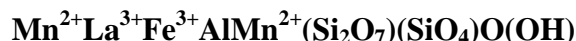


Ferriandrosite-(La)

Crystal Data: Monoclinic. *Point Group:* 2/m. As prismatic crystals elongated along [010] to 150 μm .

Physical Properties: *Cleavage:* Imperfect on {001}. *Fracture:* n.d. *Tenacity:* Brittle. Hardness = n.d. D(meas.) = n.d. D(calc.) = 4.23

Optical Properties: Translucent. *Color:* Dark brown. *Streak:* n.d. *Luster:* Vitreous. *Optical Class:* n.d.

Cell Data: *Space Group:* $P2_1/m$. $a = 8.8779(1)$ $b = 5.73995(1)$ $c = 10.0875(2)$ $\beta = 113.899(1)^\circ$ $Z = 2$

X-ray Powder Pattern: Calculated pattern.

2.900 (100), 2.615 (53), 3.510 (46), 2.870 (40), 2.710 (35), 2.706 (35), 2.573 (26)

Chemistry:	(1)	(2)		(1)	(2)
SiO ₂	29.25	28.85	Y ₂ O ₃	0.01	
TiO ₂	0.86		La ₂ O ₃	12.97	26.07
Al ₂ O ₃	9.61	8.16	Ce ₂ O ₃	5.25	
Cr ₂ O ₃	0.08		Pr ₂ O ₃	2.05	
V ₂ O ₃	3.40		Nd ₂ O ₃	5.16	
Fe ₂ O ₃	[5.48]	12.78	Gd ₂ O ₃	0.48	
FeO	[5.23]		Er ₂ O ₃	0.01	
MnO	12.05	22.70	F	0.28	
NiO	0.02		-O = F ₂	0.12	
MgO	0.65		H ₂ O	[3.01]	1.44
CaO	4.26		Total	100.00	100.00
SrO	0.04				

(1) Shobu area, Ise City, Mie Prefecture, Japan; average of 3 electron microprobe analyses, FeO and Fe₂O₃ calculated for charge balance, H₂O by difference; corresponding to $^{A1}(\text{Mn}^{2+}_{0.56}\text{Ca}_{0.44})^{A2}[(\text{La}_{0.49}\text{Ce}_{0.20}\text{Pr}_{0.08}\text{Nd}_{0.19}\text{Gd}_{0.02})_{\Sigma=0.97}\text{Ca}_{0.03}]^{M1}(\text{Fe}^{3+}_{0.40}\text{V}^{3+}_{0.28}\text{Al}_{0.20}\text{Fe}^{2+}_{0.05}\text{Ti}^{4+}_{0.07})^{M2}(\text{Al}_{0.97}\text{Fe}^{3+}_{0.03})^{M3}(\text{Mn}^{2+}_{0.50}\text{Fe}^{2+}_{0.40}\text{Mg}_{0.10})(\text{SiO}_4)(\text{Si}_2\text{O}_7)\text{O}(\text{OH})$. (2) $\text{Mn}^{2+}\text{La}^{3+}\text{Fe}^{3+}\text{AlMn}^{2+}(\text{Si}_2\text{O}_7)(\text{SiO}_4)\text{O}(\text{OH})$.

Mineral Group: Epidote supergroup, allanite group.

Occurrence: In tephroite-calcite veinlets cutting a stratiform ferromanganese deposit.

Association: Ferriakasaite-(La), rhodochrosite, bementite, allanite-group minerals.

Distribution: From the Shobu area, Ise City, Mie Prefecture, Japan.

Name: For a member of the allanite group with dominant Mn²⁺ in the *Al* site and Fe³⁺ in the *M1* site, and a suffix for the dominant rare earth element.

Type Material: National Museum of Nature and Science, Tokyo, Japan (NSM M-43919, M-43920).

References: (1) Nagashima, M., D. Nishio-Hamane, N. Tomita, T. Minakawa, and S. Inaba (2015) Ferriakasaite-(La) and ferriandrosite-(La): New epidote supergroup minerals from Ise, Mie Prefecture, Japan. *Mineral. Mag.*, 79(3), 735-753. (2) (2016) *Amer. Mineral.*, 101, 1712 (abs. ref. 1).