

β -Ga Structure (*Obsolete*): A_mC4_15_e-001

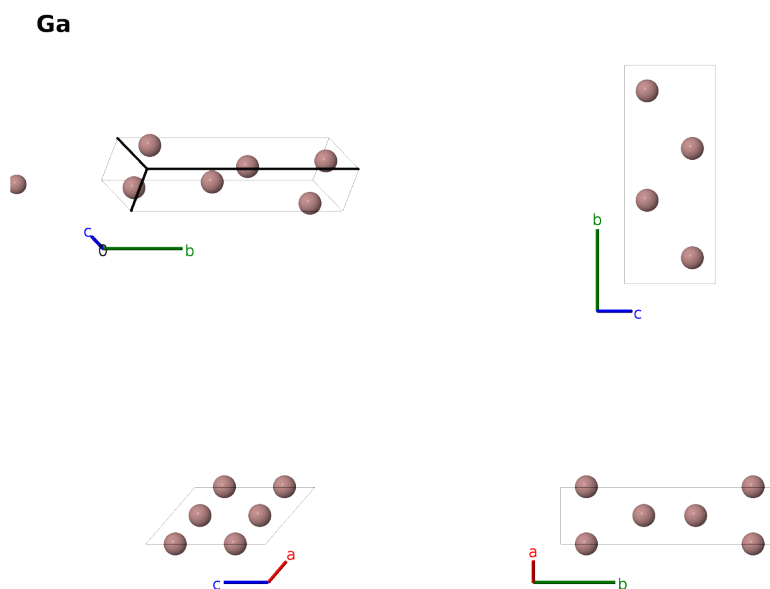
This structure previously used the label(s) **A_mC4_15_e**. Calls to these addresses will be redirected here.

Cite this page as:

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<https://aflow.org/prototype-encyclopedia/BRYB>

https://aflow.org/prototype-encyclopedia/A_mC4_15_e-001



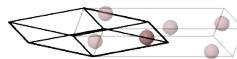
Prototype	Ga
AFLOW prototype label	A_mC4_15_e-001
ICSD	23247
CCDC	1599379
Pearson symbol	mC4
Space group number	15
Space group symbol	$C2/c$
AFLOW prototype command	<pre>aflow --proto=A_mC4_15_e-001 --params=a, b/a, c/a, β, y_1</pre>

- This was proposed as a metastable structure of gallium, visible for short times at atmospheric pressure. The true structure is isostructural with indium (*A6*), and stabilized under pressure.

Base-centered Monoclinic primitive vectors

$\mathbf{a}_1$ $\mathbf{a}_2$ $\mathbf{a}_3$

$$\begin{aligned}\mathbf{a}_1 &= \frac{1}{2}a \hat{\mathbf{x}} - \frac{1}{2}b \hat{\mathbf{y}} \\ \mathbf{a}_2 &= \frac{1}{2}a \hat{\mathbf{x}} + \frac{1}{2}b \hat{\mathbf{y}} \\ \mathbf{a}_3 &= c \cos \beta \hat{\mathbf{x}} + c \sin \beta \hat{\mathbf{z}}\end{aligned}$$



Basis vectors

	Lattice coordinates		Cartesian coordinates	Wyckoff position	Atom type
$\mathbf{B}_1$	$= -y_1 \mathbf{a}_1 + y_1 \mathbf{a}_2 + \frac{1}{4} \mathbf{a}_3$	$=$	$\frac{1}{4}c \cos \beta \hat{\mathbf{x}} + by_1 \hat{\mathbf{y}} + \frac{1}{4}c \sin \beta \hat{\mathbf{z}}$	(4e)	Ga I
$\mathbf{B}_2$	$= y_1 \mathbf{a}_1 - y_1 \mathbf{a}_2 + \frac{3}{4} \mathbf{a}_3$	$=$	$\frac{3}{4}c \cos \beta \hat{\mathbf{x}} - by_1 \hat{\mathbf{y}} + \frac{3}{4}c \sin \beta \hat{\mathbf{z}}$	(4e)	Ga I

References

- [1] L. Bosio and A. Defrain, *Structure cristalline du gallium β* , Acta Crystallogr. Sect. B **25**, 995 (1969), doi:10.1107/S0567740869003360.

Found in

- [1] J. Donohue, *The Structures of the Elements* (Robert E. Krieger Publishing Company, New York, 1974).

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