

**Crystal Data:** Isometric. *Point Group:*  $4/m\bar{3}2/m$ . As irregular to flattened crystals, to 20  $\mu\text{m}$ , or in films to  $\sim 0.5$  mm.

**Physical Properties:** *Cleavage:* n.d. *Fracture:* n.d. *Tenacity:* n.d. *Hardness =* n.d.  
D(meas.) = n.d. D(calc.) = 6.033

**Optical Properties:** Opaque. *Color:* Steel-gray. *Streak:* n.d. *Luster:* Metallic.  
*Optical Class:* n.d.

**Cell Data:** *Space Group:*  $Im\bar{3}m$ .  $a = 3.022(3)$   $Z = 2$

**X-ray Powder Pattern:** Colima volcano, State of Colima, Mexico.  
2.141 (100), 1.230 (19), 1.513 (12), 8.809 (11), 0.957 (8)

<b>Chemistry:</b>	(1)
V	87.03
Fe	10.24
Al	2.21
Ti	0.49
Total	99.97

(1) Colima volcano, State of Colima, Mexico; average of 4 electron microprobe analyses; corresponds to  $(V_{0.86}Fe_{0.09}Al_{0.04}Ti_{0.01})_{\Sigma=1.00}$ .

**Occurrence:** In sublimates from high-temperature (550-680° C) volcanic gases at active fumaroles.

**Association:** Colimaite, shcherbinaite.

**Distribution:** From the "Z3 fumarole", Colima volcano, State of Colima, Mexico.

**Name:** The chemical element named for Vanadis, a Scandinavian goddess.

**Type Material:** Geological Museum, National Autonomous University of Mexico, Mexico City, Mexico (FIM 12/01).

**References:** (1) Ostrooumov M. and Y. Taran (2016) Vanadium, V - a new native element mineral from the Colima volcano, State of Colima, Mexico, and implications for fumarole gas composition. *Mineral. Mag.*, 80(2), 371-382. (2) (2016) *Amer. Mineral.*, 101, 2783 (abs. ref. 1).