

Crystal Data: Orthorhombic. *Point Group:* $2/m\ 2/m\ 2/m$. As prismatic or platy crystals, to 5 mm. *Twinning:* Very common; the twin operations are symmetry operations that act on a pseudocubic subcell, producing “neighboring twins” in which individuals are difficult to distinguish.

Physical Properties: *Tenacity:* Sectile. Hardness = ~ 3 VHN = n.d. D(meas.) = n.d. D(calc.) = 5.68

Optical Properties: Opaque. *Color:* Bluish gray. *Streak:* Black. *Luster:* Metallic. R₁–R₂: n.d.

Cell Data: *Space Group:* $Pnma$. $a = 7.89$ $b = 7.84$ $c = 11.01$ $Z = 4$

X-ray Powder Pattern: Ani mine, Japan. Many of the reported associations of digenite and djurleite, identified by powder diffraction, could be anilite and djurleite, as anilite transforms to digenite during grinding.

1.956 (100), 2.77 (65), 3.20 (57), 2.16 (39), 1.677 (35), 2.54 (31), 2.59 (29)

| Chemistry: | (1) | (2) | (3) |
|------------|-------|-------|-------|
| Cu | 79.2 | 80.1 | 77.6 |
| S | 21.7 | 22.7 | 22.4 |
| Total | 100.9 | 102.8 | 100.0 |

(1–2) Ani mine, Japan; by electron microprobe. All specimens contained some djurleite, Cu₃₁S₁₆. (3) Cu₇S₄.

Occurrence: In a drusy quartz vein (Ani mine, Japan); in a Kuroko ore deposit (Matsumine mine, Japan).

Association: Djurleite, covellite (Ani mine, Japan); yarrowite, spionkopite, djurleite, wittichenite, tennantite, chalcopyrite, bornite (Yarrow Creek, Canada); in red beds (Timna Formation, Israel; near Zurich, Switzerland).

Distribution: In Japan, in Akita Prefecture, from the Ani mine [TL], and in the Matsumine mine. At Neudorf, Harz Mountains, Germany. Found northeast of Zurich, Switzerland. From the Lubin and Rudna copper mines, near Legnica, Zechstein copper district, Lower Silesia, Poland. At Bor, Serbia. In the Castletown mine, Lochgilphead, Scotland. From near Nizhni Tagil, Ural Mountains, Russia. In the Timna Formation, southern Israel. In the Estrella mine, Atacama, Chile. From Yarrow Creek, southwestern Alberta, Canada. At Wallaroo, South Australia.

Name: For the Ani mine, Japan.

Type Material: National Science Museum, Tokyo, Japan.

References: (1) Morimoto, N., K. Koto, and Y. Shimazaki (1969) Anilite, Cu₇S₄, a new mineral. *Amer. Mineral.*, 54, 1256–1268. (2) Koto, K. and N. Morimoto (1970) The crystal structure of anilite. *Acta Cryst.*, 26, 915–924.