Polkovicite \( (\text{Fe, Pb})_3(\text{Ge, Fe})_{1-x} \text{S}_4 \) (\( x = 0.18 \) to 0.69)

Crystal Data: Cubic. \( \text{Point Group: n.d.} \) Massive with other sulfides.

Physical Properties: Hardness = n.d. \( \text{VHN} = 119-124 \) (50 g load). \( \text{D(meas.)} = \text{n.d.} \) \( \text{D(calc.)} = \text{n.d.} \)

Optical Properties: Opaque. \text{Color:} Brownish gray; in reflected light, white with cream-red tint. \text{Streak:} Dark gray. \text{Anisotropism:} Distinct.
\( R_1-R_2: (470) 43.5-44.5, (535) 43.0-44.0, (591) 44.0-45.0, (658) 45.5-46.5 \)

Cell Data: \text{Space Group: n.d.} \( Z = \text{n.d.} \)

X-ray Powder Pattern: n.d.

Chemistry:

\begin{array}{ll}
\text{Fe} & 29.3 \\
\text{Pb} & 14.6 \\
\text{Cu} & 3.6 \\
\text{Ge} & 4.5 \\
\text{As} & 1.8 \\
\text{S} & 34.2 \\
\hline
\text{Total} & 88.0
\end{array}

\( (1) \) Lower Silesia, Poland; by electron microprobe.

Polymorphism & Series: Forms a series with morozeviczite.

Occurrence: In epigenetic veinlets and metasomatic replacement zones replacing sandstone and older sulfides, in brecciated sandstones underlying copper-bearing shales.

Association: Marcasite, chalcopyrite, bornite, chalcoite, tennantite, sphalerite, galena.

Distribution: From the Polkovic mine, Lower Silesia, Poland.

Name: For the Polkovic mine, Poland.

Type Material: Jagellonian University, Kraków, Poland.