Chatkalite

Crystal Data:  
Tetragonal.  
Point Group:  $\bar{4}m2$.  
As rounded grains, to 100 $\mu$m, which may be included in tetrahedrite.

Physical Properties:  
Hardness = n.d.  
VHN = 258–287 (20 g load).  
D(meas.) = n.d.  
D(calc.) = 5.00

Optical Properties:  
Opaque.  
Color: Pale rose in reflected light.  
Anisotropism: Weak, in shades of brown.

Cell Data:  
Space Group:  $P\bar{4}m2$.  
a = 7.61(1)  
c = 5.373(5)  
Z = 1

X-ray Powder Pattern:  
Kochbulak deposit, Uzbekistan.
1.904 (100), 3.11 (80), 1.625 (40), 1.568 (40), 2.87 (30), 1.058 (30), 2.70 (20)

Chemistry:

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cu</td>
<td>41.17</td>
<td>40.95</td>
</tr>
<tr>
<td>Ag</td>
<td>0.41</td>
<td></td>
</tr>
<tr>
<td>Fe</td>
<td>4.31</td>
<td>6.00</td>
</tr>
<tr>
<td>Zn</td>
<td>2.10</td>
<td></td>
</tr>
<tr>
<td>Sn</td>
<td>19.11</td>
<td>25.50</td>
</tr>
<tr>
<td>Mo</td>
<td>1.08</td>
<td></td>
</tr>
<tr>
<td>Sb</td>
<td>2.97</td>
<td></td>
</tr>
<tr>
<td>As</td>
<td>0.80</td>
<td></td>
</tr>
<tr>
<td>S</td>
<td>28.77</td>
<td>27.55</td>
</tr>
<tr>
<td>Total</td>
<td>[100.72]</td>
<td>100.00</td>
</tr>
</tbody>
</table>

(1) Kochbulak deposit, Uzbekistan; by electron microprobe, total originally given as 100.22%; corresponding to $(\text{Cu}_{5.97}\text{Ag}_{0.03})\Sigma=6.00(\text{Fe}_{0.65}\text{Zn}_{0.30}\text{Cu}_{0.05})\Sigma=1.06(\text{Sn}_{1.34}\text{As}_{0.27}\text{As}_{0.26}\text{Fe}_{0.07})\Sigma=1.99\text{S}_{7.95}$.  
(2) $\text{Cu}_6\text{FeSn}_2\text{S}_8$.

Occurrence:  
As rounded disseminations in tetrahedrite, from a sulfide-bearing quartz vein (Kochbulak deposit, Uzbekistan).

Association:  
Cassiterite, hemusite, hessite, tetrahedrite (Kochbulak deposit, Uzbekistan); pyrite, sphalerite, marcasite, galena, chalcopyrite, stannite, tetrahedrite–tennantite, canfieldite, arsenopyrite, digenite, covellite, chalcocite, Au–Ag alloy (Cove deposit, USA).

Distribution:  
From the Kochbulak gold deposit, Chatkal-Kuramin Mountains, eastern Uzbekistan [TL]. In the Cove gold deposit, McCoy district, Lander Co., Nevada, USA. At the Bitin Cu–Au–Ag deposit, Fujian Province, China.

Name:  
For the occurrence in the Chatkal-Kuramin Mountains, Russia.

Type Material:  
A.E. Fersman Mineralogical Museum, Academy of Sciences, Moscow, Russia, 81595.

References:  

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.