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| LaRu ₃ Si ₂ | <i>hP</i> 12 | (176) <i>P</i> 6 ₃ / <i>m</i> – hfb |
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LaRu₃Si₂ [1]

Structural features: Kagomé-mesh Ru₃ layers and LaSi₂ layers alternate along [001]. Infinite columns of base-linked SiRu₆ trigonal prisms share edges to form a 3D-framework. Slightly distorted derivative of PrNi₂Al₃.

Vandenberg J.M., Barz H. (1980) [1]

LaRu₃Si₂

$a = 0.5676$, $c = 0.712$ nm, $c/a = 1.254$, $V = 0.1987$ nm³, $Z = 2$

| site | Wyck. | sym. | <i>x</i> | <i>y</i> | <i>z</i> | occ. | atomic environment |
|------|------------|-------------|-----------------------------|-----------------------------|-----------------------------|------|--|
| Ru1 | 6 <i>h</i> | <i>m</i> .. | 0.01 | 0.49 | ¹ / ₄ | | 14-vertex Frank-Kasper Si ₄ Ru ₆ La ₄ |
| Si2 | 4 <i>f</i> | 3.. | ¹ / ₃ | ² / ₃ | 0.0 | | trigonal prism Ru ₆ |
| La3 | 2 <i>b</i> | -3.. | 0 | 0 | 0 | | pseudo Frank-Kasper Si ₆ Ru ₁₂ La ₂ |

Experimental: powder, film, X-rays

References: [1] Vandenberg J.M., Barz H. (1980), Mater. Res. Bull. 15, 1493-1498.