Sinoite  
\( \text{Si}_2\text{N}_2\text{O} \)

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Crystal Data: Orthorhombic. Point Group: \( \text{mm2} \). Rarely in lathlike crystals, to 200 \( \mu \text{m} \), and in granular aggregates.

Physical Properties: Hardness = n.d. \( \text{D(meas.)} = 2.80-2.85 \) \( \text{D(calc.)} = 2.84 \) Bright greenish yellow cathodoluminescence.

Optical Class: Biaxial (−) (probable). Orientation: \( Z = c \). \( \alpha = 1.740 \) \( \beta = \text{n.d.} \), close to \( \gamma \). \( \gamma = 1.855 \) \( 2V(\text{meas.}) = \text{n.d.} \).

Cell Data: Space Group: \( \text{Cmc}_{21} \) (synthetic). \( a = 8.843(5) \) \( b = 5.473(5) \) \( c = 4.835(5) \) \( Z = 4 \).

X-ray Powder Pattern: Synthetic.  
4.43 (10), 3.36 (10), 4.66 (8), 2.61 (5), 2.42 (5), 2.39 (4), 4.13 (3)

Chemistry:

<table>
<thead>
<tr>
<th></th>
<th>(1)</th>
<th>(2)</th>
<th>(3)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Si</td>
<td>56.6</td>
<td>56.7</td>
<td>56.07</td>
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<tr>
<td>N</td>
<td>31.5</td>
<td>31.7</td>
<td>27.96</td>
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<tr>
<td>O</td>
<td>13.1</td>
<td>13.0</td>
<td>15.97</td>
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<tr>
<td>Total</td>
<td>101.2</td>
<td>101.4</td>
<td>100.00</td>
</tr>
</tbody>
</table>

(1) Jajh deh Kot Lalu meteorite; by electron microprobe, average of several hundred determinations; corresponds to \( \text{Si}_{2.06}\text{N}_{2.23}\text{O}_{0.81} \).  
(2) Hvittis meteorite; by electron microprobe.  
(3) \( \text{Si}_2\text{N}_2\text{O} \).

Occurrence: A rare mineral embedded in enstatite in chondritic meteorites.

Association: Enstatite, nickel-iron, plagioclase, troilite, pigeonite, daubreelite, oldhamite, ferroan alabandite, graphite, tridymite (Jajh deh Kot Lalu meteorite).

Distribution: In the Jajh deh Kot Lalu, Hvittis, Ufana, Yilmia, and Pillistfer enstatite chondrite meteorites.

Name: For Silicon, Nitrogen, and Oxygen in the composition.

Type Material: American Museum of Natural History, New York, New York, USA, 3954.

References:  
(2) (1965) Amer. Mineral., 50, 521 (abs. ref. 1).  