Xilingolite  Pb$_3$Bi$_2$S$_6$

Crystal Data: Monoclinic.  
Point Group: 2/m, 2, or m.  
As prismatic crystals, elongated and striated on {010}, to 8 mm.  
Twining: On {001}.

Physical Properties:  
Hardness = n.d.  
VHN = 103 average (5 to 200 g load).  
D(meas.) = 7.08  D(calc.) = 7.07

Optical Properties:  
Opaque.  
Color: Lead-gray; in reflected light, white with a faint blue tint.  
Streak: Gray.  
Luster: Metallic.  
Pleochroism: Distinct, white to white with blue tint.  
Anisotropism: Distinct, dark gray to gray.  

Cell Data:  
Space Group: C2/m, C2, or Cm.  
a = 13.65  
b = 4.078  
c = 20.68

X-ray Powder Pattern:  
Chaobuleng district, China.  
3.386 (100), 2.177 (90), 2.073 (80), 2.051 (70), 1.955 (70), 1.788 (6), 1.396 (5)

Chemistry:  

<table>
<thead>
<tr>
<th>Element</th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pb</td>
<td>52.074</td>
<td>52.06</td>
<td>50.45</td>
</tr>
<tr>
<td>Zn</td>
<td>0.653</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cu</td>
<td>0.16</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ag</td>
<td>0.75</td>
<td>0.50</td>
<td></td>
</tr>
<tr>
<td>Bi</td>
<td>29.72</td>
<td>29.81</td>
<td>33.93</td>
</tr>
<tr>
<td>Sb</td>
<td>0.09</td>
<td></td>
<td></td>
</tr>
<tr>
<td>S</td>
<td>15.09</td>
<td>15.25</td>
<td>15.62</td>
</tr>
<tr>
<td>oxides</td>
<td>1.333</td>
<td>1.62</td>
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</tr>
<tr>
<td>Total</td>
<td>99.87</td>
<td>99.24</td>
<td>100.00</td>
</tr>
</tbody>
</table>

(1) Chaobuleng district, China; ignoring minor components and oxides, corresponds to Pb$_{3.18}$Bi$_{1.81}$S$_{6.00}$.  
(2) Do.; by electron microprobe.  
(3) Pb$_3$Bi$_2$S$_6$.

Occurrence:  
In a skarn-type iron deposit.

Association:  
Magnetite, sphalerite, pyrrhotite, pyrite, arsenopyrite, chalcopyrite, digenite, bornite, molybdenite, galena, bismuth, bismuthinite.

Distribution:  
In the Chaobuleng district, Xilingola League, Inner Mongolia, China.

Name:  
For the Xilingola locality in China.

Type Material:  
n.d.

References:  
(1) Hong Huidi, Wang Xiangwen, Shi Nicheng, and Peng Zhizhong (1982) 
Xilingolite, a new sulfide of lead and bismuth, Pb$_{3+x}$Bi$_{2-2/3x}$S$_{6}$.  
Acta Petrologica Mineralogica et Analytica, 1, 14–18 (in Chinese with English abs.).  