

Epidote-(Sr)**CaSrAl₂Fe³⁺(Si₂O₇)(SiO₄)(OH)**

Crystal Data: Monoclinic. *Point Group:* 2/m. Crystals prismatic, to 1 cm; as radial aggregates of acicular to columnar crystals. Twinning on (100).

Physical Properties: *Cleavage:* Perfect on {001}. *Fracture:* n.d. *Tenacity:* n.d.
Hardness = 6.5 D(meas.) = n.d. D(calc.) = 3.74

Optical Properties: Translucent. *Color:* Brown to pale reddish brown. *Streak:* n.d. *Luster:* n.d.
Optical Class: Biaxial (-). $\alpha = 1.737(2)$ $\beta = 1.780(2)$ $\gamma = 1.792(2)$ $2V(\text{calc}) = 62^\circ$
Pleochroism: X = pale greenish yellow; $Y = Z$ = pale reddish brown to brownish pink.

Cell Data: *Space Group:* $P2_1/m$. $a = 8.928(5)$ $b = 5.652(1)$ $c = 10.244(5)$ $\beta = 114.46(4)^\circ$
 $Z = 2$

X-ray Powder Pattern: Nagakawara deposit, Ananai mine, Kochi Prefecture, Japan.
2.92 (100), 2.58 (49), 3.50 (42), 2.61 (42), 2.72 (41), 2.83 (32), 3.26 (23)

Chemistry:	(1)
CaO	11.72
SrO	17.63
Mn ₂ O ₃	2.96
Fe ₂ O ₃	13.17
Al ₂ O ₃	18.53
SiO ₂	34.32
<u>H₂O</u>	<u>1.71</u>
Total	100.04

(1) Nagakawara deposit, Ananai mine, Kochi Prefecture, Japan; average of 41 electron microprobe analyses, H₂O calculated, corresponding to (Ca_{1.10}Sr_{0.90}) $\Sigma=2.00$ (Al_{1.92}Fe³⁺_{0.87}Mn³⁺_{0.20}) $\Sigma=2.99$ Si_{3.01}O₁₂(OH).

Mineral Group: Epidote group, clinozoizite subgroup.

Occurrence: A late-stage hydrothermal vein mineral in a tinzenite deposit in metachert (Nagakawara deposit) and in piemontite breccias (Hohnomori deposit).

Association: Calcite, tinzenite, piemontite-(Sr).

Distribution: Nagakawara and Hohnomori deposits, Ananai mine, Kochi Prefecture, Japan.

Name: For its chemical composition as a member of the epidote group.

Type Material: Hokkaido University museum, Sapporo, Japan (Mineral-07400).

References: (1) Minakawa, T., H. Fukushima, D. Nishio-Hamane, and H. Miura (2008) Epidote-(Sr), CaSrAl₂Fe³⁺(Si₂O₇)(SiO₄)(OH), a new mineral from the Ananai mine, Kochi Prefecture, Japan. *J. Mineral. Petrol. Sci.*, 103, 400–406. (2) (2009) *Amer. Mineral.*, 94, 1078 (abs. ref. 1).