

Owyheeite

Ag₃Pb₁₀Sb₁₁S₂₈

©2001-2005 Mineral Data Publishing, version 1

Crystal Data: Orthorhombic. *Point Group:* $2/m\ 2/m\ 2/m$. Massive to coarsely fibrous, acicular, striated longitudinally || [001]; rarely as minute felted hairlike crystals.

Physical Properties: *Cleavage:* {001}. *Tenacity:* Very brittle. *Hardness* = 2.5
VHN = 92–121 (110 g load). *D*(meas.) = 6.22–6.51 *D*(calc.) = 6.43

Optical Properties: Opaque. *Color:* Pale silvery gray, tarnishes blue or yellow; pale gray in reflected light. *Streak:* Reddish brown. *Luster:* Metallic. *Pleochroism:* Distinct. *Anisotropism:* Strong, yellowish white and gray.
*R*₁–*R*₂: (400) 41.0–45.2, (420) 40.5–45.2, (440) 39.8–45.2, (460) 39.6–45.2, (480) 39.2–45.4, (500) 38.9–45.3, (520) 38.6–45.1, (540) 38.3–44.7, (560) 38.0–44.2, (580) 37.7–43.7, (600) 37.4–43.1, (620) 37.1–42.5, (640) 36.6–41.8, (660) 36.2–41.1, (680) 35.4–40.1, (700) 34.8–39.3

Cell Data: *Space Group:* *Pnam*. *a* = 22.82 *b* = 27.20 *c* = 8.19 *Z* = 8

X-ray Powder Pattern: Poorman mine, Idaho, USA.
3.25 (100), 3.49 (70), 2.84 (60), 2.05 (60), 2.90 (50), 2.23 (50), 3.37 (40)

Chemistry:	(1)	(2)	(3)	(4)
Pb	40.77	43.86	46.9	44.72
Ag	7.40	6.14	6.5	6.99
Cu	0.75	1.55		
Fe	0.46	0.05		
Sb	30.61	29.26	28.7	28.91
S	20.81	19.06	18.4	19.38
Total	100.80	99.92	100.5	100.00

(1) Poorman mine, Idaho, USA; corresponds to Ag_{2.96}(Pb_{8.49}Cu_{0.61}Fe_{0.36})_{Σ=9.46}Sb_{10.85}S_{28.00}.
(2) Sheba mine, Nevada, USA; average of two analyses, corresponds to Ag_{2.68}(Pb_{9.97}Cu_{1.15}Fe_{0.04})_{Σ=11.16}Sb_{11.32}S_{28.00}. (3) Freiberg, Saxony, Germany; by electron microprobe, corresponding to Ag_{2.94}Pb_{11.04}Sb_{11.50}S_{28.00}. (4) Ag₃Pb₁₀Sb₁₁S₂₈.

Occurrence: In veins of hydrothermal origin.

Association: Galena, sphalerite, pyrite, arsenopyrite, chalcopyrite, tetrahedrite, pyrrargyrite, diaphorite, miargyrite, jamesonite, boulangerite, ramdohrite, andorite, meneghinite.

Distribution: In the USA, in Idaho, from the Poorman mine, Silver City district, Owyhee Co., Idaho [TL] and at the Banner mine, Boise Co.; from the Sheba mine, Star City, and at Rochester and in the Kaiser Tunnel, Morey district, Nye Co., Nevada; from the Domingo and Garfield mines, Gunnison Co., Colorado; at the McAlpine mine, Tuolumne Co., California. From the Alma property and Rambler mine, Slovan mining division, British Columbia; and the Tintina silver mines, Yukon Territory, Canada. From Yecora, five km west of Iglesia, Sonora, Mexico. At Marmato, Colombia. From the Wongabah mine, Drake and Rivertree mining fields, New South Wales, and at the Meerschaum mine, near Omeo, Victoria, Australia. From the Rajpura Dariba polymetallic deposit, Rajasthan, India. At the Zlata Bana deposit, Slanske vrchy Mountains, Slovakia. From Kutná Hora, Czech Republic. At Bourneix, Haute-Vienne, France. From Roc-Blanc, Morocco. In the Srednegolgotaiskoe gold deposit, eastern Transbaikalia, Siberia, Russia. Known from a few other localities.

Name: For the locality in Owyhee Co., Idaho, USA.

Type Material: National Museum of Natural History, Washington, D.C., USA, 94054.

References: (1) Palache, C., H. Berman, and C. Frondel (1944) Dana's system of mineralogy, (7th edition), v. I, 423. (2) Robinson, S.C. (1949) Owyheeite. *Amer. Mineral.*, 34, 398–402. (3) Moëlo, Y., N. Mozgova, P. Picot, N. Bortnikov, and Z. Vrubleskaia (1984) Cristallochimie de l'owyheeite: nouvelles données. *Tschermaks Mineral. Petrog. Mitt.*, 32, 271–284 (in French with English abs.). (4) Criddle, A.J. and C.J. Stanley, Eds. (1993) Quantitative data file for ore minerals, 3rd ed. Chapman & Hall, London, 404.

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.