

**Crystal Data:** Cubic. *Point Group:*  $\bar{4} 3m$ . As blocky grains to 100  $\mu\text{m}$  in feather-like, zig-zag intergrowth with torryweiserite.

**Physical Properties:** *Cleavage:* None. *Tenacity:* Brittle. *Fracture:* n.d. *Hardness* = n.d. *D(meas.)* = n.d. *D(calc.)* = 5.195

**Optical Properties:** Opaque. *Color:* In reflected light, creamy brown compared to coldwellite and bornite, white compared to torryweiserite, and gray compared to chalcopyrite and millerite.

*Streak:* n.d. *Luster:* Metallic.

*Optical Class:* No discernible pleochroism, bireflectance, or anisotropy.

R: (470) 36.2, (546) 39.1, (589) 40.5, (650) 42.3

**Cell Data:** *Space Group:*  $F\bar{4} 3m$ .  $a = 10.066(5)$   $Z = 1$

**X-Ray Diffraction Pattern:** Marathon deposit, Coldwell alkaline complex, Ontario, Canada. 3.06 (100), 1.7921 (74), 1.9518 (39), 1.0312 (30), 2.929 (18), 1.3184 (15), 1.5453 (9)

Chemistry:	(1)	(2)
Rh	10.22	9.61
Ni	36.83	58.46
Fe	16.54	
Co	4.12	
Cu	0.23	
<u>S</u>	<u>32.36</u>	<u>31.93</u>
Total	100.30	100.00

(1) Marathon deposit, Coldwell alkaline complex, Ontario, Canada; average EDS analysis; corresponding to  $(\text{Rh}_2\text{Ni}_{0.67}\text{Fe}_{0.33})_{\Sigma=3.00} (\text{Ni}_{19.30}\text{Fe}_{9.09}\text{Co}_{2.22}\text{Rh}_{1.16}\text{Cu}_{0.12})_{\Sigma=31.89}\text{S}_{32.11}$ . (2) Rh<sub>3</sub>Ni<sub>32</sub>S<sub>32</sub>.

**Occurrence:** In a heavy-mineral concentrate from coarse-grained ophitic olivine gabbro.

**Association:** Vysotskite, Au-Ag alloy, isoferroplatinum, Ge-bearing keithconnite, majakite, coldwellite, cuprorhodsite-ferhodsite, kotulskite, mertieite-II, chalcopyrite, bornite, millerite, Rh-bearing pentlandite.

**Distribution:** From the W Horizon, Marathon Cu-PGE-Au deposit, Coldwell alkaline complex, Ontario, Canada.

**Name:** Honors Dr. Thomas Oberthür (b. 1949), for his work on alluvial platinum-group minerals, notably those found in deposits related to the Great Dyke (Zimbabwe) and the Bushveld complex (Republic of South Africa).

**Type Material:** Canadian Museum of Nature, Gatineau, Quebec, Canada (87251 and 87179).

**References:** (1) McDonald, A.M., I.M. Kjarsgaard, L.J. Cabri, K.C. Ross, D.E. Ames, L. Bindi, and D.J. Good (2021) Oberthürite, Rh<sub>3</sub>(Ni,Fe)<sub>32</sub>S<sub>32</sub> and torryweiserite, Rh<sub>5</sub>Ni<sub>10</sub>S<sub>16</sub>, two new platinum-group minerals from the Marathon deposit, Coldwell Complex, Ontario, Canada: Descriptions, crystal-chemical considerations, and comments on the geochemistry of rhodium. *Can. Mineral.*, 59, 1833-1863.