Amamoorite $CaMn^{2+}_2Mn^{3+}(Si_2O_7)O(OH)$

Crystal Data: Monoclinic. *Point Group*: 2/*m*. As irregular grains to a few hundred μm.

Physical Properties: *Cleavage:* Fair on {100} and {001}. *Tenacity*: n.d. *Fracture*: n.d.
Hardness = ~6 D(meas.) = n.d. D(calc.) = 3.88

Optical Properties: Translucent. *Color*: Shiny black, intensely orange-red in transmitted light.
Streak: Brown. *Luster*: Vitreous.
Optical Class: Biaxial (+). α(calc) = 1.795 β = 1.805(5) γ = 1.820(5) 2V(meas.) = 80(1)°
Pleochroism: Strong, *X* = very dark brown, *Y* = yellow brown, *Z* = dark brown. *Orientation*: *Z* = *b*, *X* ⊥ cleavage plates, *Y* ⊥ longitudinal cleavage. *Absorption*: *X* > *Y* >> *Z*.

Cell Data: Space Group: $P2_1/a$. a = 13.0981(1) b = 8.8897(2) c = 5.9029(5) β = 91.697(2)°
Z = 4

X-ray Powder Pattern: Amamoor mine, southeastern Queensland, Australia.
2.893 (100), 7.349 (76), 2.699 (66), 2.754 (50), 2.725 (50), 2.827 (48), 2.100 (35)

Chemistry:

	(1)
SiO_2	30.3
Al_2O_3	0.10
FeO	0.35
MgO	0.46
MnO	[33.0]
Mn_2O_3	[18.4]
CaO	14.04
H_2O	[2.2]
Total	98.85

(1) Amamoor mine, southeastern Queensland, Australia; average of 6 electron microprobe analyses, H_2O calculated from structure, total Mn (MnO = 49.5) distributed to MnO and Mn_2O_3 from structure analysis; corresponds to $Ca_{1.02}Mn^{2+}_{1.89}Mg_{0.05}Fe^{2+}_{0.02}Mn^{3+}_{0.95}Al_{0.01}Si_{2.05}O_9H_{0.99}$.

Occurrence: In a metamorphosed manganese ore deposit.

Association: Braunite, hausmannite.

Distribution: From drill core samples from the Amamoor mine, Mary Valley manganese deposits, ~15 km southwest of Gympie, southeastern Queensland, Australia.

Name: For the locality of the first specimens, the *Amamoor* mine.

Type Material: Western Australian Museum, Perth (M8.2018) and the Natural History Museum of Los Angeles County, Los Angeles, California, USA (66937).

References: (1) Townend, R., I.E. Grey, W.G. Mumme, A.R. Kampf, M.P. Roberts, R.W. Gable, and R. Dale (2019) Amamoorite, $CaMn^{2+}_2Mn^{3+}(Si_2O_7)O(OH)$, a new ilvaite-related mineral from the Mary Valley, southeastern Queensland. Australian J. Mineral., 20(2), 7-14. (2) (2021) Amer. Mineral., 106, 157 (abs. ref. 1).