

**Crystal Data:** Monoclinic, pseudohexagonal. *Point Group:*  $2/m$ ,  $m$ , or  $2$ . As single crystals, to 0.01 mm, epitaxially intergrown with djurleite; in powdery mixtures with djurleite.

**Physical Properties:** *Cleavage:* Poor on {100}. *Hardness* = n.d. *VHN* = 83 (50 g load). *D(meas.)* = n.d. *D(calc.)* = 5.49

**Optical Properties:** Opaque. *Color:* Blue-black; in reflected light, white to off-white with a blue tinge. *Anisotropism:* Very weak.

*R<sub>1</sub>–R<sub>2</sub>:* n.d.

**Cell Data:** *Space Group:*  $C2/m$ ,  $Cm$ , or  $C2$ .  $a = 53.79$   $b = 30.90$   $c = 13.36$   
 $\beta = 90.0^\circ$   $Z = 512$

**X-ray Powder Pattern:** Olympic Dam, Australia.

1.933 (100), 2.375 (90), 1.857 (80), 2.86 (70), 2.630 (50), 1.673 (25), 1.626 (20)

**Chemistry:**

|       | (1)    | (2)    | (3)    |
|-------|--------|--------|--------|
| Cu    | 77.25  | 79.47  | 78.10  |
| Fe    | 0.77   | 0.07   |        |
| S     | 22.19  | 21.94  | 21.90  |
| Total | 100.21 | 101.48 | 100.00 |

(1) Olympic Dam, Australia; by electron microprobe, corresponding to  $(\text{Cu}_{8.80}\text{Fe}_{0.10})_{\Sigma=8.90}\text{S}_{5.00}$ .

(2) Do.; by electron microprobe, corresponding to  $\text{Cu}_{9.15}\text{S}_{5.00}$ . (3)  $\text{Cu}_9\text{S}_5$ .

**Occurrence:** A low-temperature alteration product of djurleite, in a complex polymetallic hydrothermal deposit (Olympic Dam, Australia); in a porphyry copper deposit (El Teniente mine, Chile).

**Association:** Djurleite, bornite, pyrite, chalcopyrite, hematite (Olympic Dam, Australia); djurleite (El Teniente mine, Chile).

**Distribution:** From the Olympic Dam Cu–Au–U deposit, Roxby Downs Station, near Woomera, South Australia [TL]. In the El Teniente mine, 67 km west of Rancagua, O'Higgins Province, Chile.

**Name:** For its occurrence at Roxby Downs, South Australia.

**Type Material:** Museum Victoria, Melbourne, Australia, M37924; The Natural History Museum, London, England, 1988,28.

**References:** (1) Mumme, W.G., G.J. Sparrow, and G.S. Walker (1988) Roxbyite, a new copper sulphide mineral from the Olympic Dam deposit, Roxby Downs, South Australia. *Mineral. Mag.*, 52, 323-330. (2) (1989) *Amer. Mineral.*, 74, 947 (abs. ref. 1).