**Dickite**

\[ \text{Al}_2\text{Si}_2\text{O}_5(\text{OH})_4 \]

(C)2001 Mineral Data Publishing, version 1.2

**Crystal Data:** Monoclinic.  **Point Group:** \( m \).  As pseudohexagonal crystals, to 2 mm, which may be elongated along [100].  As aggregates of platelets resembling books; commonly as compact masses of microscopic crystals.

**Physical Properties:**  **Cleavage:** Perfect on \{001\}.  **Tenacity:** Flexible but inelastic.  **Hardness** = 2–2.5  \( D(\text{meas.}) = 2.60 \quad D(\text{calc.}) = 2.62 \)

**Optical Properties:**  **Transparent.**  **Color:** White, but will assume coloration from included impurities.  **Luster:** Satiny.  **Optical Class:** Biaxial (+).  **Orientation:** X \( \wedge c = 8^\circ-14^\circ; \ Y \wedge a = 14^\circ-20^\circ. \)  **Dispersion:** \( r > v \).  \( m = 1.560-1.566 \quad \beta = 1.561-1.566 \quad \gamma = 1.566-1.570 \quad 2V(\text{meas.}) = 50^\circ-80^\circ \)

**Cell Data:**  **Space Group:** Cc.  \( a = 5.150(1) \quad b = 8.940(1) \quad c = 14.424(2) \quad \beta = 96^\circ44(1)' \)  \( Z = 4 \)

**X-ray Powder Pattern:** Schuylkill, Pennsylvania, USA. (ICDD 10-446).  7.15 (100), 3.580 (100), 2.326 (90), 4.124 (70), 3.799 (60), 2.510 (50), 1.975 (50)

**Chemistry:**

<table>
<thead>
<tr>
<th>( \text{SiO}_2 )</th>
<th>46.86</th>
<th>46.14</th>
<th>MgO</th>
<th>0.09</th>
</tr>
</thead>
<tbody>
<tr>
<td>TiO(_2)</td>
<td>0.51</td>
<td></td>
<td>CaO</td>
<td>0.22</td>
</tr>
<tr>
<td>Al(_2)O(_3)</td>
<td>37.12</td>
<td>39.61</td>
<td>Na(_2)O</td>
<td>0.07</td>
</tr>
<tr>
<td>Fe(_2)O(_3)</td>
<td>1.43</td>
<td></td>
<td>K(_2)O</td>
<td>0.60</td>
</tr>
<tr>
<td>FeO</td>
<td>0.06</td>
<td></td>
<td>H(_2)O</td>
<td>13.06</td>
</tr>
</tbody>
</table>

Total 100.02 99.66

(1) Anglesey, Wales.  (2) Pine Knot colliery, Pennsylvania, USA; corresponds to \( \text{Al}_2\text{Si}_{1.99}\text{O}_5(\text{OH})_{4.00} \).

**Polymorphism & Series:** Halloysite, kaolinite, and nacrite are polymorphs.

**Mineral Group:** Kaolinite-serpentine group.

**Occurrence:** Commonly of hydrothermal origin along veins derived in part from the alteration of aluminosilicate minerals; also as an authigenic sedimentary mineral.

**Association:** Quartz, “chalcedony.”

**Distribution:** Widespread; some localities for studied materials follow: at Amlwch and the Pant-y-Gaseg quarry, Trwynbychan, Anglesey, Wales. From Mád, Hungary. In the Iza Cave, Mt. Rodna, Romania. From Mas D’Alary, Lodève, Héralue, France. At Postmasburg and Barkly East, Cape Province, and in the Middelburg district, Transvaal, South Africa. In the USA, on Red Mountain, near Ouray, San Juan Co., Colorado; in the Mineral Mountain area, near St. George, Washington Co., Utah; the Pine Knot colliery, Schuylkill, Schuylkill Co., Pennsylvania; and on Bruin Creek, Elliott Co., Kentucky. At San Juanito and Cusihiuríachi, Chihuahua, Mexico.

**Name:** For Allan Brugh Dick (1833–1926), Scottish metallurgical chemist, who first described the species.

**Type Material:** n.d.


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.