Petříčekite  
CuSe$_2$

**Crystal Data:** Orthorhombic.  
**Point Group:** $2/m$ $2/m$ $2/m$.  
As inclusions, to 150 $\mu$m; as skeletal and/or myrmekitic aggregates to 200 $\mu$m.

**Physical Properties:**  
**Cleavage:** None.  
**Fracture:** Uneven.  
**Tenacity:** Brittle.  
Hardness = 2-2.5  
VHN = 24-40, 33 average (15 g load).  
$D$(meas.) = n.d.  
$D$(calc.) = 6.673

**Optical Properties:** Opaque.  
**Color:** Black; pale blue-gray to pale pinkish in reflected light.  
**Streak:** Black.  
**Luster:** Metallic.  
**Optical Class:** n.d.  
**Pleochroism:** Weak to stronger near endmember composition, pale blue-gray to pale pinkish.  
**Anisotropism:** Increases significantly near endmember composition from light gray-blue and light pink tints to copper-red and light gray tints.  

**Cell Data:** Space Group: $Pnma$.  
$a = 4.918(2)$  
b = 6.001(2)  
c = 3.670(1)  
$Z = 2$

**X-ray Powder Pattern:** Předbořice uranium deposit, Central Bohemia Region, Czech Republic.  
2.639 (100), 2.563 (85), 2.938 (70), 1.935 (70), 1.834 (30), 1.760 (25), 1.492 (25)

**Chemistry:**

<table>
<thead>
<tr>
<th>Element</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ag</td>
<td>0.22</td>
<td>0.04</td>
<td></td>
<td>Co</td>
<td>0.03</td>
<td></td>
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<tr>
<td>Cu</td>
<td>15.39</td>
<td>28.42</td>
<td>28.69</td>
<td>Ni</td>
<td>0.08</td>
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<tr>
<td>Hg</td>
<td>0.01</td>
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<td>Pd</td>
<td>0.11</td>
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<tr>
<td>Pb</td>
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<td></td>
<td></td>
<td>S</td>
<td>0.09</td>
<td>0.03</td>
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<tr>
<td>Fe</td>
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<td></td>
<td>Se</td>
<td>71.61</td>
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<td>Total</td>
<td>99.64</td>
<td>100.12</td>
<td>100.00</td>
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</tr>
</tbody>
</table>

(1) Předbořice, Czech Republic; average of 9 electron microprobe analyses; corresponds to (Cu$_{0.55}$Fe$_{0.45}$)$_{0.00}$ (Se$_{1.98}$S$_{0.01}$)$_{0.00}$ = 1.99.  
(2) El Dragón, Bolivia; average of 5 electron microprobe analyses; corresponds to (Cu$_{0.58}$Fe$_{0.38}$Pd$_{0.03}$Ag$_{0.01}$Ni$_{0.01}$)$_{0.00}$ (Se$_{1.99}$S$_{0.01}$)$_{0.00}$ = 2.00.  
(3) CuSe$_2$.

**Mineral Group:** Marcasite group.

**Occurrence:** In low-temperature hydrothermal veins cutting metamorphic rocks near the contact with a granitoid pluton (Czech Republic); a late-stage mineral in hydrothermal veinlets cutting black shale and siltstone (Bolivia); in calcitic veinlets in porphyry (Argentina).

**Association:** Eucairite, athabascaite/klockmannite, tiemannite, eskebornite, unknown selenides (Czech Republic); krut’aite, klockmannite, watkinsonite, native selenium (Bolivia); clausthalite, krut’aite, molybdemenite, native selenium (Argentina).

**Distribution:** At the Předbořice uranium deposit, Central Bohemia Region, Czech Republic; at the El Dragón mine, Potosí, Bolivia and at Sierra de Cacheuta, Luján de Cuyo Department, Mendoza, Argentina.

**Name:** Honors Václav Petříček (b. 1948), Czech crystallographer, Institute of Physics of the Czech Academy of Sciences, Prague, for his contributions to crystallography.

**Type Material:** Mineralogical and Geological Museum, Harvard University, Cambridge, Massachusetts, USA (MGMH 2016.01).

**References:**  
Petříčekite, CuSe$_2$, a new member of the marcasite group from the Předbořice Deposit, Central Bohemia Region, Czech Republic. Minerals, 6(2), 33.  