Dadsonite $Pb_{21}Sb_{23}S_{55}Cl$

Crystal Data: Monoclinic. *Point Group:* $2/m$, m, or 2, or Triclinic. *Point Group:* $\overline{1}$ or 1. As fibrous needles, generally multiple crystals, elongated and striated ‖ [010], to 2 mm;; typically in aggregates resembling "steel wool".

Physical Properties: Hardness = 2.5 VHN = 226–279 (15 g load). D(meas.) = 5.68 D(calc.) = 5.51

Optical Properties: Opaque. *Color:* Lead-gray; in polished section, white with a greenish tint, with blood-red internal reflections in oil. *Streak:* Black. *Luster:* Metallic. *Anisotropism:* Distinct to strong, in greenish gray.
R_1–R_2: (400) 44.0–46.6, (420) 42.3–45.8, (440) 40.8–45.1, (460) 39.6–44.5, (480) 39.2–44.1, (500) 39.1–44.0, (520) 39.1–44.0, (540) 39.1–43.9, (560) 38.9–43.0, (580) 38.4–42.0, (600) 37.9–41.3, (620) 37.3–40.6, (640) 36.8–39.9, (660) 36.2–39.1, (680) 35.7–38.1, (700) 35.3–37.1

Cell Data: *Space Group:* $P2/m$, Pm, or $P2$, with $a = 19.041$ $b = 8.226$ $c = 17.327$ $\beta = 96°18'$ Z = 1, or *Space Group:* $P\overline{1}$ or $P1$, with $a = 17.33$ $b = 4.11$ $c = 19.05$ $\alpha = 90.0°$ $\beta = 96.3°$ $\gamma = 90.4°$ Z = 2

X-ray Powder Pattern: Saint-Pons, France.
2.795 (100), 2.069 (92), 3.393 (74), 3.371 (72), 3.713 (51), 2.843 (47), 3.792 (45)

Chemistry:

	(1)	(2)	(3)	(4)
Pb	48.9	48.8	48.7	48.61
Fe	0.04			
Sb	29.1	30.4	31.3	31.29
As	1.0			
S	19.9	19.5	19.7	19.70
Cl	0.19	0.23	0.4	0.40
Total	99.13	98.93	100.1	100.00

(1) Madoc, Canada; by electron microprobe, corresponds to $Pb_{20.9}(Sb_{21.2}As_{1.2})_{\Sigma=22.4}S_{55.0}Cl_{0.5}$. (2) Wolfsberg, Germany; by electron microprobe, corresponds to $Pb_{21.0}Sb_{22.6}S_{55.0}Cl_{0.6}$. (3) Saint-Pons, France; by electron microprobe; corresponds to $Pb_{21.0}Sb_{23.0}S_{55.0}Cl_{1.0}$. (4) $Pb_{21}Sb_{23}S_{55}Cl$.

Occurrence: In hydrothermal veins with other sulfides and lead sulfosalt minerals.

Association: Jamesonite (Northwest Territories and Ontario, Canada); robinsonite (Pershing Co., Nevada, USA); bournonite, boulangerite, zinkenite, chalcostibite (Saint-Pons, France).

Distribution: In Canada, in the Brock zone of the Giant property, Yellowknife, Northwest Territories [TL]; and from Madoc, Ontario [TL]. In the USA, at the Red Bird mercury mine, Rye Patch district, Pershing Co., Nevada [TL]. In Germany, in the Harz Mountains, from Wolfsberg [TL], St. Andreasberg, and Harzburg. In France, at Saint-Pons, Alpes-de-Haute-Provence.

Name: To honor the Canadian mineralogist, Alexander Stewart Dadson (1906–1958), active in development of the Yellowknife gold deposits.

Type Material: Canadian Geological Survey, Ottawa; Royal Ontario Museum, Toronto, Canada, M30905; National School of Mines, Paris, France; The Natural History Museum, London, England, 1972,11; National Museum of Natural History, Washington, D.C., USA, 123240.

References: (1) Jambor, J.L. (1969) Dadsonite (minerals Q and QM), a new lead sulphantimonide. Mineral. Mag., 37, 437–441. (2) (1970) Amer. Mineral., 55, 1445 (abs. ref. 1). (3) Cervelle, B.D., F.P. Cesbron, and M.-C. Sichére (1979) La chalcostibite et la dadsonite de Saint-Pons, Alpes de Haute Provence, France. Can. Mineral., 17, 601–605 (in French with English abs.). (4) Jambor, J.L., J.H.G. Laflamme, and D.A. Walker (1982) A re-examination of the Madoc sulfosalts. Mineral. Record, 13, 93–100. (5) Makovicky, E. and W.G. Mumme (1984) The crystal structure of izoklakeite, dadsonite and jaskolskiite. Acta Cryst., A40, supplement, C-246.