

Crystal Data: Orthorhombic. *Point Group:* 222. As grains to 500 μm ; as aggregates with other minerals, to 2 mm.

Physical Properties: *Cleavage:* None. *Tenacity:* n.d. *Fracture:* n.d. Hardness = n.d. D(meas.) = n.d. D(calc.) = 3.214

Optical Properties: Transparent. *Color:* Colorless. *Streak:* White. *Luster:* Vitreous. *Optical Class:* n.d.

Cell Data: *Space Group:* $P2_12_12_1$. $a = 11.818(2)$ $b = 11.993(3)$ $c = 4.6872(8)$ $Z = 4$ [calculated from XRD data by analogy to synthetic SrAl₂(PO₄)₂F₂]

X-ray Powder Pattern: Hinomaru-Nago mine, Abu County, Yamaguchi Prefecture, Japan. 2.951 (100), 3.139 (86), 2.928 (80), 3.529 (43), 3.683 (32), 4.362 (25), 2.183 (24)

Chemistry:	(1)	(2)	(3)
P ₂ O ₅	45.04	42.78	44.08
Al ₂ O ₃	31.26	30.28	31.67
CaO	17.29	13.60	17.42
SrO	0.22	5.39	
F	11.24	[11.37]	11.80
H ₂ O	[0.31]	0	
– O = F ₂	4.73	[4.91]	4.97
Total	100.63	98.51	100.00

(1) Hinomaru-Nago mine, Kiyo area, Abu, Abu County, Yamaguchi Prefecture, Japan; average of 21 electron microprobe analyses, H₂O calculated from stoichiometry; corresponds to (Ca_{0.99}Sr_{0.01}) $\Sigma=1.00$ Al_{1.96}P_{2.03}O₈(F_{1.89}OH_{0.11}). (2) Do., average electron microprobe analyses, F calculated from stoichiometry; corresponds to (Ca_{0.81}Sr_{0.17}) $\Sigma=0.98$ Al_{1.99}P_{2.01}O₈(F_{2.00}). (3) CaAl₂(PO₄)₂F₂.

Occurrence: In hydrothermally altered, felsic pyroclastic rocks, related to a biotite adamellite intrusion.

Association: Quartz, augelite, and/or trolleite, apatite, crandallite.

Distribution: From the Hinomaru-Nago mine, Kiyo area, Abu, Abu County, Yamaguchi Prefecture, Japan.

Name: For the type locality, near the town of *Abu*, Abu County, Yamaguchi Prefecture, Japan.

Type Material: Kitakyushu Museum of Natural History and Human History, Kitakyushu, Japan (KMNHM000003).

References: (1) Satomi Enju and Seiichiro Uehara (2017) Abuite, CaAl₂(PO₄)₂F₂, a new mineral from the Hinomaru-Nago mine, Yamaguchi Prefecture, Japan. *J. Mineral. and Petrol. Sci.*, 112, 109–115.
(2) (2018) *Amer. Mineral.*, 103, 330 (abs. ref. 1).