

Crystal Data: Orthorhombic. *Point Group:* $2/m\ 2/m\ 2/m$. Massive prismatic to fibrous or foliated habit; also as indistinct prismatic crystals.

Physical Properties: *Tenacity:* Very brittle, flexible. Hardness = 2–2.5 VHN = 136–156 (100 g load). D(meas.) = n.d. D(calc.) = [6.73]

Optical Properties: Opaque. *Color:* Steel-gray; white in reflected light. *Luster:* Metallic. *Pleochroism:* Weak. *Anisotropism:* Strong in reflected light, dark gray to red-brown.

R₁–R₂: (400) 43.6–51.5, (420) 43.0–51.0, (440) 42.4–50.5, (460) 41.8–49.3, (480) 41.4–48.4, (500) 40.9–47.8, (520) 40.5–47.4, (540) 40.0–46.6, (560) 39.5–45.9, (580) 38.9–45.1, (600) 38.4–44.4, (620) 38.0–43.9, (640) 37.5–43.3, (660) 37.0–42.8, (680) 36.7–42.5, (700) 36.4–42.2

Cell Data: *Space Group:* $Pnma$. $a = 53.68(9)$ $b = 4.11(1)$ $c = 15.40(2)$ $Z = 4$

X-ray Powder Pattern: Falun, Sweden.

3.847 (100), 3.080 (90), 3.268 (80), 3.019 (70), 2.811 (70), 2.278 (60), 2.138 (60)

Chemistry:

| | (1) | (2) | (3) |
|-------|-------|-------|-------|
| Pb | 29.7 | 31.5 | 28.3 |
| Ag | | 0.9 | 1.0 |
| Cu | | 0.3 | |
| Bi | 46.6 | 46.5 | 48.0 |
| As | 0.8 | | |
| Se | 15.3 | 11.8 | 12.8 |
| S | 9.6 | 10.2 | 10.3 |
| Total | 102.0 | 101.2 | 100.4 |

(1–3) Falun, Sweden; by electron microprobe.

Occurrence: Intimately intergrown with laitakarite and bismuthinite in a “hornblende” rock.

Association: Laitakarite, bismuthinite, gold, chalcopyrite, bismuth, pyrrhotite, quartz.

Distribution: From Falun, Kopparberg, Sweden.

Name: For Mats Weibull (1856–1923), who first described the mineral.

References: (1) Palache, C., H. Berman, and C. Frondel (1944) Dana’s system of mineralogy, (7th edition), v. I, 473–474. (2) Karup-Møller, S. (1970) Weibullite, laitakarite and bismuthinite from Falun, Sweden. *Geol. Fören. Förhandl.* Stockholm, 92, 181–187. (3) (1971) *Amer. Mineral.*, 56, 639 (abs. ref. 2). (4) Johan, Z. and P. Picot (1976) Definition nouvelle de la weibullite et de la wittite. *Compt. Rendus Acad. Sci. Paris*, 282, 137–139. (5) (1977) *Amer. Mineral.*, 62, 397 (abs. ref. 4). (6) Mumme, W.G. (1980) Weibullite Ag_{0.32}Pb_{5.09}Bi_{8.55}Se_{6.08}S_{11.92} from Falun, Sweden: a higher homologue of galenobismutite. *Can. Mineral.*, 18, 1–12. (7) Mumme, W.G. (1980) Seleniferous lead–bismuth sulphosalts from Falun, Sweden: weibullite, wittite, and nordströmite. *Amer. Mineral.*, 65, 789–796.