 1.650$–1.655 $\beta = 1.654$–1.664 $\gamma = 1.661$–1.675 2V(meas.) = 75°–84° 2V(calc.) = 74°

Cell Data: *Space Group:* $C2/m$. $a = 17.188(4)$ $b = 11.477(8)$ $c = 7.322(5)$ $\beta = 113.83(4)°$ Z = 4

X-ray Powder Pattern: Västanå mine, Sweden.
3.09 (10), 3.13 (8), 4.34 (7), 2.97 (6), 6.61 (4), 5.68 (4), 3.51 (4)

Chemistry:

	(1)	(2)		(1)	(2)
SiO_2	9.35	5.9	Na_2O	0.03	
Al_2O_3	26.97	26.8	F	0.10	
Fe_2O_3	0.60	3.9	Cl	0.06	
FeO	1.31		H_2O^+	5.92	[10.5]
MnO	7.10	9.7	H_2O^-	0.20	
PbO	0.03		CO_2	0.57	
MgO	0.29		P_2O_5	32.59	33.6
CaO	11.40	6.6	SO_3	0.13	
SrO	3.30	3.0	$-O = (F,Cl)_2$	0.06	
			Total	99.89	[100.0]

(1) Västanå mine, Sweden; contaminated with calcite 1.30% and svanbergite 0.76%. (2) Do.; by electron microprobe, total Fe as Fe_2O_3 on crystallo-chemical grounds, H_2O by difference; corresponds to $(Ca_{0.81}Sr_{0.20})_{\Sigma=1.01}Mn_{0.95}(Al_{3.65}Fe^{3+}_{0.34})_{\Sigma=3.99}[H(Si_{0.68}P_{0.28})_{\Sigma=0.96}O_4](PO_4)_3(OH)_4$.

Occurrence: In an iron deposit.

Association: Berlinite, lazulite, trolleite, apatite, svanbergite, pyrophyllite, hematite, calcite, quartz.

Distribution: From the Västanå mine, near Näsum, Skåne, Sweden.

Name: From the Greek for *salmon*, for the pale red color.

References: (1) Dana, E.S. (1892) Dana's system of mineralogy, (6th edition), 847. (2) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 845. (3) Gabrielson, O. and P. Gejer. (1966) The mineral attakolite. Arkiv Mineral. Geol., 3(30), 537–543. (4) (1966) Amer. Mineral., 51, 534 (abs. ref. 3). (5) Grice, J.D. and P.J. Dunn (1992) Attakolite: new data and crystal-structure determination. Amer. Mineral., 77, 1285–1291.