

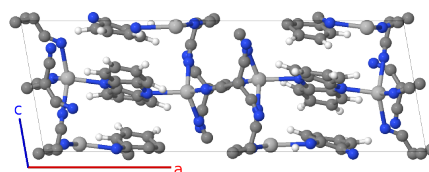
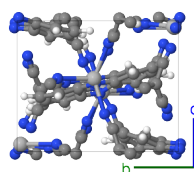
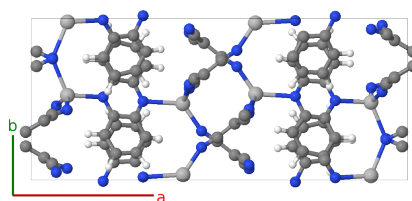
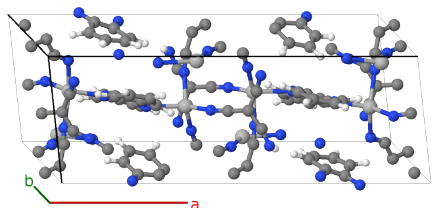
Ag(tcm)(phz)_{1/2} (AgC₁₀N₄H₄) Structure: AB10C4D4_mP152_14_2e_20e_8e_8e-001

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<https://aflow.org/p/JN9W>

https://aflow.org/p/AB10C4D4_mP152_14_2e_20e_8e_8e-001

● Ag
● C
● H
● N

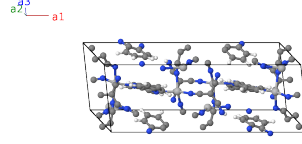


Prototype	AgC ₁₀ H ₄ N ₄
AFLOW prototype label	AB10C4D4_mP152_14_2e_20e_8e_8e-001
CCDC	671413
Pearson symbol	mP152
Space group number	14
Space group symbol	<i>P</i> 2 ₁ / <i>c</i>
AFLOW prototype command	<pre>aflow --proto=AB10C4D4_mP152_14_2e_20e_8e_8e-001 --params=a,b/a,c/a,β,x1,y1,z1,x2,y2,z2,x3,y3,z3,x4,y4,z4,x5,y5,z5,x6,y6,z6,x7, y7,z7,x8,y8,z8,x9,y9,z9,x10,y10,z10,x11,y11,z11,x12,y12,z12,x13,y13,z13,x14,y14,z14,x15, y15,z15,x16,y16,z16,x17,y17,z17,x18,y18,z18,x19,y19,z19,x20,y20,z20,x21,y21,z21,x22,y22, z22,x23,y23,z23,x24,y24,z24,x25,y25,z25,x26,y26,z26,x27,y27,z27,x28,y28,z28,x29,y29,z29, x30,y30,z30,x31,y31,z31,x32,y32,z32,x33,y33,z33,x34,y34,z34,x35,y35,z35,x36,y36,z36,x37, y37,z37,x38,y38,z38</pre>

- In the chemical literature tcm=tricyanomethanide (C(CN)₃⁻), and pyz=pyrazine.

Simple Monoclinic primitive vectors

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



Basis vectors

	Lattice coordinates	Cartesian coordinates	Wyckoff position	Atom type
\mathbf{B}_1	$x_1 \mathbf{a}_1 + y_1 \mathbf{a}_2 + z_1 \mathbf{a}_3$	$(ax_1 + cz_1 \cos \beta) \hat{\mathbf{x}} + by_1 \hat{\mathbf{y}} + cz_1 \sin \beta \hat{\mathbf{z}}$	(4e)	Ag I
\mathbf{B}_2	$-x_1 \mathbf{a}_1 + (y_1 + \frac{1}{2}) \mathbf{a}_2 - (z_1 - \frac{1}{2}) \mathbf{a}_3$	$-(ax_1 + c(z_1 - \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} + b(y_1 + \frac{1}{2}) \hat{\mathbf{y}} - c(z_1 - \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	Ag I
\mathbf{B}_3	$-x_1 \mathbf{a}_1 - y_1 \mathbf{a}_2 - z_1 \mathbf{a}_3$	$-(ax_1 + cz_1 \cos \beta) \hat{\mathbf{x}} - by_1 \hat{\mathbf{y}} - cz_1 \sin \beta \hat{\mathbf{z}}$	(4e)	Ag I
\mathbf{B}_4	$x_1 \mathbf{a}_1 - (y_1 - \frac{1}{2}) \mathbf{a}_2 + (z_1 + \frac{1}{2}) \mathbf{a}_3$	$(ax_1 + c(z_1 + \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} - b(y_1 - \frac{1}{2}) \hat{\mathbf{y}} + c(z_1 + \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	Ag I
\mathbf{B}_5	$x_2 \mathbf{a}_1 + y_2 \mathbf{a}_2 + z_2 \mathbf{a}_3$	$(ax_2 + cz_2 \cos \beta) \hat{\mathbf{x}} + by_2 \hat{\mathbf{y}} + cz_2 \sin \beta \hat{\mathbf{z}}$	(4e)	Ag II
\mathbf{B}_6	$-x_2 \mathbf{a}_1 + (y_2 + \frac{1}{2}) \mathbf{a}_2 - (z_2 - \frac{1}{2}) \mathbf{a}_3$	$-(ax_2 + c(z_2 - \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} + b(y_2 + \frac{1}{2}) \hat{\mathbf{y}} - c(z_2 - \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	Ag II
\mathbf{B}_7	$-x_2 \mathbf{a}_1 - y_2 \mathbf{a}_2 - z_2 \mathbf{a}_3$	$-(ax_2 + cz_2 \cos \beta) \hat{\mathbf{x}} - by_2 \hat{\mathbf{y}} - cz_2 \sin \beta \hat{\mathbf{z}}$	(4e)	Ag II
\mathbf{B}_8	$x_2 \mathbf{a}_1 - (y_2 - \frac{1}{2}) \mathbf{a}_2 + (z_2 + \frac{1}{2}) \mathbf{a}_3$	$(ax_2 + c(z_2 + \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} - b(y_2 - \frac{1}{2}) \hat{\mathbf{y}} + c(z_2 + \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	Ag II
\mathbf{B}_9	$x_3 \mathbf{a}_1 + y_3 \mathbf{a}_2 + z_3 \mathbf{a}_3$	$(ax_3 + cz_3 \cos \beta) \hat{\mathbf{x}} + by_3 \hat{\mathbf{y}} + cz_3 \sin \beta \hat{\mathbf{z}}$	(4e)	C I
\mathbf{B}_{10}	$-x_3 \mathbf{a}_1 + (y_3 + \frac{1}{2}) \mathbf{a}_2 - (z_3 - \frac{1}{2}) \mathbf{a}_3$	$-(ax_3 + c(z_3 - \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} + b(y_3 + \frac{1}{2}) \hat{\mathbf{y}} - c(z_3 - \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	C I
\mathbf{B}_{11}	$-x_3 \mathbf{a}_1 - y_3 \mathbf{a}_2 - z_3 \mathbf{a}_3$	$-(ax_3 + cz_3 \cos \beta) \hat{\mathbf{x}} - by_3 \hat{\mathbf{y}} - cz_3 \sin \beta \hat{\mathbf{z}}$	(4e)	C I
\mathbf{B}_{12}	$x_3 \mathbf{a}_1 - (y_3 - \frac{1}{2}) \mathbf{a}_2 + (z_3 + \frac{1}{2}) \mathbf{a}_3$	$(ax_3 + c(z_3 + \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} - b(y_3 - \frac{1}{2}) \hat{\mathbf{y}} + c(z_3 + \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	C I
\mathbf{B}_{13}	$x_4 \mathbf{a}_1 + y_4 \mathbf{a}_2 + z_4 \mathbf{a}_3$	$(ax_4 + cz_4 \cos \beta) \hat{\mathbf{x}} + by_4 \hat{\mathbf{y}} + cz_4 \sin \beta \hat{\mathbf{z}}$	(4e)	C II
\mathbf{B}_{14}	$-x_4 \mathbf{a}_1 + (y_4 + \frac{1}{2}) \mathbf{a}_2 - (z_4 - \frac{1}{2}) \mathbf{a}_3$	$-(ax_4 + c(z_4 - \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} + b(y_4 + \frac{1}{2}) \hat{\mathbf{y}} - c(z_4 - \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	C II
\mathbf{B}_{15}	$-x_4 \mathbf{a}_1 - y_4 \mathbf{a}_2 - z_4 \mathbf{a}_3$	$-(ax_4 + cz_4 \cos \beta) \hat{\mathbf{x}} - by_4 \hat{\mathbf{y}} - cz_4 \sin \beta \hat{\mathbf{z}}$	(4e)	C II
\mathbf{B}_{16}	$x_4 \mathbf{a}_1 - (y_4 - \frac{1}{2}) \mathbf{a}_2 + (z_4 + \frac{1}{2}) \mathbf{a}_3$	$(ax_4 + c(z_4 + \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} - b(y_4 - \frac{1}{2}) \hat{\mathbf{y}} + c(z_4 + \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	C II
\mathbf{B}_{17}	$x_5 \mathbf{a}_1 + y_5 \mathbf{a}_2 + z_5 \mathbf{a}_3$	$(ax_5 + cz_5 \cos \beta) \hat{\mathbf{x}} + by_5 \hat{\mathbf{y}} + cz_5 \sin \beta \hat{\mathbf{z}}$	(4e)	C III
\mathbf{B}_{18}	$-x_5 \mathbf{a}_1 + (y_5 + \frac{1}{2}) \mathbf{a}_2 - (z_5 - \frac{1}{2}) \mathbf{a}_3$	$-(ax_5 + c(z_5 - \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} + b(y_5 + \frac{1}{2}) \hat{\mathbf{y}} - c(z_5 - \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	C III
\mathbf{B}_{19}	$-x_5 \mathbf{a}_1 - y_5 \mathbf{a}_2 - z_5 \mathbf{a}_3$	$-(ax_5 + cz_5 \cos \beta) \hat{\mathbf{x}} - by_5 \hat{\mathbf{y}} - cz_5 \sin \beta \hat{\mathbf{z}}$	(4e)	C III
\mathbf{B}_{20}	$x_5 \mathbf{a}_1 - (y_5 - \frac{1}{2}) \mathbf{a}_2 + (z_5 + \frac{1}{2}) \mathbf{a}_3$	$(ax_5 + c(z_5 + \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} - b(y_5 - \frac{1}{2}) \hat{\mathbf{y}} + c(z_5 + \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	C III
\mathbf{B}_{21}	$x_6 \mathbf{a}_1 + y_6 \mathbf{a}_2 + z_6 \mathbf{a}_3$	$(ax_6 + cz_6 \cos \beta) \hat{\mathbf{x}} + by_6 \hat{\mathbf{y}} + cz_6 \sin \beta \hat{\mathbf{z}}$	(4e)	C IV
\mathbf{B}_{22}	$-x_6 \mathbf{a}_1 + (y_6 + \frac{1}{2}) \mathbf{a}_2 - (z_6 - \frac{1}{2}) \mathbf{a}_3$	$-(ax_6 + c(z_6 - \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} + b(y_6 + \frac{1}{2}) \hat{\mathbf{y}} - c(z_6 - \frac{1}{2}) \sin \beta \hat{\mathbf{z}}$	(4e)	C IV
\mathbf{B}_{23}	$-x_6 \mathbf{a}_1 - y_6 \mathbf{a}_2 - z_6 \mathbf{a}_3$	$-(ax_6 + cz_6 \cos \beta) \hat{\mathbf{x}} - by_6 \hat{\mathbf{y}} - cz_6 \sin \beta \hat{\mathbf{z}}$	(4e)	C IV

$$\begin{aligned}
\mathbf{B}_{24} &= x_6 \mathbf{a}_1 - (y_6 - \frac{1}{2}) \mathbf{a}_2 + (z_6 + \frac{1}{2}) \mathbf{a}_3 = (ax_6 + c(z_6 + \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} - & (4e) & \text{C IV} \\
& & & b(y_6 - \frac{1}{2}) \hat{\mathbf{y}} + c(z_6 + \frac{1}{2}) \sin \beta \hat{\mathbf{z}} \\
\mathbf{B}_{25} &= x_7 \mathbf{a}_1 + y_7 \mathbf{a}_2 + z_7 \mathbf{a}_3 = (ax_7 + cz_7 \cos \beta) \hat{\mathbf{x}} + by_7 \hat{\mathbf{y}} + cz_7 \sin \beta \hat{\mathbf{z}} & (4e) & \text{C V} \\
\mathbf{B}_{26} &= -x_7 \mathbf{a}_1 + (y_7 + \frac{1}{2}) \mathbf{a}_2 - & & \\
& & & (z_7 - \frac{1}{2}) \mathbf{a}_3 = -(ax_7 + c(z_7 - \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} + & (4e) & \text{C V} \\
& & & b(y_7 + \frac{1}{2}) \hat{\mathbf{y}} - c(z_7 - \frac{1}{2}) \sin \beta \hat{\mathbf{z}} \\
\mathbf{B}_{27} &= -x_7 \mathbf{a}_1 - y_7 \mathbf{a}_2 - z_7 \mathbf{a}_3 = -(ax_7 + cz_7 \cos \beta) \hat{\mathbf{x}} - by_7 \hat{\mathbf{y}} - cz_7 \sin \beta \hat{\mathbf{z}} & (4e) & \text{C V} \\
\mathbf{B}_{28} &= x_7 \mathbf{a}_1 - (y_7 - \frac{1}{2}) \mathbf{a}_2 + (z_7 + \frac{1}{2}) \mathbf{a}_3 = (ax_7 + c(z_7 + \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} - & (4e) & \text{C V} \\
& & & b(y_7 - \frac{1}{2}) \hat{\mathbf{y}} + c(z_7 + \frac{1}{2}) \sin \beta \hat{\mathbf{z}} \\
\mathbf{B}_{29} &= x_8 \mathbf{a}_1 + y_8 \mathbf{a}_2 + z_8 \mathbf{a}_3 = (ax_8 + cz_8 \cos \beta) \hat{\mathbf{x}} + by_8 \hat{\mathbf{y}} + cz_8 \sin \beta \hat{\mathbf{z}} & (4e) & \text{C VI} \\
\mathbf{B}_{30} &= -x_8 \mathbf{a}_1 + (y_8 + \frac{1}{2}) \mathbf{a}_2 - & & \\
& & & (z_8 - \frac{1}{2}) \mathbf{a}_3 = -(ax_8 + c(z_8 - \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} + & (4e) & \text{C VI} \\
& & & b(y_8 + \frac{1}{2}) \hat{\mathbf{y}} - c(z_8 - \frac{1}{2}) \sin \beta \hat{\mathbf{z}} \\
\mathbf{B}_{31} &= -x_8 \mathbf{a}_1 - y_8 \mathbf{a}_2 - z_8 \mathbf{a}_3 = -(ax_8 + cz_8 \cos \beta) \hat{\mathbf{x}} - by_8 \hat{\mathbf{y}} - cz_8 \sin \beta \hat{\mathbf{z}} & (4e) & \text{C VI} \\
\mathbf{B}_{32} &= x_8 \mathbf{a}_1 - (y_8 - \frac{1}{2}) \mathbf{a}_2 + (z_8 + \frac{1}{2}) \mathbf{a}_3 = (ax_8 + c(z_8 + \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} - & (4e) & \text{C VI} \\
& & & b(y_8 - \frac{1}{2}) \hat{\mathbf{y}} + c(z_8 + \frac{1}{2}) \sin \beta \hat{\mathbf{z}} \\
\mathbf{B}_{33} &= x_9 \mathbf{a}_1 + y_9 \mathbf{a}_2 + z_9 \mathbf{a}_3 = (ax_9 + cz_9 \cos \beta) \hat{\mathbf{x}} + by_9 \hat{\mathbf{y}} + cz_9 \sin \beta \hat{\mathbf{z}} & (4e) & \text{C VII} \\
\mathbf{B}_{34} &= -x_9 \mathbf{a}_1 + (y_9 + \frac{1}{2}) \mathbf{a}_2 - & & \\
& & & (z_9 - \frac{1}{2}) \mathbf{a}_3 = -(ax_9 + c(z_9 - \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} + & (4e) & \text{C VII} \\
& & & b(y_9 + \frac{1}{2}) \hat{\mathbf{y}} - c(z_9 - \frac{1}{2}) \sin \beta \hat{\mathbf{z}} \\
\mathbf{B}_{35} &= -x_9 \mathbf{a}_1 - y_9 \mathbf{a}_2 - z_9 \mathbf{a}_3 = -(ax_9 + cz_9 \cos \beta) \hat{\mathbf{x}} - by_9 \hat{\mathbf{y}} - cz_9 \sin \beta \hat{\mathbf{z}} & (4e) & \text{C VII} \\
\mathbf{B}_{36} &= x_9 \mathbf{a}_1 - (y_9 - \frac{1}{2}) \mathbf{a}_2 + (z_9 + \frac{1}{2}) \mathbf{a}_3 = (ax_9 + c(z_9 + \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} - & (4e) & \text{C VII} \\
& & & b(y_9 - \frac{1}{2}) \hat{\mathbf{y}} + c(z_9 + \frac{1}{2}) \sin \beta \hat{\mathbf{z}} \\
\mathbf{B}_{37} &= x_{10} \mathbf{a}_1 + y_{10} \mathbf{a}_2 + z_{10} \mathbf{a}_3 = (ax_{10} + cz_{10} \cos \beta) \hat{\mathbf{x}} + by_{10} \hat{\mathbf{y}} + cz_{10} \sin \beta \hat{\mathbf{z}} & (4e) & \text{C VIII} \\
\mathbf{B}_{38} &= -x_{10} \mathbf{a}_1 + (y_{10} + \frac{1}{2}) \mathbf{a}_2 - & & \\
& & & (z_{10} - \frac{1}{2}) \mathbf{a}_3 = -(ax_{10} + c(z_{10} - \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} + & (4e) & \text{C VIII} \\
& & & b(y_{10} + \frac{1}{2}) \hat{\mathbf{y}} - c(z_{10} - \frac{1}{2}) \sin \beta \hat{\mathbf{z}} \\
\mathbf{B}_{39} &= -x_{10} \mathbf{a}_1 - y_{10} \mathbf{a}_2 - z_{10} \mathbf{a}_3 = -(ax_{10} + cz_{10} \cos \beta) \hat{\mathbf{x}} - by_{10} \hat{\mathbf{y}} - & (4e) & \text{C VIII} \\
& & & cz_{10} \sin \beta \hat{\mathbf{z}} \\
\mathbf{B}_{40} &= x_{10} \mathbf{a}_1 - (y_{10} - \frac{1}{2}) \mathbf{a}_2 + & & \\
& & & (z_{10} + \frac{1}{2}) \mathbf{a}_3 = (ax_{10} + c(z_{10} + \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} - & (4e) & \text{C VIII} \\
& & & b(y_{10} - \frac{1}{2}) \hat{\mathbf{y}} + c(z_{10} + \frac{1}{2}) \sin \beta \hat{\mathbf{z}} \\
\mathbf{B}_{41} &= x_{11} \mathbf{a}_1 + y_{11} \mathbf{a}_2 + z_{11} \mathbf{a}_3 = (ax_{11} + cz_{11} \cos \beta) \hat{\mathbf{x}} + by_{11} \hat{\mathbf{y}} + cz_{11} \sin \beta \hat{\mathbf{z}} & (4e) & \text{C IX} \\
\mathbf{B}_{42} &= -x_{11} \mathbf{a}_1 + (y_{11} + \frac{1}{2}) \mathbf{a}_2 - & & \\
& & & (z_{11} - \frac{1}{2}) \mathbf{a}_3 = -(ax_{11} + c(z_{11} - \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} + & (4e) & \text{C IX} \\
& & & b(y_{11} + \frac{1}{2}) \hat{\mathbf{y}} - c(z_{11} - \frac{1}{2}) \sin \beta \hat{\mathbf{z}} \\
\mathbf{B}_{43} &= -x_{11} \mathbf{a}_1 - y_{11} \mathbf{a}_2 - z_{11} \mathbf{a}_3 = -(ax_{11} + cz_{11} \cos \beta) \hat{\mathbf{x}} - by_{11} \hat{\mathbf{y}} - & (4e) & \text{C IX} \\
& & & cz_{11} \sin \beta \hat{\mathbf{z}} \\
\mathbf{B}_{44} &= x_{11} \mathbf{a}_1 - (y_{11} - \frac{1}{2}) \mathbf{a}_2 + & & \\
& & & (z_{11} + \frac{1}{2}) \mathbf{a}_3 = (ax_{11} + c(z_{11} + \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} - & (4e) & \text{C IX} \\
& & & b(y_{11} - \frac{1}{2}) \hat{\mathbf{y}} + c(z_{11} + \frac{1}{2}) \sin \beta \hat{\mathbf{z}} \\
\mathbf{B}_{45} &= x_{12} \mathbf{a}_1 + y_{12} \mathbf{a}_2 + z_{12} \mathbf{a}_3 = (ax_{12} + cz_{12} \cos \beta) \hat{\mathbf{x}} + by_{12} \hat{\mathbf{y}} + cz_{12} \sin \beta \hat{\mathbf{z}} & (4e) & \text{C X} \\
\mathbf{B}_{46} &= -x_{12} \mathbf{a}_1 + (y_{12} + \frac{1}{2}) \mathbf{a}_2 - & & \\
& & & (z_{12} - \frac{1}{2}) \mathbf{a}_3 = -(ax_{12} + c(z_{12} - \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} + & (4e) & \text{C X} \\
& & & b(y_{12} + \frac{1}{2}) \hat{\mathbf{y}} - c(z_{12} - \frac{1}{2}) \sin \beta \hat{\mathbf{z}} \\
\mathbf{B}_{47} &= -x_{12} \mathbf{a}_1 - y_{12} \mathbf{a}_2 - z_{12} \mathbf{a}_3 = -(ax_{12} + cz_{12} \cos \beta) \hat{\mathbf{x}} - by_{12} \hat{\mathbf{y}} - & (4e) & \text{C X} \\
& & & cz_{12} \sin \beta \hat{\mathbf{z}} \\
\mathbf{B}_{48} &= x_{12} \mathbf{a}_1 - (y_{12} - \frac{1}{2}) \mathbf{a}_2 + & & \\
& & & (z_{12} + \frac{1}{2}) \mathbf{a}_3 = (ax_{12} + c(z_{12} + \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} - & (4e) & \text{C X} \\
& & & b(y_{12} - \frac{1}{2}) \hat{\mathbf{y}} + c(z_{12} + \frac{1}{2}) \sin \beta \hat{\mathbf{z}} \\
\mathbf{B}_{49} &= x_{13} \mathbf{a}_1 + y_{13} \mathbf{a}_2 + z_{13} \mathbf{a}_3 = (ax_{13} + cz_{13} \cos \beta) \hat{\mathbf{x}} + by_{13} \hat{\mathbf{y}} + cz_{13} \sin \beta \hat{\mathbf{z}} & (4e) & \text{C XI} \\
\mathbf{B}_{50} &= -x_{13} \mathbf{a}_1 + (y_{13} + \frac{1}{2}) \mathbf{a}_2 - & & \\
& & & (z_{13} - \frac{1}{2}) \mathbf{a}_3 = -(ax_{13} + c(z_{13} - \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} + & (4e) & \text{C XI} \\
& & & b(y_{13} + \frac{1}{2}) \hat{\mathbf{y}} - c(z_{13} - \frac{1}{2}) \sin \beta \hat{\mathbf{z}}
\end{aligned}$$

$$\begin{aligned}
\mathbf{B}_{129} &= x_{33} \mathbf{a}_1 + y_{33} \mathbf{a}_2 + z_{33} \mathbf{a}_3 &= (ax_{33} + cz_{33} \cos \beta) \hat{\mathbf{x}} + by_{33} \hat{\mathbf{y}} + cz_{33} \sin \beta \hat{\mathbf{z}} &(4e) & \text{N III} \\
\mathbf{B}_{130} &= -x_{33} \mathbf{a}_1 + (y_{33} + \frac{1}{2}) \mathbf{a}_2 - &= - (ax_{33} + c (z_{33} - \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} + &(4e) & \text{N III} \\
& \quad (z_{33} - \frac{1}{2}) \mathbf{a}_3 & \quad b (y_{33} + \frac{1}{2}) \hat{\mathbf{y}} - c (z_{33} - \frac{1}{2}) \sin \beta \hat{\mathbf{z}} \\
\mathbf{B}_{131} &= -x_{33} \mathbf{a}_1 - y_{33} \mathbf{a}_2 - z_{33} \mathbf{a}_3 &= - (ax_{33} + cz_{33} \cos \beta) \hat{\mathbf{x}} - by_{33} \hat{\mathbf{y}} - &(4e) & \text{N III} \\
& & \quad cz_{33} \sin \beta \hat{\mathbf{z}} \\
\mathbf{B}_{132} &= x_{33} \mathbf{a}_1 - (y_{33} - \frac{1}{2}) \mathbf{a}_2 + &= (ax_{33} + c (z_{33} + \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} - &(4e) & \text{N III} \\
& \quad (z_{33} + \frac{1}{2}) \mathbf{a}_3 & \quad b (y_{33} - \frac{1}{2}) \hat{\mathbf{y}} + c (z_{33} + \frac{1}{2}) \sin \beta \hat{\mathbf{z}} \\
\mathbf{B}_{133} &= x_{34} \mathbf{a}_1 + y_{34} \mathbf{a}_2 + z_{34} \mathbf{a}_3 &= (ax_{34} + cz_{34} \cos \beta) \hat{\mathbf{x}} + by_{34} \hat{\mathbf{y}} + cz_{34} \sin \beta \hat{\mathbf{z}} &(4e) & \text{N IV} \\
\mathbf{B}_{134} &= -x_{34} \mathbf{a}_1 + (y_{34} + \frac{1}{2}) \mathbf{a}_2 - &= - (ax_{34} + c (z_{34} - \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} + &(4e) & \text{N IV} \\
& \quad (z_{34} - \frac{1}{2}) \mathbf{a}_3 & \quad b (y_{34} + \frac{1}{2}) \hat{\mathbf{y}} - c (z_{34} - \frac{1}{2}) \sin \beta \hat{\mathbf{z}} \\
\mathbf{B}_{135} &= -x_{34} \mathbf{a}_1 - y_{34} \mathbf{a}_2 - z_{34} \mathbf{a}_3 &= - (ax_{34} + cz_{34} \cos \beta) \hat{\mathbf{x}} - by_{34} \hat{\mathbf{y}} - &(4e) & \text{N IV} \\
& & \quad cz_{34} \sin \beta \hat{\mathbf{z}} \\
\mathbf{B}_{136} &= x_{34} \mathbf{a}_1 - (y_{34} - \frac{1}{2}) \mathbf{a}_2 + &= (ax_{34} + c (z_{34} + \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} - &(4e) & \text{N IV} \\
& \quad (z_{34} + \frac{1}{2}) \mathbf{a}_3 & \quad b (y_{34} - \frac{1}{2}) \hat{\mathbf{y}} + c (z_{34} + \frac{1}{2}) \sin \beta \hat{\mathbf{z}} \\
\mathbf{B}_{137} &= x_{35} \mathbf{a}_1 + y_{35} \mathbf{a}_2 + z_{35} \mathbf{a}_3 &= (ax_{35} + cz_{35} \cos \beta) \hat{\mathbf{x}} + by_{35} \hat{\mathbf{y}} + cz_{35} \sin \beta \hat{\mathbf{z}} &(4e) & \text{N V} \\
\mathbf{B}_{138} &= -x_{35} \mathbf{a}_1 + (y_{35} + \frac{1}{2}) \mathbf{a}_2 - &= - (ax_{35} + c (z_{35} - \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} + &(4e) & \text{N V} \\
& \quad (z_{35} - \frac{1}{2}) \mathbf{a}_3 & \quad b (y_{35} + \frac{1}{2}) \hat{\mathbf{y}} - c (z_{35} - \frac{1}{2}) \sin \beta \hat{\mathbf{z}} \\
\mathbf{B}_{139} &= -x_{35} \mathbf{a}_1 - y_{35} \mathbf{a}_2 - z_{35} \mathbf{a}_3 &= - (ax_{35} + cz_{35} \cos \beta) \hat{\mathbf{x}} - by_{35} \hat{\mathbf{y}} - &(4e) & \text{N V} \\
& & \quad cz_{35} \sin \beta \hat{\mathbf{z}} \\
\mathbf{B}_{140} &= x_{35} \mathbf{a}_1 - (y_{35} - \frac{1}{2}) \mathbf{a}_2 + &= (ax_{35} + c (z_{35} + \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} - &(4e) & \text{N V} \\
& \quad (z_{35} + \frac{1}{2}) \mathbf{a}_3 & \quad b (y_{35} - \frac{1}{2}) \hat{\mathbf{y}} + c (z_{35} + \frac{1}{2}) \sin \beta \hat{\mathbf{z}} \\
\mathbf{B}_{141} &= x_{36} \mathbf{a}_1 + y_{36} \mathbf{a}_2 + z_{36} \mathbf{a}_3 &= (ax_{36} + cz_{36} \cos \beta) \hat{\mathbf{x}} + by_{36} \hat{\mathbf{y}} + cz_{36} \sin \beta \hat{\mathbf{z}} &(4e) & \text{N VI} \\
\mathbf{B}_{142} &= -x_{36} \mathbf{a}_1 + (y_{36} + \frac{1}{2}) \mathbf{a}_2 - &= - (ax_{36} + c (z_{36} - \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} + &(4e) & \text{N VI} \\
& \quad (z_{36} - \frac{1}{2}) \mathbf{a}_3 & \quad b (y_{36} + \frac{1}{2}) \hat{\mathbf{y}} - c (z_{36} - \frac{1}{2}) \sin \beta \hat{\mathbf{z}} \\
\mathbf{B}_{143} &= -x_{36} \mathbf{a}_1 - y_{36} \mathbf{a}_2 - z_{36} \mathbf{a}_3 &= - (ax_{36} + cz_{36} \cos \beta) \hat{\mathbf{x}} - by_{36} \hat{\mathbf{y}} - &(4e) & \text{N VI} \\
& & \quad cz_{36} \sin \beta \hat{\mathbf{z}} \\
\mathbf{B}_{144} &= x_{36} \mathbf{a}_1 - (y_{36} - \frac{1}{2}) \mathbf{a}_2 + &= (ax_{36} + c (z_{36} + \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} - &(4e) & \text{N VI} \\
& \quad (z_{36} + \frac{1}{2}) \mathbf{a}_3 & \quad b (y_{36} - \frac{1}{2}) \hat{\mathbf{y}} + c (z_{36} + \frac{1}{2}) \sin \beta \hat{\mathbf{z}} \\
\mathbf{B}_{145} &= x_{37} \mathbf{a}_1 + y_{37} \mathbf{a}_2 + z_{37} \mathbf{a}_3 &= (ax_{37} + cz_{37} \cos \beta) \hat{\mathbf{x}} + by_{37} \hat{\mathbf{y}} + cz_{37} \sin \beta \hat{\mathbf{z}} &(4e) & \text{N VII} \\
\mathbf{B}_{146} &= -x_{37} \mathbf{a}_1 + (y_{37} + \frac{1}{2}) \mathbf{a}_2 - &= - (ax_{37} + c (z_{37} - \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} + &(4e) & \text{N VII} \\
& \quad (z_{37} - \frac{1}{2}) \mathbf{a}_3 & \quad b (y_{37} + \frac{1}{2}) \hat{\mathbf{y}} - c (z_{37} - \frac{1}{2}) \sin \beta \hat{\mathbf{z}} \\
\mathbf{B}_{147} &= -x_{37} \mathbf{a}_1 - y_{37} \mathbf{a}_2 - z_{37} \mathbf{a}_3 &= - (ax_{37} + cz_{37} \cos \beta) \hat{\mathbf{x}} - by_{37} \hat{\mathbf{y}} - &(4e) & \text{N VII} \\
& & \quad cz_{37} \sin \beta \hat{\mathbf{z}} \\
\mathbf{B}_{148} &= x_{37} \mathbf{a}_1 - (y_{37} - \frac{1}{2}) \mathbf{a}_2 + &= (ax_{37} + c (z_{37} + \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} - &(4e) & \text{N VII} \\
& \quad (z_{37} + \frac{1}{2}) \mathbf{a}_3 & \quad b (y_{37} - \frac{1}{2}) \hat{\mathbf{y}} + c (z_{37} + \frac{1}{2}) \sin \beta \hat{\mathbf{z}} \\
\mathbf{B}_{149} &= x_{38} \mathbf{a}_1 + y_{38} \mathbf{a}_2 + z_{38} \mathbf{a}_3 &= (ax_{38} + cz_{38} \cos \beta) \hat{\mathbf{x}} + by_{38} \hat{\mathbf{y}} + cz_{38} \sin \beta \hat{\mathbf{z}} &(4e) & \text{N VIII} \\
\mathbf{B}_{150} &= -x_{38} \mathbf{a}_1 + (y_{38} + \frac{1}{2}) \mathbf{a}_2 - &= - (ax_{38} + c (z_{38} - \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} + &(4e) & \text{N VIII} \\
& \quad (z_{38} - \frac{1}{2}) \mathbf{a}_3 & \quad b (y_{38} + \frac{1}{2}) \hat{\mathbf{y}} - c (z_{38} - \frac{1}{2}) \sin \beta \hat{\mathbf{z}} \\
\mathbf{B}_{151} &= -x_{38} \mathbf{a}_1 - y_{38} \mathbf{a}_2 - z_{38} \mathbf{a}_3 &= - (ax_{38} + cz_{38} \cos \beta) \hat{\mathbf{x}} - by_{38} \hat{\mathbf{y}} - &(4e) & \text{N VIII} \\
& & \quad cz_{38} \sin \beta \hat{\mathbf{z}} \\
\mathbf{B}_{152} &= x_{38} \mathbf{a}_1 - (y_{38} - \frac{1}{2}) \mathbf{a}_2 + &= (ax_{38} + c (z_{38} + \frac{1}{2}) \cos \beta) \hat{\mathbf{x}} - &(4e) & \text{N VIII} \\
& \quad (z_{38} + \frac{1}{2}) \mathbf{a}_3 & \quad b (y_{38} - \frac{1}{2}) \hat{\mathbf{y}} + c (z_{38} + \frac{1}{2}) \sin \beta \hat{\mathbf{z}}
\end{aligned}$$

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