Heyrovskýite

\( \text{Pb}_4\text{AgBi}_3\text{S}_9 \)

Crystal Data: Orthorhombic. \textit{Point Group}: \(2/m \ 2/m \ 2/m \) or \( mm2 \). As prismatic to acicular crystals, elongate \([001]\) and flattened \(\{010\}\), striated on \(\{010\}\) parallel to \([001]\), to 2 cm.

Physical Properties: \textit{Cleavage}: Poor on \(\{hk0\}\). \textit{Fracture}: Conchoidal. \textit{Tenacity}: Brittle. Hardness = n.d. VHN = 166–234 (50 g load), strongly anisotropic. D(meas.) = 7.17 D(calc.) = 7.18


R\(_1\)-R\(_2\): (470) 43.3–47.3, (546) 40.6–44.6, (589) 39.8–43.9, (650) 39.6–43.7

Cell Data: \textit{Space Group}: \(Cbmm\). \(a = 13.600(3) \ b = 30.485(12) \ c = 4.110(1) \ Z = 4 \)

X-ray Powder Pattern: Húrky, Czech Republic.

3.435 (100), 2.962 (80), 2.098 (35), 1.790 (22), 3.343 (20), 3.006 (15), 2.067 (15)

Chemistry: \( (1) \) (2) (3) \( (1) \) (2) (3)

\begin{align*}
\text{Pb} & : 53.65 & 41.24 & 54.50 & \text{Bi} & : 28.35 & 35.52 & 27.48 \\
\text{Ag} & : 2.5 & 6.73 & 2.84 & \text{Sb} & : 0.04 \\
\text{Cu} & : 0.05 & \text{Se} & : 0.03 \\
\text{Cd} & : 0.07 & \text{S} & : 14.4 & 15.96 & 15.18 \\
\hline
\text{Total} & 98.95 & 99.97 & 100.00
\end{align*}

(1) Húrky, Czech Republic; by electron microprobe, corresponding to \( \text{Pb}_{5.19}\text{Ag}_{0.46}\text{Cu}_{0.02} \text{Bi}_{1.72}\text{S}_{9.00} \). (2) La Roche-Balue quarry, France; by electron microprobe, average of five analyses; corresponding to \( \text{Pb}_{3.60}\text{Cd}_{0.04}\text{Ag}_{1.13}\text{Cd}_{0.04}\text{Bi}_{3.32}\text{Sb}_{0.01}\text{S}_{9.00} \). (3) \( \text{Pb}_4\text{AgBi}_3\text{S}_9 \).

Occurrence: In high-temperature quartz veins.

Association: Pyrite, sphalerite, galena, molybdenite, cosalite, bismuth, galenobismutite, chalcopyrite, covellite, bursaite, arsenopyrite, siderite, quartz, albite, microcline.

Distribution: In the Czech Republic, near Húrky, about 65 km west of Prague [TL]. From the Tornado mine, Baia Bora district, and at Ocna de Fier (Morávica; Vaskó), Romania. In the Furka Pass, Uri, and at Goppenstein, Lotschentnal, Valais, Switzerland. From Rauriser Goldberg, Salzburg, Austria. In the La Roche-Balue quarry, west of Nantes, Loire Atlantique, France. At the Clara mine, near Oberwolbach, Black Forest, Germany. In Italy, on Vulcano, in the Lipari Islands. From the Corrie Buie deposit, south Loch Tayside, Scotland. In the Balikesir Balya deposit, Balikesir Province, Turkey. From the Spokoinoe deposit, eastern Transbaikal, and at the Shumilovsk Sn–W deposit, western Transbaikal, Russia. From 27 km west of Castlegar, British Columbia, Canada. In the USA, from Darwin, Inyo Co., California; at the Reward prospects, Ravenswood district, Lander Co., Nevada; in the Idrado mine, Ouray Co., and the Alaska mine, Poughkeepisie Gulch, near Ouray, San Juan Co., Colorado. At the Yakuki mine, Fukushima Prefecture, Japan. From the Juno mine, Tennant Creek, Northern Territory, Australia.

Name: In honor of Jaroslav Heyrovský (1890–1967), Czech Nobel Laureate in chemistry.

Type Material: Charles University, Prague, Czech Republic, 14265.


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.