Seifertite

Crystal Data: Orthorhombic.  Point Group: 2/m 2/m 2/m or mm2.  As lamellae to 0.2 mm.

D(meas.) = n.d.  D(calc.) = 4.294

Optical Class: n.d.

Cell Data: Space Group: Pbcn or Pb2n.  a = 4.097(1)  b = 5.0462(9)  c = 4.4946(8)  Z = 4

X-ray Powder Pattern: Shergotty meteorite. (Quickly amorphizes under electron, laser or ion beams) 2.596 (100), 3.181 (72), 1.938 (64), 1.4199 (44), 1.514 (31), 1.970 (25), 1.288 (19)

Chemistry: Electron-microprobe analyses with a defocused beam showed almost pure SiO₂ with minor concentrations in Na₂O (0.2 to 0.50 wt.%) and Al₂O₃ (0.8 to 1.60 wt.%).

Occurrence: Formed by shock-induced solid-state transformation (> 35 GPa) of either tridymite or cristobalite in basaltic achondrite meteorites, presumably of Martian origin.

Association: Stishovite, silica glass, unnamed monoclinic silica polymorph.

Distribution: In the Martian meteorite Shergotty that fell on August 25, 1865 in Bihar State, India and the Zagami meteorite that fell in Katsina Province, Nigeria on October 3, 1962.

Name: Honors Friedrich A. Seifert (b. 1941), founding Director of the Bayerisches Geoinstitut, Universität Bayreuth, Germany, for his important contributions to high-pressure geoscience.

Type Material: Museum of the Geological Survey in Calcutta, India.