

**Crystal Data:** Cubic. *Point Group:*  $4/m\bar{3}2/m$ . Typically granular massive, may be platy or scaly, to 1 mm.

**Physical Properties:** *Tenacity:* Malleable. Hardness = 2–3 D(meas.) = 2.707  
D(calc.) = 2.697

**Optical Properties:** Opaque. *Color:* Grayish white. *Luster:* Metallic.  
*Optical Class:* Isotropic.

R: n.d.

**Cell Data:** *Space Group:*  $Fm\bar{3}m$  (synthetic).  $a = 4.0494$   $Z = 4$

**X-ray Powder Pattern:** Synthetic.

2.338 (100), 2.024 (47), 1.221 (24), 1.431 (22), 0.9289 (8), 0.9055 (8), 0.8266 (8)

<b>Chemistry:</b>	(1)	(2)
	Al	99.99 – 100.0
	Total	

(1) Tolbachik volcano, Russia; by electron microprobe. (2) Getang, China; by electron microprobe.

**Occurrence:** In a gabbro-dolerite massif (Billeekh intrusion, Russia); in aluminum-rich rocks; in high-temperature hydrothermal Sn–W deposits and their alteration zones; in volcanic ash.

**Association:** Cu, Zn, Sn, Pb, Cd, Fe, Sb, moissanite (Billeekh intrusive, Russia); magnetite, ilmenite, hematite, pyrite, iron (Tolbachik volcano, Russia); Cu, S, jarosite (Getang, China).

**Distribution:** In Russia, in Siberia, from the Billeekh [TL], Tsepochechnyi, and Ust-Khann'ya intrusives, Vilyui River Basin; in the Nizhefokinskii intrusion, Norilsk district; from the Ukachilkan tin deposit, northeastern Sakha; and at the Tolbachik fissure volcano, Kamchatka Peninsula. In a mud volcano on Bulla Island, Caspian Sea. At Kyzylcheku, Karamazar, Tajikistan. From Getang, Guizhou Province, and in the Lianhuashan tungsten deposit, Guangdong Province, China.

**Name:** Named *aluminum* by Humphry Davy, who discovered the element.

**Type Material:** Geological Museum, Academy of Sciences, Yakutsk, Russia.

**References:** (1) Oleynikov, B.V., A.V. Okrugin, and N.V. Leskova (1978) Petrological significance of the occurrence of native aluminum in mafic rocks. *Doklady Acad. Nauk SSSR*, 243, 191–194 (in Russian). (2) (1980) *Amer. Mineral.*, 65, 205 (abs. ref. 1). (3) Jiang Xinhun, Li Wenkang, Zhang Shuxin, and Meng Fanyi (1985) Discovery of native aluminum in the oxidation zone in Getang, Anlong County, Guizhou Province. *Bull. Chinese Acad. Geol. Sci.*, 11, 79–86 (in Chinese with English abs.). (4) Glavatskikh, S.F. (1990) Native metals and intermetallic compounds in the exhalation products of the Great Tolbachik fissure eruption (Kamchatka). *Doklady Acad. Nauk SSSR*, 313, 433–437 (in Russian). (5) (1953) *NBS Circ.* 539, 1, 11. (6) Pekov, I.V. (1998) Minerals first discovered on the territory of the former Soviet Union. *Ocean Pictures*, Moscow, 25.