

Crystal Data: Cubic. *Point Group:* $\bar{4}3m$. Reniform, botryoidal; massive.

Physical Properties: *Fracture:* Uneven. Hardness = 3–3.5 VHN = 213–235; 124–140 (“domeykite-beta”) (100 g load). *D(meas.)* = 7.2–7.9 *D(calc.)* = 7.92

Optical Properties: Opaque. *Color:* Tin-white to steel-gray, tarnishes pale yellow, then pale brown, and finally to iridescence. *Luster:* Metallic.

R: (400) 41.1, (420) 41.4, (440) 41.7, (460) 43.1, (480) 45.2, (500) 47.5, (520) 49.3, (540) 50.7, (560) 52.2, (580) 53.6, (600) 54.5, (620) 54.9, (640) 54.8, (660) 54.6, (680) 54.4, (700) 54.6

R₁–R₂: (“domeykite-beta”): (400) 37.2–38.5, (420) 37.9–39.5, (440) 38.6–40.9, (460) 40.2–43.1, (480) 42.4–45.5, (500) 44.2–47.3, (520) 45.4–48.6, (540) 45.9–49.4, (560) 45.9–49.6, (580) 45.8–49.7, (600) 45.5–49.5, (620) 45.2–49.2, (640) 44.8–48.9, (660) 44.4–48.4, (680) 44.0–48.0, (700) 43.6–47.6

Cell Data: *Space Group:* $I\bar{4}3d$. *a* = 9.619(1) *Z* = 16

X-ray Powder Pattern: Keweenaw Co., Michigan, USA.

2.05 (100), 1.888 (70), 1.965 (50), 1.308 (50), 3.95 (40), 3.05 (40), 2.15 (40)

Chemistry:

	(1)	(2)	(3)
Cu	70.56	71.16	71.79
As	29.50	28.27	28.21
Sb		0.12	
S		0.06	
Total	100.06	99.61	100.00

(1) Mohawk mine, Michigan, USA. (2) Wasserfall, France; by electron microprobe. (3) Cu₃As.

Occurrence: Of hydrothermal origin.

Association: Copper (typically arsenian), silver, algodonite.

Distribution: In Chile, from the Algodones silver mine, near Coquimbo [TL] and at San Antonio and Chañarcillo, near Copiapó, Atacama. From Corocoro, Bolivia. At Cerro de Paracatas, Tlachapa, Guerrero, Mexico. In the USA, from the Mohawk and Ahmeek mines, Keweenaw Co., and in the Sheldon-Columbia mine, Portage Lake, Houghton Co., Michigan; at the Cashin mine, Montrose Co., Colorado; from Franklin, Sussex Co., New Jersey. In Canada, on Michipicoten Island and at the Silver Islet mine, Thunder Bay, Lake Superior, Ontario; in the East Arm area, Great Slave Lake, Northwest Territories. From Långban and at the Harstigen mine, Värmland, Sweden. From Wasserfall, about 20 km northwest of Belfort, Haute-Saône, and at the Roua copper mines, about 50 km north of Nice, Alpes Maritimes, France. From Zwickau, Saxony, and at Sailauf, northeast of Aschaffenburg, Bavaria, Germany. In the Condurrow mine, near Helstone, Cambourne, and at Wheal Druid, Redruth, Cornwall, England. In the Talmessi mine, 35 km west of Anarak, Iran. Several other occurrences are known.

Name: Honors Professor Ignacio Domeyko [born Ignacy Domejko] (1802–1889), Polish–Chilean mineralogist, University of Chile, Santiago, Chile.

References: (1) Palache, C., H. Berman, and C. Frondel (1944) Dana’s system of mineralogy, (7th edition), v. I, 172. (2) Iglesias, J.E. and W. Nowacki (1977) Refinement of the crystal structure of *alpha* domeykite, a structure related to the A15 type. *Zeits. Krist.*, 145, 334–345. (3) Picot, P. and F. Ruhlmann (1978) Présence d’arséniures de cuivre de haute température dans le granite des Ballons (Vosges méridionales). *Bull. Minéral.*, 101, 563–569 (in French with English abs.). (4) Berry, L.G. and R.M. Thompson (1962) X-ray powder data for the ore minerals. *Geol. Soc. Amer. Mem.* 85, 30. (5) Ramdohr, P. (1969) The ore minerals and their intergrowths, (3rd edition), 393–398. (6) Criddle, A.J. and C.J. Stanley, Eds. (1993) Quantitative data file for ore minerals, 3rd ed. Chapman & Hall, London, 144–145.

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