$LaRhC_2$ Structure: A2BC_tP16_76_2a_a_a-001

This structure previously used the label(s) `A2BC_tP16_76_2a_a_a`. Calls to these addresses will be redirected here.

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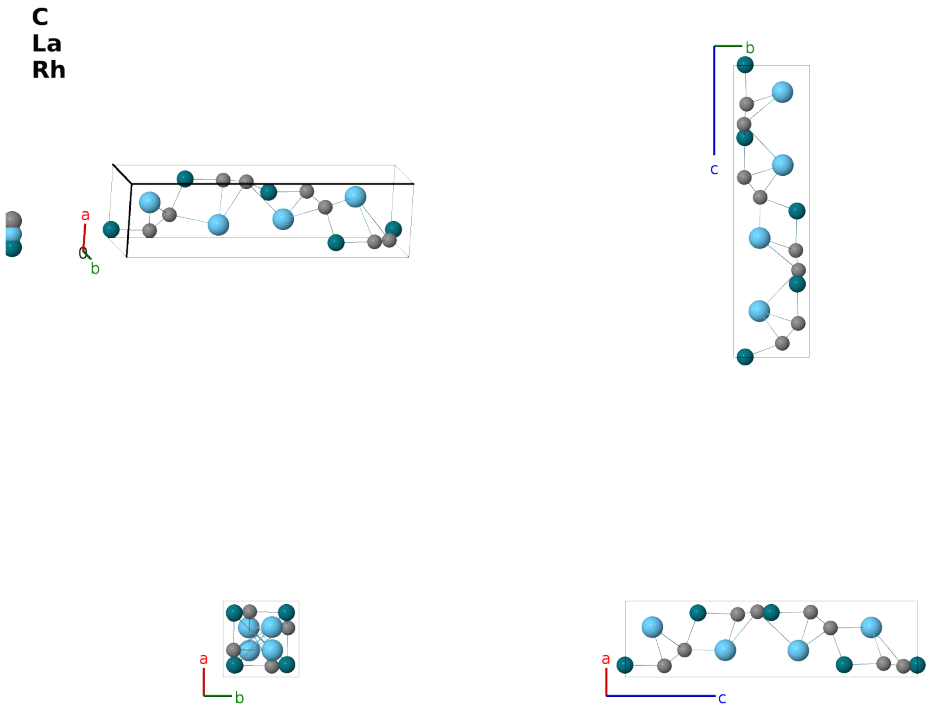
https://aflow.org/prototype-encyclopedia/5CQR

https://aflow.org/prototype-encyclopedia/A2BC_tP16_76_2a_a_a-001



Prototype	C_2LaRh
AFLOW prototype label	A2BC_tP16_76_2a_a_a-001
ICSD	100986
CCDC	1626217
Pearson symbol	tP16
Space group number	76
Space group symbol	$P4_1$

AFLOW prototype command `aflow --proto=A2BC_tP16_76_2a_a_a-001 --params=`$a, c/a, x_1, y_1, z_1, x_2, y_2, z_2, x_3, y_3, z_3, x_4, y_4, z_4$

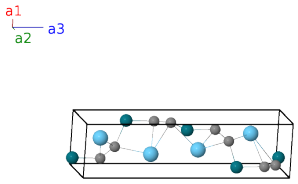
Other compounds with this structure

$CeRhC_2$

- This structure may also be found in the enantiomorphic space group $P4_3$ #78.

Simple Tetragonal primitive vectors

$$\mathbf{a_1} = a\,\hat{\mathbf{x}}$$
$$\mathbf{a_2} = a\,\hat{\mathbf{y}}$$
$$\mathbf{a_3} = c\,\hat{\mathbf{z}}$$



Basis vectors

		Lattice coordinates		Cartesian coordinates	Wyckoff position	Atom type
$\mathbf{B_1}$	=	$x_1\,\mathbf{a}_1 + y_1\,\mathbf{a}_2 + z_1\,\mathbf{a}_3$	=	$ax_1\,\hat{\mathbf{x}} + ay_1\,\hat{\mathbf{y}} + cz_1\,\hat{\mathbf{z}}$	(4a)	C I
$\mathbf{B_2}$	=	$-x_1\,\mathbf{a}_1 - y_1\,\mathbf{a}_2 + \left(z_1 + \frac{1}{2}\right)\,\mathbf{a}_3$	=	$-ax_1\,\hat{\mathbf{x}} - ay_1\,\hat{\mathbf{y}} + c\left(z_1 + \frac{1}{2}\right)\,\hat{\mathbf{z}}$	(4a)	C I
$\mathbf{B_3}$	=	$-y_1\,\mathbf{a}_1 + x_1\,\mathbf{a}_2 + \left(z_1 + \frac{1}{4}\right)\,\mathbf{a}_3$	=	$-ay_1\,\hat{\mathbf{x}} + ax_1\,\hat{\mathbf{y}} + c\left(z_1 + \frac{1}{4}\right)\,\hat{\mathbf{z}}$	(4a)	C I
$\mathbf{B_4}$	=	$y_1\,\mathbf{a}_1 - x_1\,\mathbf{a}_2 + \left(z_1 + \frac{3}{4}\right)\,\mathbf{a}_3$	=	$ay_1\,\hat{\mathbf{x}} - ax_1\,\hat{\mathbf{y}} + c\left(z_1 + \frac{3}{4}\right)\,\hat{\mathbf{z}}$	(4a)	C I
$\mathbf{B_5}$	=	$x_2\,\mathbf{a}_1 + y_2\,\mathbf{a}_2 + z_2\,\mathbf{a}_3$	=	$ax_2\,\hat{\mathbf{x}} + ay_2\,\hat{\mathbf{y}} + cz_2\,\hat{\mathbf{z}}$	(4a)	C II
$\mathbf{B_6}$	=	$-x_2\,\mathbf{a}_1 - y_2\,\mathbf{a}_2 + \left(z_2 + \frac{1}{2}\right)\,\mathbf{a}_3$	=	$-ax_2\,\hat{\mathbf{x}} - ay_2\,\hat{\mathbf{y}} + c\left(z_2 + \frac{1}{2}\right)\,\hat{\mathbf{z}}$	(4a)	C II
$\mathbf{B_7}$	=	$-y_2\,\mathbf{a}_1 + x_2\,\mathbf{a}_2 + \left(z_2 + \frac{1}{4}\right)\,\mathbf{a}_3$	=	$-ay_2\,\hat{\mathbf{x}} + ax_2\,\hat{\mathbf{y}} + c\left(z_2 + \frac{1}{4}\right)\,\hat{\mathbf{z}}$	(4a)	C II
$\mathbf{B_8}$	=	$y_2\,\mathbf{a}_1 - x_2\,\mathbf{a}_2 + \left(z_2 + \frac{3}{4}\right)\,\mathbf{a}_3$	=	$ay_2\,\hat{\mathbf{x}} - ax_2\,\hat{\mathbf{y}} + c\left(z_2 + \frac{3}{4}\right)\,\hat{\mathbf{z}}$	(4a)	C II
$\mathbf{B_9}$	=	$x_3\,\mathbf{a}_1 + y_3\,\mathbf{a}_2 + z_3\,\mathbf{a}_3$	=	$ax_3\,\hat{\mathbf{x}} + ay_3\,\hat{\mathbf{y}} + cz_3\,\hat{\mathbf{z}}$	(4a)	La I
$\mathbf{B_{10}}$	=	$-x_3\,\mathbf{a}_1 - y_3\,\mathbf{a}_2 + \left(z_3 + \frac{1}{2}\right)\,\mathbf{a}_3$	=	$-ax_3\,\hat{\mathbf{x}} - ay_3\,\hat{\mathbf{y}} + c\left(z_3 + \frac{1}{2}\right)\,\hat{\mathbf{z}}$	(4a)	La I
$\mathbf{B_{11}}$	=	$-y_3\,\mathbf{a}_1 + x_3\,\mathbf{a}_2 + \left(z_3 + \frac{1}{4}\right)\,\mathbf{a}_3$	=	$-ay_3\,\hat{\mathbf{x}} + ax_3\,\hat{\mathbf{y}} + c\left(z_3 + \frac{1}{4}\right)\,\hat{\mathbf{z}}$	(4a)	La I
$\mathbf{B_{12}}$	=	$y_3\,\mathbf{a}_1 - x_3\,\mathbf{a}_2 + \left(z_3 + \frac{3}{4}\right)\,\mathbf{a}_3$	=	$ay_3\,\hat{\mathbf{x}} - ax_3\,\hat{\mathbf{y}} + c\left(z_3 + \frac{3}{4}\right)\,\hat{\mathbf{z}}$	(4a)	La I
$\mathbf{B_{13}}$	=	$x_4\,\mathbf{a}_1 + y_4\,\mathbf{a}_2 + z_4\,\mathbf{a}_3$	=	$ax_4\,\hat{\mathbf{x}} + ay_4\,\hat{\mathbf{y}} + cz_4\,\hat{\mathbf{z}}$	(4a)	Rh I
$\mathbf{B_{14}}$	=	$-x_4\,\mathbf{a}_1 - y_4\,\mathbf{a}_2 + \left(z_4 + \frac{1}{2}\right)\,\mathbf{a}_3$	=	$-ax_4\,\hat{\mathbf{x}} - ay_4\,\hat{\mathbf{y}} + c\left(z_4 + \frac{1}{2}\right)\,\hat{\mathbf{z}}$	(4a)	Rh I
$\mathbf{B_{15}}$	=	$-y_4\,\mathbf{a}_1 + x_4\,\mathbf{a}_2 + \left(z_4 + \frac{1}{4}\right)\,\mathbf{a}_3$	=	$-ay_4\,\hat{\mathbf{x}} + ax_4\,\hat{\mathbf{y}} + c\left(z_4 + \frac{1}{4}\right)\,\hat{\mathbf{z}}$	(4a)	Rh I
$\mathbf{B_{16}}$	=	$y_4\,\mathbf{a}_1 - x_4\,\mathbf{a}_2 + \left(z_4 + \frac{3}{4}\right)\,\mathbf{a}_3$	=	$ay_4\,\hat{\mathbf{x}} - ax_4\,\hat{\mathbf{y}} + c\left(z_4 + \frac{3}{4}\right)\,\hat{\mathbf{z}}$	(4a)	Rh I

References

[1] A. O. Tsokol', O. I. Bodak, E. P. Marusin, and V. E. Zavodnik, *X-ray diffraction studies of ternary $RRhC_2$ (R = La, Ce, Pr, Nd, Sm) compounds*, Sov. Phys. Crystallogr. **33**, 202–203 (1988). Translated from Kristallografiya.

Found in

[1] P. Villars, *$LaRhC_2$ Crystal Structure* (2016). PAULING FILE in: Inorganic Solid Phases, SpringerMaterials (online database), Springer, Heidelberg (ed.) SpringerMaterials.

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