Alacránite

Crystal Data: Monoclinic.  Point Group: 2/m.  Crystals are pinacoidal, prismatic, and flattened on {100}, striated  || [001] on {100}, to 1 mm; as subhedral flattened prismatic grains.

Physical Properties: Cleavage: Imperfect on {100}.  Fracture: Conchoidal.  Tenacity: Very brittle.  Hardness = 1.5  VHN = 69 (20 g load).  D(meas.) = 3.43 D(calc.) = 3.503


Optical Class: Biaxial (+).  α = 2.39(1)  β = n.d.  γ = 2.52(2)  2V = n.d.

Crystal Data: Space Group: P2/c.  a = 9.943(1)  b = 9.366(1)  c = 8.908(1)  β = 102.007°  Z = 2

X-ray Powder Pattern: Uzon caldera, Russia.
3.064 (100), 5.91 (90), 2.950 (90), 5.11 (80), 4.05 (70), 3.291 (50), 6.89 (40)

Chemistry:

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
<th>(4)</th>
</tr>
</thead>
<tbody>
<tr>
<td>As</td>
<td>67.35</td>
<td>67.80</td>
<td>70.03</td>
<td>67.52</td>
</tr>
<tr>
<td>S</td>
<td>32.61</td>
<td>32.20</td>
<td>29.97</td>
<td>32.48</td>
</tr>
<tr>
<td>Total</td>
<td>99.96</td>
<td>100.00</td>
<td>100.00</td>
<td>100.00</td>
</tr>
</tbody>
</table>

(1) Uzon caldera, Russia; average of 4 electron microprobe analyses; corresponding to As$_{8.88}$S$_{9.00}$.
(2) Kateřina mine, Czech Republic; average of 3 electron microprobe analyses; corresponds to As$_{8.00}$S$_{8.88}$.  (3) AsS.  (4) As$_8$S$_9$.

Polymorphism & Series: Trimorphous with pararealgar and realgar. Forms a series with non-stoichiometric As$_x$S$_{9-x}$ phases.

Occurrence: In hydrothermal As-S veins (Alacrán mine, Chile); in the condensation zone of a hydrothermal Hg-Sb-As system as cement in a sandy gravel (Uzon caldera, Russia); formed at low temperatures in a polymetallic hydrothermal deposit on a submarine seamount (Conical Seamount, Papua New Guinea); as sublimates on a burning mine dump (Kateřina mine, Czech Republic).

Association: Realgar, orpiment, smithite, arsenic, sulfur, stibnite, pyrite, greigite, arsenopyrite, arsenolamprite, sphalerite, acanthite, barite, quartz, calcite (Alacrán mine, Chile); realgar, orpiment, uzonite, stibnite, cinnabar, pyrite, sulfur (Uzon caldera, Russia); realgar, pyrite, sphalerite, galena, chalcopryrite, amorphous silica (Conical Seamount, Papua New Guinea); orpiment, sulfur, amorphous As-S alloy, realgar, pararealgar, anhydrite (Kateřina mine, Czech Republic).

Distribution: From the Alacrán mine, Pampa Larga district, Copiapó, Chile. In the Uzon caldera, Kamchatka, Russia. At Tiefengraben, Reinerzau, Black Forest, Germany. On Conical Seamount, ten km south-southeast of Lihir Island, Papua New Guinea. From the Nishinomaki mine, Gunma Prefecture, Japan. On the burning dumps of the Kateřina mine, Radvanice, Czech Republic.

Name: For the occurrence in the Alacrán deposit, Chile.

Type Material: Il’menskii Preserve Museum, Miass (catalog number U-2); A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia.


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