

Crystal Data: Hexagonal. *Point Group:* $\bar{3} 2/m$. As hexagonal plates, to 1 cm, and small laminated particles.

Physical Properties: *Cleavage:* Perfect on {0001}. *Hardness* = 1–1.5 *VHN* = 46–59 (50 g load). *D*(meas.) = 7.72 *D*(calc.) = 7.73

Optical Properties: Opaque. *Color:* Reddish white, tarnished yellowish brown; in polished section white to faint pink. *Streak:* Dark gray. *Luster:* Metallic. *Pleochroism:* Very weak, cream-white to slightly more pinkish. *Anisotropism:* Moderate to strong.

*R*₁–*R*₂: (400) 51.1–57.3, (420) 52.8–56.5, (440) 54.1–55.7, (460) 55.3–54.8, (480) 56.6–54.4, (500) 58.2–54.6, (520) 59.8–55.4, (540) 61.5–56.8, (560) 63.1–58.4, (580) 64.7–60.0, (600) 66.2–61.7, (620) 67.6–63.0, (640) 68.6–64.0, (660) 69.4–64.8, (680) 69.9–65.1, (700) 70.5–65.6

Cell Data: *Space Group:* $P\bar{3}m1$. *a* = 3.843 *c* = 5.265 *Z* = 1

X-ray Powder Pattern: Robb-Montbray mine, Canada.

2.82 (100), 1.549 (60), 2.06 (50), 1.918 (50), 2.64 (30), 1.590 (20), 1.227 (20)

Chemistry:	(1)	(2)	(3)		(1)	(2)	(3)
Ni	18.31	11.3	18.70	Ag	0.86		
Pd		7.4		Bi		14.4	
Pt		3.7		Te	80.75	65.2	81.30
				Total	99.92	102.0	100.00

(1) Stanislaus mine, California, USA; corresponding to (Ni_{0.99}Ag_{0.02})_{Σ=1.01}Te_{2.00}. (2) Strathcona mine, Canada; by electron microprobe, corresponding to (Ni_{0.66}Pd_{0.24}Pt_{0.07})_{Σ=0.97}(Te_{1.76}Bi_{0.24})_{Σ=2.00}. (3) NiTe₂.

Polymorphism & Series: Forms a series with merenskyite.

Mineral Group: Melonite group.

Occurrence: With other tellurium minerals in the late stages of hydrothermal veins formed at medium to low temperatures. Also in high-temperature Ni–Cu–PGE magmatic sulfide deposits.

Association: Altaite, petzite, hessite, calaverite, coloradoite, krennerite, tellurobismuthite, montbrayite, gold, pyrite, chalcopyrite, pentlandite, pyrrhotite.

Distribution: In the USA, in California, from the Melones [TL] and Stanislaus mines, Carson Hill district, Calaveras Co., and the Jamestown mine, Tuolumne Co.; in Colorado, at the Cresson mine, Cripple Creek, Teller Co., and from a number of mines in the Magnolia district, Boulder Co.; in Arizona, from the Campbell mine, Bisbee, Cochise Co. In Ontario, Canada, from the Strathcona mine at Sudbury; in the Hemlo gold deposit, Thunder Bay district; and at the Wright-Hargreaves mine, Kirkland Lake; in Quebec, from the Robb-Montbray mine, Montbray Township. At Kalgoorlie and Kambalda, 56 km south of Kalgoorlie, Western Australia, and the Worturpa mine, Flinders Ranges, South Australia. From the Emperor mine, Vatukoula, Viti Levu, Fiji Islands. In South Africa, at Ookiep, Namaqualand. In the Omai gold deposit, Guiana. From Russia, in the Monchegorsk deposit, Kola Peninsula. At the Zhanatyube deposit, Kazakhstan. In the Yokozuru mine, north Kyushu, Japan. Many additional minor occurrences are known.

Name: For the Melones mine in California, USA, where it was discovered.

References: (1) Palache, C., H. Berman, and C. Frondel (1944) Dana's system of mineralogy, (7th edition), v. I, 341. (2) Peacock, M.A. and R.M. Thompson (1945) Melonite from Quebec and the crystal structure of NiTe₂. Univ. of Toronto Studies, Geol. Ser., 50, 63–73. (3) Rucklidge, All rights reserved. No part of this publication may be reproduced, stored in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photocopying, recording, or otherwise without the prior written permission of Mineral Data Publishing.

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