Ferriakasakaite-(La) $CaLa^{3+}Fe^{3+}AlMn^{2+}(SiO_4)(Si_2O_7)O(OH)$

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.) = 4.22

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

Cell Data: *Space Group*: $P2_1/m$. a = 8.8733(2) b = 5.7415(1) c = 10.0805(3) β = 113.845(2)° Z = 2

X-ray Powder Pattern: Calculated pattern.
2.899 (100), 2.614 (53), 3.509 (47), 2.871 (40), 2.710 (35), 2.706 (35), 9.22 (26)

Chemistry:	(1)	(2)		(1)	(2)
SiO_2	29.15	29.55	K_2O	0.03	
TiO_2	0.75		P_2O_5	0.03	
Al_2O_3	9.35	8.36	Y_2O_3	0.03	
Cr_2O_3	0.06		La_2O_3	12.73	26.71
V_2O_3	4.11		Ce_2O_3	5.25	
Fe_2O_3	[5.96]	13.09	Pr_2O_3	1.93	
FeO	[5.05]		Nd_2O_3	4.97	
MnO	10.90	11.63	Gd_2O_3	0.51	
NiO	0.03		Er_2O_3	0.09	
MgO	0.46		F	0.05	
CaO	5.38	9.19	$-O = F_2$	0.02	
SrO	0.01		H_2O	[3.17]	1.48
BaO	0.02		Total	100.00	100.00

(1) Shobu area, Ise City, Mie Prefecture, Japan; average of 3 electron microprobe analyses, FeO and Fe_2O_3 calculated for charge balance, H_2O by difference; corresponding to $^{A1}(Ca_{0.54}Mn^{2+}_{0.46})$ $^{A2}[(La_{0.48}Ce_{0.20}Pr_{0.07}Nd_{0.18}Gd_{0.02})_{\Sigma=0.95}Ca_{0.05}]^{M1}(Fe^{3+}_{0.42}V^{3+}_{0.34}Al_{0.18}Ti^{4+}_{0.06})^{M2}(Al_{0.96}Fe^{3+}_{0.04})$ $^{M3}(Mn^{2+}_{0.50}Fe^{2+}_{0.43}Mg_{0.07})(SiO_4)(Si_2O_7)O(OH)$. (2) $CaLa^{3+}Fe^{3+}AlMn^{2+}(Si_2O_7)(SiO_4)O(OH)$.

Mineral Group: Epidote supergroup, allanite group.

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

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

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

Name: Honors Professor Masahide Akasaka (b. 1950) for his study of minerals occurring in Mn-Fe ore deposits, particularly the natural and synthetic epidote-supergroup minerals.

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) Ferriakasakaite-(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).