Hephaistosite $TlPb_2Cl_5$

Crystal Data: Monoclinic. *Point Group*: 2/*m*. Crystals tabular on {010}, to 0.1 mm, displaying {010}, {101}, {100}, {001}, {011}, {110}.

Physical Properties: *Cleavage*: n.d. *Fracture*: n.d. *Tenacity*: n.d. Hardness = n.d. D(meas.) = n.d. D(calc.) = 5.932

Optical Properties: Transparent. *Color*: Pale yellow. *Streak*: n.d. *Luster*: n.d. *Optical Class*: n.d. $n = 2.0(1)$

Cell Data: *Space Group*: $P2_1/c$. $a = 8.9477(6)$ $b = 7.9218(7)$ $c = 12.4955(5)$ $\beta = 90.092(4)°$ Z = 4

X-ray Powder Pattern: La Fossa crater, Vulcano, Aeolian Islands, Italy.
3.696 (100), 3.971 (83), 2.109 (45), 2.569 (42), 1.848 (41), 2.851 (38), 2.236 (25)

Chemistry:

	(1)	(2)
Tl	23.78	25.67
K	0.01	
Pb	51.78	52.06
Cl	21.40	22.27
Br	1.34	
F	0.17	
Total	98.48	100.00

(1) La Fossa crater, Vulcano, Aeolian Islands, Italy; average of 8 EDS electron microprobe analyses, corresponding to $Tl_{0.94}Pb_{2.01}(Cl_{4.85}Br_{0.14}F_{0.07})_{\Sigma=5.06}$. (2) $TlPb_2Cl_5$.

Occurrence: On fragments of altered pyroclastic breccia in a high temperature (400° C) fumarole, most likely formed as a sublimate.

Association: Bismuthinite, cotunnite, challacolloite, pseudocotunnite.

Distribution: La Fossa crater, Vulcano, Aeolian Islands, Italy.

Name: For *Hephaistos*, the Greek god of fire, whose workshops were believed to be located at Vulcano.

Type Material: Reference Collection, Dipartimento di Chimica Strutturale e Stereochimica Inorganica, Università degli Studi, Milan, Italy, 2006-2.

References: (1) Campostrini, I., F. Demartin, C.M. Grammaccioli, and P. Orlandi (2008) Hephaistosite, $TlPb_2Cl_5$, a new thallium mineral species from La Fossa crater, Vulcano, Aeolian Islands, Italy. Can. Mineral., 46, 701–708. (2) (2009) Amer. Mineral., 94, 399-400 (abs. ref. 1).