

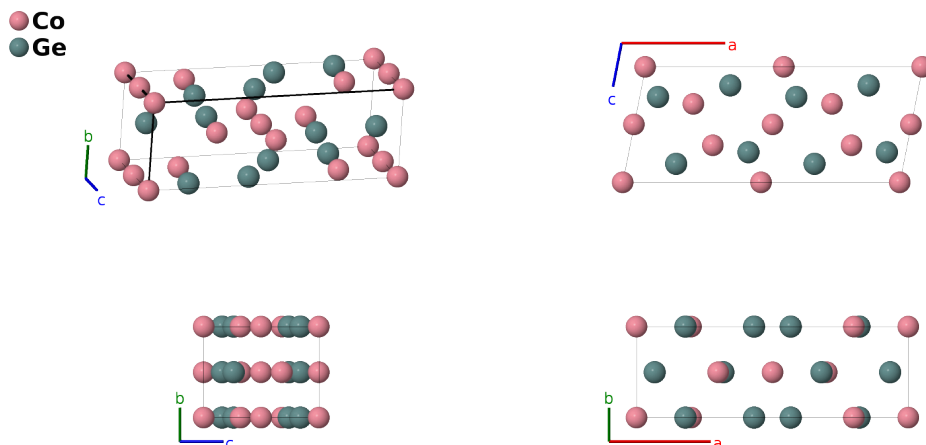
CoGe Structure:

AB_mC16_12_aci_2i-001

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<https://aflow.org/p/7BKV>

https://aflow.org/p/AB_mC16_12_aci_2i-001



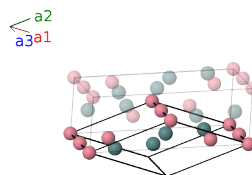
Prototype	CoGe
AFLOW prototype label	AB_mC16_12_aci_2i-001
ICSD	43677
Pearson symbol	mC16
Space group number	12
Space group symbol	$C2/m$
AFLOW prototype command	aflow --proto=AB_mC16_12_aci_2i-001 --params=a, b/a, c/a, β , x_3 , z_3 , x_4 , z_4 , x_5 , z_5

Other compounds with this structure

FeGe (HT)

Base-centered Monoclinic primitive vectors

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



Basis vectors

	Lattice coordinates	=	Cartesian coordinates	Wyckoff position	Atom type
\mathbf{B}_1	=	0	=	0	(2a) Co I
\mathbf{B}_2	=	$\frac{1}{2} \mathbf{a}_3$	=	$\frac{1}{2}c \cos \beta \hat{\mathbf{x}} + \frac{1}{2}c \sin \beta \hat{\mathbf{z}}$	(2c) Co II
\mathbf{B}_3	=	$x_3 \mathbf{a}_1 + x_3 \mathbf{a}_2 + z_3 \mathbf{a}_3$	=	$(ax_3 + cz_3 \cos \beta) \hat{\mathbf{x}} + cz_3 \sin \beta \hat{\mathbf{z}}$	(4i) Co III
\mathbf{B}_4	=	$-x_3 \mathbf{a}_1 - x_3 \mathbf{a}_2 - z_3 \mathbf{a}_3$	=	$-(ax_3 + cz_3 \cos \beta) \hat{\mathbf{x}} - cz_3 \sin \beta \hat{\mathbf{z}}$	(4i) Co III
\mathbf{B}_5	=	$x_4 \mathbf{a}_1 + x_4 \mathbf{a}_2 + z_4 \mathbf{a}_3$	=	$(ax_4 + cz_4 \cos \beta) \hat{\mathbf{x}} + cz_4 \sin \beta \hat{\mathbf{z}}$	(4i) Ge I
\mathbf{B}_6	=	$-x_4 \mathbf{a}_1 - x_4 \mathbf{a}_2 - z_4 \mathbf{a}_3$	=	$-(ax_4 + cz_4 \cos \beta) \hat{\mathbf{x}} - cz_4 \sin \beta \hat{\mathbf{z}}$	(4i) Ge I
\mathbf{B}_7	=	$x_5 \mathbf{a}_1 + x_5 \mathbf{a}_2 + z_5 \mathbf{a}_3$	=	$(ax_5 + cz_5 \cos \beta) \hat{\mathbf{x}} + cz_5 \sin \beta \hat{\mathbf{z}}$	(4i) Ge II
\mathbf{B}_8	=	$-x_5 \mathbf{a}_1 - x_5 \mathbf{a}_2 - z_5 \mathbf{a}_3$	=	$-(ax_5 + cz_5 \cos \beta) \hat{\mathbf{x}} - cz_5 \sin \beta \hat{\mathbf{z}}$	(4i) Ge II

References

- [1] S. Bhan and K. Schubert, *Zum Aufbau der Systeme Kobalt-Germanium, Rhodium-Silizium sowie einiger verwandter Legierungen*, Z. Metallkd. **51**, 327–339 (1960), doi:10.1515/ijmr-1960-510604.