

Crystal Data: Monoclinic. *Point Group:* 2/m. As thin blades or irregular flakes to a few millimeters.

Physical Properties: *Cleavage:* n.d. *Tenacity:* Flexible and malleable. *Fracture:* n.d. Hardness = 1 D(meas.) = 1.240 D(calc.) = 1.242 Synthetic compound is light sensitive and will undergo photodimerization under UV light. Intense bluish white fluorescence in SW and LW UV.

Optical Properties: Transparent to translucent. *Color:* Intense violet or whitish violet to white. *Streak:* White. *Luster:* Vitreous to pearly.

Optical Class: Biaxial. $\alpha = 1.57$ $\beta = \text{n.d.}$ $\gamma = \text{n.d.}$

[Synthetic] $\alpha = 1.56$ $\beta = 1.80$ $\gamma = 2.19$ $2V(\text{meas.}) = 87^\circ$ $2V(\text{calc.}) = 89^\circ$

Cell Data: *Space Group:* $P2_1/a$. $a = 8.5572(9)$ $b = 6.0220(5)$ $c = 11.173(1)$ $\beta = 124.174(1)^\circ$ $Z = 2$

X-Ray Diffraction Pattern: Königin Carola shaft, Paul Bernt mine, near Dresden, Germany. 4.587 (100), 9.252 (98), 3.538 (27), 3.434 (22), 3.050 (20), 4.877 (19), 4.628 (10)

Chemistry:	(1)	(2)
C	94.07	94.34
H	5.571	5.66
Total	99.641	100.00

(1) Königin Carola shaft, Paul Bernt mine, near Dresden, Germany; average CHN, infrared and Raman spectroscopic, high-performance liquid chromatographic, and gas chromatographic with mass spectrometric analyses; corresponds to C_{14.00}H_{9.88}. (2) C₁₄H₁₀.

Occurrence: On mine dumps, formed by pyrolysis of coal during spontaneous combustion in a low oxygen fugacity environment and sublimated from the gas phase.

Association: Sulfur, hoelite.

Distribution: From the dumps of the Königin Carola shaft, Paul Bernt Mine, Freital, near Dresden, Saxony, Germany. At Libušín, near Kladno, Bohemia, Czech Republic.

Name: For *Freital*, the locality near which the studied material was collected.

Type Material: Technical University Bergakademie, Freiberg, Germany (MiSa72396 and MiSa84590).

References: (1) Witzke, T., M. Schreyer, B. Brandes, R. Csuk, and H. Pöllmann (2021) Freitalite, C₁₄H₁₀, a new aromatic hydrocarbon mineral from Freital, Saxony, Germany. *Eur. J. Mineral.*, 33, 1-8. (2) (2021) *Amer. Mineral.*, 106, 2029 (abs. ref. 1).