

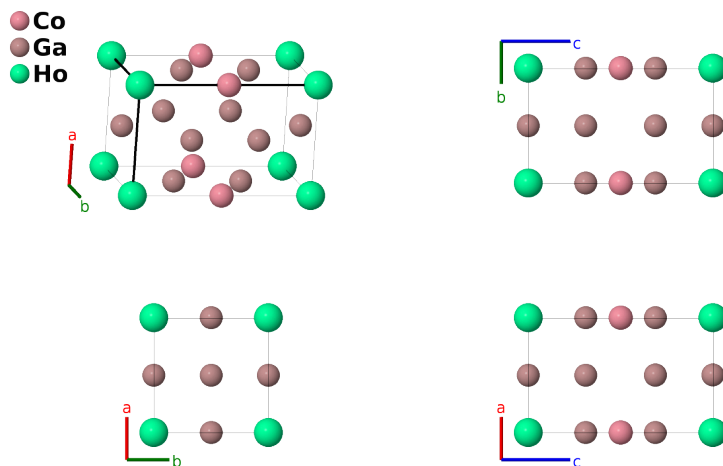
HoCoGa₅ Structure: AB5C_tP7_123_b_ci_a-001

This structure originally had the label AB5C_tP7_123_b_ci_a. Calls to that address will be redirected here.

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<https://aflow.org/p/SBCX>

https://aflow.org/p/AB5C_tP7_123_b_ci_a-001



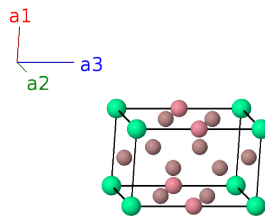
Prototype	CoGa ₅ Ho
AFLOW prototype label	AB5C_tP7_123_b_ci_a-001
ICSD	42427
Pearson symbol	tP7
Space group number	123
Space group symbol	<i>P4/mmm</i>
AFLOW prototype command	aflow --proto=AB5C_tP7_123_b_ci_a-001 --params=a, c/a, z ₄

Other compounds with this structure

CeRhIn₅, CeCoIn₅, DyCoGa₅, ErCoGa₅, GdCoGa₅, LuCoGa₅, TbCoGa₅, TmCoGa₅, UCoGa₅, YCoGa₅, CoIrIn₅, CoRhIn₅, LaCoIn₅, LaIrIn₅, LaRhIn₅, PrCoIn₅, PrIrIn₅, PrRhIn₅

Simple Tetragonal primitive vectors

$$\begin{aligned} \mathbf{a}_1 &= a \hat{x} \\ \mathbf{a}_2 &= a \hat{y} \\ \mathbf{a}_3 &= c \hat{z} \end{aligned}$$



Basis vectors

	Lattice coordinates		Cartesian coordinates	Wyckoff position	Atom type
\mathbf{B}_1	$=$	0	$=$	0	(1a) Ho I
\mathbf{B}_2	$=$	$\frac{1}{2} \mathbf{a}_3$	$=$	$\frac{1}{2} c \hat{\mathbf{z}}$	(1b) Co I
\mathbf{B}_3	$=$	$\frac{1}{2} \mathbf{a}_1 + \frac{1}{2} \mathbf{a}_2$	$=$	$\frac{1}{2} a \hat{\mathbf{x}} + \frac{1}{2} a \hat{\mathbf{y}}$	(1c) Ga I
\mathbf{B}_4	$=$	$\frac{1}{2} \mathbf{a}_2 + z_4 \mathbf{a}_3$	$=$	$\frac{1}{2} a \hat{\mathbf{y}} + cz_4 \hat{\mathbf{z}}$	(4i) Ga II
\mathbf{B}_5	$=$	$\frac{1}{2} \mathbf{a}_1 + z_4 \mathbf{a}_3$	$=$	$\frac{1}{2} a \hat{\mathbf{x}} + cz_4 \hat{\mathbf{z}}$	(4i) Ga II
\mathbf{B}_6	$=$	$\frac{1}{2} \mathbf{a}_2 - z_4 \mathbf{a}_3$	$=$	$\frac{1}{2} a \hat{\mathbf{y}} - cz_4 \hat{\mathbf{z}}$	(4i) Ga II
\mathbf{B}_7	$=$	$\frac{1}{2} \mathbf{a}_1 - z_4 \mathbf{a}_3$	$=$	$\frac{1}{2} a \hat{\mathbf{x}} - cz_4 \hat{\mathbf{z}}$	(4i) Ga II

References

- [1] Y. Grin, Y. Yarmolyuk, and E. I. Gladyshevskii, *Kristallicheskie struktury soedinenij R_2CoGa_8 ($R=Sm, Gd, Tb, Dy, Ho, Er, Tm, Lu, Y$) and $RCoGa_5$ ($R=Gd, Tb, Dy, Ho, Er, Tm, Lu, Y$)*, *Kristallografiya* **24**, 242–246 (1979).

Found in

- [1] P. Villars, *HoCoGa5 Crystal Structure* (2016). PAULING FILE in: Inorganic Solid Phases, SpringerMaterials (online database).