Brownleeite

Crystal Data: Cubic.  Point Group: 23.  As submicrometer grains.


Cell Data: Space Group: P2₁3.  a = 4.557  Z = 4

X-ray Powder Pattern: Calculated pattern.  
2.0384 (100), 1.8608 (50), 1.2182 (24), 3.2230 (18), 2.6316 (16), 0.8464 (15), 0.9946 (12)

Chemistry:

<table>
<thead>
<tr>
<th>Element</th>
<th>wt %</th>
</tr>
</thead>
<tbody>
<tr>
<td>Si</td>
<td>48.5</td>
</tr>
<tr>
<td>Cr</td>
<td>3.2</td>
</tr>
<tr>
<td>Mn</td>
<td>38.4</td>
</tr>
<tr>
<td>Fe</td>
<td>9.9</td>
</tr>
<tr>
<td>Total</td>
<td>100.0</td>
</tr>
</tbody>
</table>

(1) IDP L2055I3; average quantitative EDX spectral analysis; corresponding to (Mn₀.₇₇Fe₀.₁₈Cr₀.₀₅)Si.

Polymorphism & Series: Solid solution series with FeSi.

Mineral Group: Fersilicite group.

Occurrence: Within an interplanetary dust particle, (IDP), that likely originated from a comet; likely formed as high-temperature condensates either in the early Solar System or in the outflow of an evolved star or supernova explosion.

Association: Mn-bearing forsterite, enstatite, FeNi sulfides, glass with embedded metal and sulfide grains.

Distribution: In IDP L2055I3 from the Comet 26P/Grigg-Skjellerup dust stream.

Name: Honors Donald E. Brownlee (b. 1943), an American astronomer and a founder of the field of cosmic dust research who is the principal investigator of the NASA Stardust Mission that collected dust samples from Comet 81P/Wild-2 and returned them to Earth.

Type Material: n.d.