

Crystal Data: Monoclinic. *Point Group:* 2/m. As bladed crystals to 0.1 mm, flattened on {010}, and in divergent sprays.

Physical Properties: *Cleavage:* Perfect on {010}. *Fracture:* Irregular. *Tenacity:* Brittle. Hardness = ~ 2 D(meas.) = 2.74(1) D(calc.) = 2.744 Soluble in dilute HCl.

Optical Properties: Transparent. *Color:* Orangish red. *Streak:* Light pinkish orange. *Luster:* Vitreous.

Optical Class: Biaxial (-). α (calc.) = 1.760 β = 1.780(5) γ = 1.795(5) 2V(meas.) = 81(2)°

Orientation: X = b, Z ^ a = 58° (in obtuse angle β). *Dispersion:* Strong, r < v.

Pleochroism: Shades of brownish orange. *Absorption:* X < Y < Z.

Cell Data: *Space Group:* P2/n. a = 9.146(2) b = 10.424(3) c = 15.532(4) β = 102.653(7)° Z = 2

X-ray Powder Pattern: Packrat mine, near Gateway, Mesa County, Colorado, USA.

10.47 (100), 2.881 (25), 3.568 (24), 3.067 (17), 4.30(11), 3.132(11), 2.615(11)

Chemistry:	(1)	(2)
CaO	2.76	4.78
MnO	33.41	30.25
ZnO	2.26	
V ₂ O ₅	47.91	46.53
As ₂ O ₅	0.45	
H ₂ O	[18.82]	18.44
Total	105.58	100.00

(1) Packrat mine, near Gateway, Mesa County, Colorado, USA; average of 11 electron microprobe analyses supplemented by Raman spectroscopy, H₂O calculated from structure, high analytical total due to partial dehydration under vacuum; corresponds to Mn_{5.32}Ca_{0.56}Zn_{0.31}V_{5.96}As_{0.04}O₃₃H_{23.61}.

(2) CaMn²⁺₅(V₂O₇)₃·12H₂O.

Occurrence: Formed on asphaltum blocks in a mine tunnel in sandstone by the oxidation in a moist environment of montroseite-corvusite assemblages in a roll-front U-V-deposit.

Association: Ansermetite, kegginite, martyite, morrisonite, rossite/metarossite, sherwoodite.

Distribution: From the Packrat mine, near Gateway, Mesa County, Colorado, USA.

Name: For the county in Colorado in which the Packrat mine is located.

Type Material: Natural History Museum of Los Angeles County, Los Angeles, California, USA (65595, 65596, 65597, 65598 and 65599).

References: (1) Kampf, A.R., B.P. Nash, J. Marty, and J.M. Hughes (2017) Mesaite, CaMn²⁺₅(V₂O₇)₃·12H₂O, a new vanadate mineral from the Packrat mine, near Gateway, Mesa County, Colorado, USA. Mineral. Mag., 81(2), 319-327. (2) (2017) Amer. Mineral., 102, 1964-1965 (abs. ref. 1).