

Evansite**Al₃(PO₄)(OH)₆•6H₂O(?)**

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Crystal Data: Amorphous. *Point Group:* n.d. Commonly as reniform or botryoidal coatings; spherulitic or stalactitic, to 0.6 m, may show a concentric structure.

Physical Properties: *Fracture:* Conchoidal. *Tenacity:* Very brittle. Hardness = 3–4
D(meas.) = 2.0(2) D(calc.) = n.d. May fluoresce bright green under SW and LW UV, probably due to minor uranium content.

Optical Properties: Transparent to translucent. *Color:* Colorless to milky white, may be tinted blue, green, or yellow; reddish brown to brown with included iron oxides; colorless to brown in transmitted light. *Streak:* White or slightly tinted. *Luster:* Vitreous to resinous or waxy. *Optical Class:* Isotropic; may show birefringence up to 0.02. $n = 1.445\text{--}1.485$

Cell Data: *Space Group:* n.d. $Z = \text{n.d.}$

X-ray Powder Pattern: Amorphous to X-rays.

Chemistry:	(1)	(2)	(3)
P ₂ O ₅	19.05	18.11	18.38
Al ₂ O ₃	39.31	40.19	39.62
H ₂ O	39.95	41.27	42.00
insol.	1.41		
Total	99.72	99.57	100.00

(1) Mt. Železník, Czech Republic. (2) Zeehan district, Tasmania, Australia.

(3) Al₃(PO₄)(OH)₆•6H₂O.

Occurrence: In a graphite deposit (Gross-Tresny, Czech Republic); in graphitic gneiss (Vatoinandry district, Madagascar); in coal seams (Alabama, USA); a coating in caves, the phosphate derived from guano.

Association: Variscite, allophane, “limonite”.

Distribution: In Slovakia, from Železník (Vashegy). At Gross-Tresny; Litošice; and Nižná-Slaná, Czech Republic. In Romania, from Alsô-Sajô; Roșia Montană (Verespatak); and Baia-de-Arieș (Offenbánya). From Epernay, Marne, France. In Spain, at Campo Lameiro; Teis, near Vigo; and several other places in Pontevedra Province; from santa Cruz de Olarde, Barcelona Province. At Richelle, near Visé, Belgium. In England, from Yoredale Rocks, near Macclesfield, Cheshire. In the Vatoinandry district, Madagascar. From the Berlin and other caves, Transvaal, South Africa. In the Zeehan and Dundas districts, Tasmania, Australia. In the USA, at Columbiana and Coalville, Shelby Co., Alabama; in the Wilson Springs (Potash Sulphur Springs) mine, Garland Co., Arkansas; and from Goldburg, Custer Co., Idaho. At Cueva de Cunday, Colombia, in a cave. From the Cueva de Urtany and Cueva de Aguapiras Caves, Venezuela.

Name: In honor of Brooke Evans (1797–1862), English mining geologist, Birmingham, England, who provided the first specimens.

Type Material: Narodni Museum, Prague, Czech Republic, 1935-26572; Harvard University, Cambridge, Massachusetts, USA, 110880.

References: (1) Palache, C., H. Berman, and C. Frondel (1951) Dana's system of mineralogy, (7th edition), v. II, 923–924. (2) García-Guinea, J., A.M. Chagoyen, and E.H. Nickel (1995) A re-investigation of bolivarite and evansite. *Can. Mineral.*, 33, 59–65. (3) Hill, C. and P. Forti (1997) Cave minerals of the world (2nd edition), National Speleological Soc., Huntsville, Alabama, esp. 168.

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