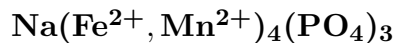


Galileiite



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Crystal Data: Hexagonal. *Point Group:* $\bar{3}$. In anhedral grains, to 30 μm .

Physical Properties: *Tenacity:* Sectile. Hardness = ≤ 4 D(meas.) = n.d.
D(calc.) = [4.07]

Optical Properties: Transparent. *Color:* Colorless to very pale amber.
Optical Class: Uniaxial (+). $\omega = 1.72(3)$ $\epsilon = 1.75(5)$

Cell Data: *Space Group:* $[R\bar{3}]$ (by analogy to chladniite and johnsomervilleite). $a = 14.98$
 $c = 41.66$ $Z = 36$

X-ray Powder Pattern: Grant meteorite.

2.71 (100), 3.01 (90), 4.13 (80), 3.47 (50), 3.21 (50), 2.93 (50), 2.85 (50)

Chemistry:

	(1)	(2)
P ₂ O ₅	40.2	40.08
Cr ₂ O ₃	0.07	
FeO	49.0	54.09
MnO	3.98	
Na ₂ O	5.87	5.83
K ₂ O	0.04	
Total	99.16	100.00

(1) Grant meteorite; by electron microprobe, total Fe as FeO, total Mn as MnO; corresponds to $\text{Na}_{1.01}(\text{Fe}_{3.63}\text{Mn}_{0.30})_{\Sigma=3.93}(\text{P}_{1.01}\text{O}_4)_3$. (2) $\text{NaFe}_4(\text{PO}_4)_3$.

Occurrence: Very rare, as inclusions within troilite nodules in type IIIAB iron meteorites.

Association: Ca-free sarcopside or graftonite, chromite, troilite.

Distribution: In the Grant, El Ampal, Mount Edith, Chupaderos, and Bella Roca meteorites.

Name: To honor Galileo Galilei (1564–1642), Italian astronomer and poet.

Type Material: Field Museum, Chicago, Illinois, Me1959; National Museum of Natural History, Washington, D.C., USA.

References: (1) Olsen, E.J. and I.M. Steele (1997) Galileiite: a new meteoric phosphate mineral. *Meteoritics Planet. Sci.*, 32, A155–A156. (2) (1998) *Amer. Mineral.*, 83, 185 (abs. ref. 1).