

**Crystal Data:** Monoclinic. *Point Group:* 2/m. As granular, distorted pyramidal crystals, to 5 μm, with curved and striated faces; in platy aggregates.

**Physical Properties:** Hardness = 2 D(meas.) = 1.85 D(calc.) = n.d. Soluble in H<sub>2</sub>O.

**Optical Properties:** Semitransparent. *Color:* Creamy white, colorless.

*Luster:* Subadamantine.

*Optical Class:* Biaxial (-). α = 1.365 β = 1.530 γ = 1.595 2V(meas.) = 58(1)°

**Cell Data:** *Space Group:* C2/c (synthetic β form). a = 12.675 b = 5.406 c = 9.984  
β = 129.45° Z = 4

**X-ray Powder Pattern:** Mill of Johnston, Scotland.

4.89 (100), 3.179 (70), 2.039 (60), 2.379 (50), 1.861 (50), 3.340 (40), 2.541 (40)

**Chemistry:** (1) Mill of Johnston, Scotland; identity of natural material confirmed by agreement with the X-ray pattern and IR spectrum of the synthetic compound.

**Polymorphism & Series:** Both α and β forms are known.

**Occurrence:** As veinlets in brown coal seams impregnated with natural acetic acid (Chai-Tumus deposit, Russia); formed by reaction between Mg-rich minerals and oxalic acid secreted by incrusting lichen, *Lecanora atra* (Mill of Johnston, Scotland); in desert plants (Lake Huleh basin, Israel).

**Association:** Whewellite, weddellite, calcite, dolomite, stepanovite, zhemchuzhnikovite (Chai-Tumus deposit, Russia); whewellite, chrysotile, quartz (Mill of Johnston, Scotland).

**Distribution:** Likely more common than known localities suggest. From the Chai-Tumus coal deposit, 200 km up from the Lena River estuary, Bulun district, polar Sakha, Russia. In Scotland, near Mill of Johnston, six km west-southwest of Inch, Kincardineshire, and on the Island of Rhum, Inner Hebrides. In the Lake Huleh basin, Jordan Rift Valley, Israel (α form). From Gcwihaba Cave, 280 km west of Maun, northwestern Botswana.

**Name:** To honor Petr Ivanovich Glushinskii (1908–), coal geologist, Institute of Arctic and Antarctic Geology, St. Petersburg, Russia.

**Type Material:** Royal Scottish Museum, Edinburgh, Scotland; The Natural History Museum, London, England.

**References:** (1) Wilson, M.J., D. Jones, and J.D. Russell (1980) Glushinskite; a naturally occurring magnesium oxalate. *Mineral. Mag.*, 43, 837–840. (2) (1981) *Amer. Mineral.*, 66, 439 (abs. ref. 1). (3) Bayliss, P. (1987) Mineral nomenclature: glushinskite. *Mineral. Mag.*, 51, 327–328. (4) Cowgill, U.M. (1989) A naturally occurring alpha magnesium oxalate dihydrate from northern Jordan Valley (Israel). *Mineral. Mag.*, 53, 505–507. (5) Pekov, I.V. (1998) Minerals first discovered on the territory of the former Soviet Union. *Ocean Pictures*, Moscow, 92.