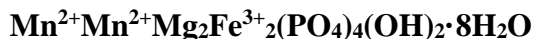


Jahnsite-(MnMnMg)

Crystal Data: Monoclinic. *Point Group:* 2/m. As acicular to prismatic crystals to 250 μm , weakly elongated along [100], flattened on {010}. *Twinning:* By reflection on {001}.

Physical Properties: *Cleavage:* Good on {001}. *Tenacity:* Brittle. *Fracture:* Irregular. Hardness = ~4 D(calc.) = 2.625

Optical Properties: Translucent. *Color:* Yellow to honey-colored or greenish yellow.

Streak: Very pale yellow. *Luster:* Vitreous.

Optical Class: Biaxial (-). $\alpha = 1.616$ $\beta = 1.619(3)$ $\gamma = 1.656(2)$ $2V(\text{calc.}) = 74^\circ$ *Orientation:* $X \approx c$.

Pleochroism: X = greenish gray, Y = yellow, Z = greenish yellow. *Dispersion:* Strong, $r < v$.

Cell Data: *Space Group:* P2/a. $a = 15.177(2)$ $b = 7.176(1)$ $c = 10.006(3)$ $\beta = 111.01(2)^\circ$ $Z = 2$

X-ray Powder Pattern: Sapucaia pegmatite, Sapucaia do Norte, Galiléia, Minas Gerais, Brazil. 9.282 (100), 2.842 (81), 2.988 (52), 3.521 (43), 4.945 (39), 1.958 (27), 4.627 (20)

Chemistry:	(1)	(2)
Na ₂ O	0.77	
CaO	1.72	
MgO	6.16	9.73
MnO	17.41	17.13
ZnO	0.12	
P ₂ O ₅	34.45	34.28
Fe ₂ O ₃	[15.75]	19.28
FeO	[1.79]	
Al ₂ O ₃	2.31	
H ₂ O	[19.35]	19.58
Total	99.83	100.00

(1) Sapucaia pegmatite, Sapucaia do Norte, Galiléia, Minas Gerais, Brazil; average electron microprobe analysis, H₂O by stoichiometry and for charge balance, total iron apportioned to Fe₂O₃ and FeO to have 2(Fe³⁺,Al) in the M(3) site; corresponds to (Mn_{0.50}Ca_{0.25}Na_{0.20}) $\Sigma=0.95$ Mn(Mg_{1.26}Mn_{0.52}Fe²⁺_{0.21}Zn_{0.01}) $\Sigma=2.00$ (Fe³⁺_{1.63}Al_{0.37}) $\Sigma=2.00$ (PO₄)₄(OH)_{1.70}•8H₂O. (2) MnMnMg₂Fe³⁺₂(PO₄)₄(OH)₂•8H₂O.

Mineral Group: Jahnsite group, jahnsite subgroup; Fe³⁺ > Al in the M(3) structural site.

Occurrence: A late-stage alteration product of primary triphylite in a metasomatic unit of zoned granitic pegmatite.

Association: Frondelite, leucophosphite, mangangordonite, ferrisicklerite.

Distribution: On the dumps of the Sapucaia pegmatite, Sapucaia do Norte, Galiléia, Minas Gerais, Brazil.

Name: Root name, *jahnsite*, indicates a member of the group with M(3) = Fe³⁺; the suffix indicates sequentially the dominant atom in the X, M(1), and M(2) structural positions.

Type Material: Mineralogical Collection, Laboratory of Mineralogy, University of Liège, Belgium (21140).

References: (1) Vignola, P., F. Hatert, M. Baijot, N. Rotiroti, A. Risplendente, and S. Varvello (2019) Jahnsite-(MnMnMg), Mn²⁺Mn²⁺Mg²⁺Fe³⁺₂(PO₄)₄(OH)₂•8H₂O, a new phosphate mineral species from Sapucaia Pegmatite, Sapucaia Do Norte, Galiléia, Minas Gerais, Brazil. *Can. Mineral.*, 57(3), 363-370. (2) (2021) *Amer. Mineral.*, 106, 1363-1364 (abs. ref. 1).