

Crystal Data: Cubic. *Point Group:* $4/m\bar{3}2/m$. Octahedra, to about 0.1 mm, in oldhamite; as dendritic and globular inclusions in corundum.

Physical Properties: Hardness = n.d. VHN = 1372 (20 g load). D(meas.) = n.d. D(calc.) = [5.38]

Optical Properties: Opaque. *Color:* Golden yellow. *Luster:* Metallic.
Optical Class: Isotropic.

R: (440) 20.3, (460) 25.0, (480) 31.6, (500) 38.6, (520) 45.3, (540) 45.3, (560) 55.7, (580) 60.0, (600) 63.5, (620) 66.4, (640) 68.8, (660) 70.8, (680) 72.6, (700) 74.3

Cell Data: *Space Group:* $F4/m\bar{3}2/m$ (synthetic). $a = 4.24173(12)$ $Z = 4$

X-ray Powder Pattern: Synthetic. (ICDD 38-1420).
2.1207 (100), 2.4492 (72), 1.4997 (45), 1.2789 (19), 0.9485 (14), 1.2245 (12), 0.8658 (12)

Chemistry: (1) Bustee meteorite; qualitative presence of Ti determined colorimetrically; confirmation as TiN by behavior similar to synthetic TiN on conversion to TiO₂. (2) "Russia"; by electron microprobe, Ti ~80%, N present, with O and C absent.

Occurrence: Embedded in oldhamite in an achondrite meteorite (Bustee meteorite); as inclusions in corundum, in weathered detritus from a pipelike body containing breccias with an alkalic ultramafic cement ("Russia").

Association: Oldhamite, diopside (Bustee meteorite); corundum, iron, perovskite, iron silicides ("Russia").

Distribution: In the Bustee meteorite. In Russia, from an undefined locality "near the junction of the Azov block with the Donbas".

Name: For George Osborn, who sent to London the meteorite in which the species was found.

Type Material: The Natural History Museum, London, England, 32100.

References: (1) Palache, C., H. Berman, and C. Frondel (1944) Dana's system of mineralogy, (7th edition), v. I, 124. (2) Bannister, F.A. (1941) Osbornite, meteoritic titanium nitride. *Mineral. Mag.*, 36, 36–44. (3) J.L. Wyatt and N.J. Grant (1954) Nitriding of titanium with ammonia. *Trans. Amer. Soc. Metals*, 46, 540–564. (4) Tatarintsev, V.I., S.M. Sandomirskaya, and S.M. Tsymbal (1987) First find of titanium nitride (osbornite) in terrestrial rocks. *Doklady Acad. Nauk SSSR*, 296, 1458–1461 (in Russian).