

Li₇MnN₄ Structure:

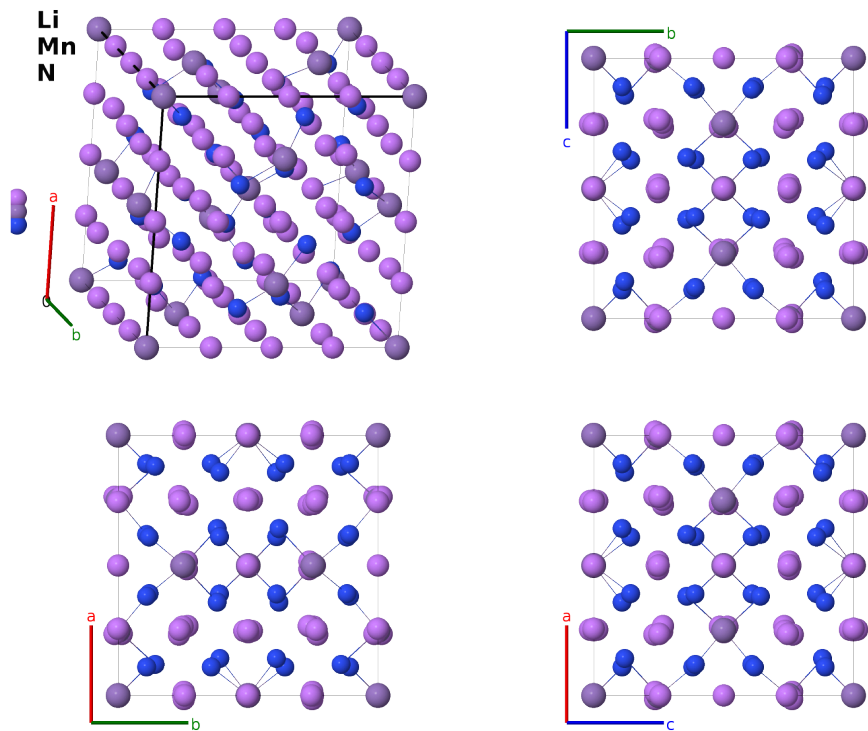
A7BC4_cP96_218_bcefi_ad_ei-001

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- D. Hicks, M. J. Mehl, M. Esters, C. Osos, O. Levy, G. L. W. Hart, C. Toher, and S. Curtarolo, *The AFLOW Library of Crystallographic Prototypes: Part 3*, Comput. Mater. Sci. **199**, 110450 (2021), doi: 10.1016/j.commatsci.2021.110450.

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

https://aflow.org/prototype-encyclopedia/A7BC4_cP96_218_bcefi_ad_ei-001



Prototype	Li ₇ MnN ₄
AFLOW prototype label	A7BC4_cP96_218_bcefi_ad_ei-001
ICSD	154076
CCDC	1670745
Pearson symbol	cP96
Space group number	218
Space group symbol	$P\bar{4}3n$
AFLOW prototype command	<code>aflow --proto=A7BC4_cP96_218_bcefi_ad_ei-001</code> <code>--params=a, x₅, x₆, x₇, x₈, y₈, z₈, x₉, y₉, z₉</code>

Other compounds with this structure

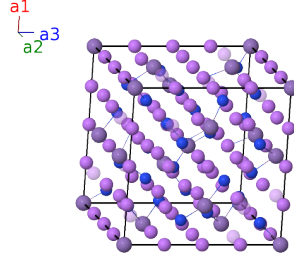
Li₇PN₄, Li₇VN₄

Simple Cubic primitive vectors

$$\mathbf{a}_1 = a \hat{\mathbf{x}}$$

$$\mathbf{a}_2 = a \hat{\mathbf{y}}$$

$$\mathbf{a}_3 = a \hat{\mathbf{z}}$$



Basis vectors

	Lattice coordinates		Cartesian coordinates	Wyckoff position	Atom type
$\mathbf{B}_1$	$=$	0	$=$	0	Mn I
$\mathbf{B}_2$	$=$	$\frac{1}{2} \mathbf{a}_1 + \frac{1}{2} \mathbf{a}_2 + \frac{1}{2} \mathbf{a}_3$	$=$	$\frac{1}{2} a \hat{\mathbf{x}} + \frac{1}{2} a \hat{\mathbf{y}} + \frac{1}{2} a \hat{\mathbf{z}}$	(2a) Mn I
$\mathbf{B}_3$	$=$	$\frac{1}{2} \mathbf{a}_2 + \frac{1}{2} \mathbf{a}_3$	$=$	$\frac{1}{2} a \hat{\mathbf{y}} + \frac{1}{2} a \hat{\mathbf{z}}$	(6b) Li I
$\mathbf{B}_4$	$=$	$\frac{1}{2} \mathbf{a}_1 + \frac{1}{2} \mathbf{a}_3$	$=$	$\frac{1}{2} a \hat{\mathbf{x}} + \frac{1}{2} a \hat{\mathbf{z}}$	(6b) Li I
$\mathbf{B}_5$	$=$	$\frac{1}{2} \mathbf{a}_1 + \frac{1}{2} \mathbf{a}_2$	$=$	$\frac{1}{2} a \hat{\mathbf{x}} + \frac{1}{2} a \hat{\mathbf{y}}$	(6b) Li I
$\mathbf{B}_6$	$=$	$\frac{1}{2} \mathbf{a}_2$	$=$	$\frac{1}{2} a \hat{\mathbf{y}}$	(6b) Li I
$\mathbf{B}_7$	$=$	$\frac{1}{2} \mathbf{a}_1$	$=$	$\frac{1}{2} a \hat{\mathbf{x}}$	(6b) Li I
$\mathbf{B}_8$	$=$	$\frac{1}{2} \mathbf{a}_3$	$=$	$\frac{1}{2} a \hat{\mathbf{z}}$	(6b) Li I
$\mathbf{B}_9$	$=$	$\frac{1}{4} \mathbf{a}_1 + \frac{1}{2} \mathbf{a}_2$	$=$	$\frac{1}{4} a \hat{\mathbf{x}} + \frac{1}{2} a \hat{\mathbf{y}}$	(6c) Li II
$\mathbf{B}_{10}$	$=$	$\frac{3}{4} \mathbf{a}_1 + \frac{1}{2} \mathbf{a}_2$	$=$	$\frac{3}{4} a \hat{\mathbf{x}} + \frac{1}{2} a \hat{\mathbf{y}}$	(6c) Li II
$\mathbf{B}_{11}$	$=$	$\frac{1}{4} \mathbf{a}_2 + \frac{1}{2} \mathbf{a}_3$	$=$	$\frac{1}{4} a \hat{\mathbf{y}} + \frac{1}{2} a \hat{\mathbf{z}}$	(6c) Li II
$\mathbf{B}_{12}$	$=$	$\frac{3}{4} \mathbf{a}_2 + \frac{1}{2} \mathbf{a}_3$	$=$	$\frac{3}{4} a \hat{\mathbf{y}} + \frac{1}{2} a \hat{\mathbf{z}}$	(6c) Li II
$\mathbf{B}_{13}$	$=$	$\frac{1}{2} \mathbf{a}_1 + \frac{1}{4} \mathbf{a}_3$	$=$	$\frac{1}{2} a \hat{\mathbf{x}} + \frac{1}{4} a \hat{\mathbf{z}}$	(6c) Li II
$\mathbf{B}_{14}$	$=$	$\frac{1}{2} \mathbf{a}_1 + \frac{3}{4} \mathbf{a}_3$	$=$	$\frac{1}{2} a \hat{\mathbf{x}} + \frac{3}{4} a \hat{\mathbf{z}}$	(6c) Li II
$\mathbf{B}_{15}$	$=$	$\frac{1}{4} \mathbf{a}_1 + \frac{1}{2} \mathbf{a}_3$	$=$	$\frac{1}{4} a \hat{\mathbf{x}} + \frac{1}{2} a \hat{\mathbf{z}}$	(6d) Mn II
$\mathbf{B}_{16}$	$=$	$\frac{3}{4} \mathbf{a}_1 + \frac{1}{2} \mathbf{a}_3$	$=$	$\frac{3}{4} a \hat{\mathbf{x}} + \frac{1}{2} a \hat{\mathbf{z}}$	(6d) Mn II
$\mathbf{B}_{17}$	$=$	$\frac{1}{2} \mathbf{a}_1 + \frac{1}{4} \mathbf{a}_2$	$=$	$\frac{1}{2} a \hat{\mathbf{x}} + \frac{1}{4} a \hat{\mathbf{y}}$	(6d) Mn II
$\mathbf{B}_{18}$	$=$	$\frac{1}{2} \mathbf{a}_1 + \frac{3}{4} \mathbf{a}_2$	$=$	$\frac{1}{2} a \hat{\mathbf{x}} + \frac{3}{4} a \hat{\mathbf{y}}$	(6d) Mn II
$\mathbf{B}_{19}$	$=$	$\frac{1}{2} \mathbf{a}_2 + \frac{1}{4} \mathbf{a}_3$	$=$	$\frac{1}{2} a \hat{\mathbf{y}} + \frac{1}{4} a \hat{\mathbf{z}}$	(6d) Mn II
$\mathbf{B}_{20}$	$=$	$\frac{1}{2} \mathbf{a}_2 + \frac{3}{4} \mathbf{a}_3$	$=$	$\frac{1}{2} a \hat{\mathbf{y}} + \frac{3}{4} a \hat{\mathbf{z}}$	(6d) Mn II
$\mathbf{B}_{21}$	$=$	$x_5 \mathbf{a}_1 + x_5 \mathbf{a}_2 + x_5 \mathbf{a}_3$	$=$	$ax_5 \hat{\mathbf{x}} + ax_5 \hat{\mathbf{y}} + ax_5 \hat{\mathbf{z}}$	(8e) Li III
$\mathbf{B}_{22}$	$=$	$-x_5 \mathbf{a}_1 - x_5 \mathbf{a}_2 + x_5 \mathbf{a}_3$	$=$	$-ax_5 \hat{\mathbf{x}} - ax_5 \hat{\mathbf{y}} + ax_5 \hat{\mathbf{z}}$	(8e) Li III
$\mathbf{B}_{23}$	$=$	$-x_5 \mathbf{a}_1 + x_5 \mathbf{a}_2 - x_5 \mathbf{a}_3$	$=$	$-ax_5 \hat{\mathbf{x}} + ax_5 \hat{\mathbf{y}} - ax_5 \hat{\mathbf{z}}$	(8e) Li III
$\mathbf{B}_{24}$	$=$	$x_5 \mathbf{a}_1 - x_5 \mathbf{a}_2 - x_5 \mathbf{a}_3$	$=$	$ax_5 \hat{\mathbf{x}} - ax_5 \hat{\mathbf{y}} - ax_5 \hat{\mathbf{z}}$	(8e) Li III
$\mathbf{B}_{25}$	$=$	$(x_5 + \frac{1}{2}) \mathbf{a}_1 + (x_5 + \frac{1}{2}) \mathbf{a}_2 + (x_5 + \frac{1}{2}) \mathbf{a}_3$	$=$	$a(x_5 + \frac{1}{2}) \hat{\mathbf{x}} + a(x_5 + \frac{1}{2}) \hat{\mathbf{y}} + a(x_5 + \frac{1}{2}) \hat{\mathbf{z}}$	(8e) Li III
$\mathbf{B}_{26}$	$=$	$-(x_5 - \frac{1}{2}) \mathbf{a}_1 - (x_5 - \frac{1}{2}) \mathbf{a}_2 + (x_5 + \frac{1}{2}) \mathbf{a}_3$	$=$	$-a(x_5 - \frac{1}{2}) \hat{\mathbf{x}} - a(x_5 - \frac{1}{2}) \hat{\mathbf{y}} + a(x_5 + \frac{1}{2}) \hat{\mathbf{z}}$	(8e) Li III

$\mathbf{B}_{27} =$	$(x_5 + \frac{1}{2}) \mathbf{a}_1 - (x_5 - \frac{1}{2}) \mathbf{a}_2 -$	$=$	$a(x_5 + \frac{1}{2}) \hat{\mathbf{x}} - a(x_5 - \frac{1}{2}) \hat{\mathbf{y}} - a(x_5 - \frac{1}{2}) \hat{\mathbf{z}}$	(8e)	Li III
	$(x_5 - \frac{1}{2}) \mathbf{a}_3$				
$\mathbf{B}_{28} =$	$-(x_5 - \frac{1}{2}) \mathbf{a}_1 + (x_5 + \frac{1}{2}) \mathbf{a}_2 -$	$=$	$-a(x_5 - \frac{1}{2}) \hat{\mathbf{x}} + a(x_5 + \frac{1}{2}) \hat{\mathbf{y}} -$	(8e)	Li III
	$(x_5 - \frac{1}{2}) \mathbf{a}_3$		$a(x_5 - \frac{1}{2}) \hat{\mathbf{z}}$		
$\mathbf{B}_{29} =$	$x_6 \mathbf{a}_1 + x_6 \mathbf{a}_2 + x_6 \mathbf{a}_3$	$=$	$ax_6 \hat{\mathbf{x}} + ax_6 \hat{\mathbf{y}} + ax_6 \hat{\mathbf{z}}$	(8e)	N I
$\mathbf{B}_{30} =$	$-x_6 \mathbf{a}_1 - x_6 \mathbf{a}_2 + x_6 \mathbf{a}_3$	$=$	$-ax_6 \hat{\mathbf{x}} - ax_6 \hat{\mathbf{y}} + ax_6 \hat{\mathbf{z}}$	(8e)	N I
$\mathbf{B}_{31} =$	$-x_6 \mathbf{a}_1 + x_6 \mathbf{a}_2 - x_6 \mathbf{a}_3$	$=$	$-ax_6 \hat{\mathbf{x}} + ax_6 \hat{\mathbf{y}} - ax_6 \hat{\mathbf{z}}$	(8e)	N I
$\mathbf{B}_{32} =$	$x_6 \mathbf{a}_1 - x_6 \mathbf{a}_2 - x_6 \mathbf{a}_3$	$=$	$ax_6 \hat{\mathbf{x}} - ax_6 \hat{\mathbf{y}} - ax_6 \hat{\mathbf{z}}$	(8e)	N I
$\mathbf{B}_{33} =$	$(x_6 + \frac{1}{2}) \mathbf{a}_1 + (x_6 + \frac{1}{2}) \mathbf{a}_2 +$	$=$	$a(x_6 + \frac{1}{2}) \hat{\mathbf{x}} + a(x_6 + \frac{1}{2}) \hat{\mathbf{y}} + a(x_6 + \frac{1}{2}) \hat{\mathbf{z}}$	(8e)	N I
	$(x_6 + \frac{1}{2}) \mathbf{a}_3$				
$\mathbf{B}_{34} =$	$-(x_6 - \frac{1}{2}) \mathbf{a}_1 - (x_6 - \frac{1}{2}) \mathbf{a}_2 +$	$=$	$-a(x_6 - \frac{1}{2}) \hat{\mathbf{x}} - a(x_6 - \frac{1}{2}) \hat{\mathbf{y}} +$	(8e)	N I
	$(x_6 + \frac{1}{2}) \mathbf{a}_3$		$a(x_6 + \frac{1}{2}) \hat{\mathbf{z}}$		
$\mathbf{B}_{35} =$	$(x_6 + \frac{1}{2}) \mathbf{a}_1 - (x_6 - \frac{1}{2}) \mathbf{a}_2 -$	$=$	$a(x_6 + \frac{1}{2}) \hat{\mathbf{x}} - a(x_6 - \frac{1}{2}) \hat{\mathbf{y}} - a(x_6 - \frac{1}{2}) \hat{\mathbf{z}}$	(8e)	N I
	$(x_6 - \frac{1}{2}) \mathbf{a}_3$				
$\mathbf{B}_{36} =$	$-(x_6 - \frac{1}{2}) \mathbf{a}_1 + (x_6 + \frac{1}{2}) \mathbf{a}_2 -$	$=$	$-a(x_6 - \frac{1}{2}) \hat{\mathbf{x}} + a(x_6 + \frac{1}{2}) \hat{\mathbf{y}} -$	(8e)	N I
	$(x_6 - \frac{1}{2}) \mathbf{a}_3$		$a(x_6 - \frac{1}{2}) \hat{\mathbf{z}}$		
$\mathbf{B}_{37} =$	$x_7 \mathbf{a}_1$	$=$	$ax_7 \hat{\mathbf{x}}$	(12f)	Li IV
$\mathbf{B}_{38} =$	$-x_7 \mathbf{a}_1$	$=$	$-ax_7 \hat{\mathbf{x}}$	(12f)	Li IV
$\mathbf{B}_{39} =$	$x_7 \mathbf{a}_2$	$=$	$ax_7 \hat{\mathbf{y}}$	(12f)	Li IV
$\mathbf{B}_{40} =$	$-x_7 \mathbf{a}_2$	$=$	$-ax_7 \hat{\mathbf{y}}$	(12f)	Li IV
$\mathbf{B}_{41} =$	$x_7 \mathbf{a}_3$	$=$	$ax_7 \hat{\mathbf{z}}$	(12f)	Li IV
$\mathbf{B}_{42} =$	$-x_7 \mathbf{a}_3$	$=$	$-ax_7 \hat{\mathbf{z}}$	(12f)	Li IV
$\mathbf{B}_{43} =$	$\frac{1}{2} \mathbf{a}_1 + (x_7 + \frac{1}{2}) \mathbf{a}_2 + \frac{1}{2} \mathbf{a}_3$	$=$	$\frac{1}{2} a \hat{\mathbf{x}} + a(x_7 + \frac{1}{2}) \hat{\mathbf{y}} + \frac{1}{2} a \hat{\mathbf{z}}$	(12f)	Li IV
$\mathbf{B}_{44} =$	$\frac{1}{2} \mathbf{a}_1 - (x_7 - \frac{1}{2}) \mathbf{a}_2 + \frac{1}{2} \mathbf{a}_3$	$=$	$\frac{1}{2} a \hat{\mathbf{x}} - a(x_7 - \frac{1}{2}) \hat{\mathbf{y}} + \frac{1}{2} a \hat{\mathbf{z}}$	(12f)	Li IV
$\mathbf{B}_{45} =$	$(x_7 + \frac{1}{2}) \mathbf{a}_1 + \frac{1}{2} \mathbf{a}_2 + \frac{1}{2} \mathbf{a}_3$	$=$	$a(x_7 + \frac{1}{2}) \hat{\mathbf{x}} + \frac{1}{2} a \hat{\mathbf{y}} + \frac{1}{2} a \hat{\mathbf{z}}$	(12f)	Li IV
$\mathbf{B}_{46} =$	$-(x_7 - \frac{1}{2}) \mathbf{a}_1 + \frac{1}{2} \mathbf{a}_2 + \frac{1}{2} \mathbf{a}_3$	$=$	$-a(x_7 - \frac{1}{2}) \hat{\mathbf{x}} + \frac{1}{2} a \hat{\mathbf{y}} + \frac{1}{2} a \hat{\mathbf{z}}$	(12f)	Li IV
$\mathbf{B}_{47} =$	$\frac{1}{2} \mathbf{a}_1 + \frac{1}{2} \mathbf{a}_2 + (x_7 + \frac{1}{2}) \mathbf{a}_3$	$=$	$\frac{1}{2} a \hat{\mathbf{x}} + \frac{1}{2} a \hat{\mathbf{y}} + a(x_7 + \frac{1}{2}) \hat{\mathbf{z}}$	(12f)	Li IV
$\mathbf{B}_{48} =$	$\frac{1}{2} \mathbf{a}_1 + \frac{1}{2} \mathbf{a}_2 - (x_7 - \frac{1}{2}) \mathbf{a}_3$	$=$	$\frac{1}{2} a \hat{\mathbf{x}} + \frac{1}{2} a \hat{\mathbf{y}} - a(x_7 - \frac{1}{2}) \hat{\mathbf{z}}$	(12f)	Li IV
$\mathbf{B}_{49} =$	$x_8 \mathbf{a}_1 + y_8 \mathbf{a}_2 + z_8 \mathbf{a}_3$	$=$	$ax_8 \hat{\mathbf{x}} + ay_8 \hat{\mathbf{y}} + az_8 \hat{\mathbf{z}}$	(24i)	Li V
$\mathbf{B}_{50} =$	$-x_8 \mathbf{a}_1 - y_8 \mathbf{a}_2 + z_8 \mathbf{a}_3$	$=$	$-ax_8 \hat{\mathbf{x}} - ay_8 \hat{\mathbf{y}} + az_8 \hat{\mathbf{z}}$	(24i)	Li V
$\mathbf{B}_{51} =$	$-x_8 \mathbf{a}_1 + y_8 \mathbf{a}_2 - z_8 \mathbf{a}_3$	$=$	$-ax_8 \hat{\mathbf{x}} + ay_8 \hat{\mathbf{y}} - az_8 \hat{\mathbf{z}}$	(24i)	Li V
$\mathbf{B}_{52} =$	$x_8 \mathbf{a}_1 - y_8 \mathbf{a}_2 - z_8 \mathbf{a}_3$	$=$	$ax_8 \hat{\mathbf{x}} - ay_8 \hat{\mathbf{y}} - az_8 \hat{\mathbf{z}}$	(24i)	Li V
$\mathbf{B}_{53} =$	$z_8 \mathbf{a}_1 + x_8 \mathbf{a}_2 + y_8 \mathbf{a}_3$	$=$	$az_8 \hat{\mathbf{x}} + ax_8 \hat{\mathbf{y}} + ay_8 \hat{\mathbf{z}}$	(24i)	Li V
$\mathbf{B}_{54} =$	$z_8 \mathbf{a}_1 - x_8 \mathbf{a}_2 - y_8 \mathbf{a}_3$	$=$	$az_8 \hat{\mathbf{x}} - ax_8 \hat{\mathbf{y}} - ay_8 \hat{\mathbf{z}}$	(24i)	Li V
$\mathbf{B}_{55} =$	$-z_8 \mathbf{a}_1 - x_8 \mathbf{a}_2 + y_8 \mathbf{a}_3$	$=$	$-az_8 \hat{\mathbf{x}} - ax_8 \hat{\mathbf{y}} + ay_8 \hat{\mathbf{z}}$	(24i)	Li V
$\mathbf{B}_{56} =$	$-z_8 \mathbf{a}_1 + x_8 \mathbf{a}_2 - y_8 \mathbf{a}_3$	$=$	$-az_8 \hat{\mathbf{x}} + ax_8 \hat{\mathbf{y}} - ay_8 \hat{\mathbf{z}}$	(24i)	Li V
$\mathbf{B}_{57} =$	$y_8 \mathbf{a}_1 + z_8 \mathbf{a}_2 + x_8 \mathbf{a}_3$	$=$	$ay_8 \hat{\mathbf{x}} + az_8 \hat{\mathbf{y}} + ax_8 \hat{\mathbf{z}}$	(24i)	Li V
$\mathbf{B}_{58} =$	$-y_8 \mathbf{a}_1 + z_8 \mathbf{a}_2 - x_8 \mathbf{a}_3$	$=$	$-ay_8 \hat{\mathbf{x}} + az_8 \hat{\mathbf{y}} - ax_8 \hat{\mathbf{z}}$	(24i)	Li V
$\mathbf{B}_{59} =$	$y_8 \mathbf{a}_1 - z_8 \mathbf{a}_2 - x_8 \mathbf{a}_3$	$=$	$ay_8 \hat{\mathbf{x}} - az_8 \hat{\mathbf{y}} - ax_8 \hat{\mathbf{z}}$	(24i)	Li V
$\mathbf{B}_{60} =$	$-y_8 \mathbf{a}_1 - z_8 \mathbf{a}_2 + x_8 \mathbf{a}_3$	$=$	$-ay_8 \hat{\mathbf{x}} - az_8 \hat{\mathbf{y}} + ax_8 \hat{\mathbf{z}}$	(24i)	Li V
$\mathbf{B}_{61} =$	$(y_8 + \frac{1}{2}) \mathbf{a}_1 + (x_8 + \frac{1}{2}) \mathbf{a}_2 +$	$=$	$a(y_8 + \frac{1}{2}) \hat{\mathbf{x}} + a(x_8 + \frac{1}{2}) \hat{\mathbf{y}} + a(z_8 + \frac{1}{2}) \hat{\mathbf{z}}$	(24i)	Li V
	$(z_8 + \frac{1}{2}) \mathbf{a}_3$				

$$\begin{aligned}
\mathbf{B}_{90} &= -\left(x_9 - \frac{1}{2}\right) \mathbf{a}_1 + \left(z_9 + \frac{1}{2}\right) \mathbf{a}_2 - \left(y_9 - \frac{1}{2}\right) \mathbf{a}_3 &= -a\left(x_9 - \frac{1}{2}\right) \hat{\mathbf{x}} + a\left(z_9 + \frac{1}{2}\right) \hat{\mathbf{y}} - a\left(y_9 - \frac{1}{2}\right) \hat{\mathbf{z}} &(24i) &\quad \text{N II} \\
\mathbf{B}_{91} &= -\left(x_9 - \frac{1}{2}\right) \mathbf{a}_1 - \left(z_9 - \frac{1}{2}\right) \mathbf{a}_2 + \left(y_9 + \frac{1}{2}\right) \mathbf{a}_3 &= -a\left(x_9 - \frac{1}{2}\right) \hat{\mathbf{x}} - a\left(z_9 - \frac{1}{2}\right) \hat{\mathbf{y}} + a\left(y_9 + \frac{1}{2}\right) \hat{\mathbf{z}} &(24i) &\quad \text{N II} \\
\mathbf{B}_{92} &= \left(x_9 + \frac{1}{2}\right) \mathbf{a}_1 - \left(z_9 - \frac{1}{2}\right) \mathbf{a}_2 - \left(y_9 - \frac{1}{2}\right) \mathbf{a}_3 &= a\left(x_9 + \frac{1}{2}\right) \hat{\mathbf{x}} - a\left(z_9 - \frac{1}{2}\right) \hat{\mathbf{y}} - a\left(y_9 - \frac{1}{2}\right) \hat{\mathbf{z}} &(24i) &\quad \text{N II} \\
\mathbf{B}_{93} &= \left(z_9 + \frac{1}{2}\right) \mathbf{a}_1 + \left(y_9 + \frac{1}{2}\right) \mathbf{a}_2 + \left(x_9 + \frac{1}{2}\right) \mathbf{a}_3 &= a\left(z_9 + \frac{1}{2}\right) \hat{\mathbf{x}} + a\left(y_9 + \frac{1}{2}\right) \hat{\mathbf{y}} + a\left(x_9 + \frac{1}{2}\right) \hat{\mathbf{z}} &(24i) &\quad \text{N II} \\
\mathbf{B}_{94} &= \left(z_9 + \frac{1}{2}\right) \mathbf{a}_1 - \left(y_9 - \frac{1}{2}\right) \mathbf{a}_2 - \left(x_9 - \frac{1}{2}\right) \mathbf{a}_3 &= a\left(z_9 + \frac{1}{2}\right) \hat{\mathbf{x}} - a\left(y_9 - \frac{1}{2}\right) \hat{\mathbf{y}} - a\left(x_9 - \frac{1}{2}\right) \hat{\mathbf{z}} &(24i) &\quad \text{N II} \\
\mathbf{B}_{95} &= -\left(z_9 - \frac{1}{2}\right) \mathbf{a}_1 + \left(y_9 + \frac{1}{2}\right) \mathbf{a}_2 - \left(x_9 - \frac{1}{2}\right) \mathbf{a}_3 &= -a\left(z_9 - \frac{1}{2}\right) \hat{\mathbf{x}} + a\left(y_9 + \frac{1}{2}\right) \hat{\mathbf{y}} - a\left(x_9 - \frac{1}{2}\right) \hat{\mathbf{z}} &(24i) &\quad \text{N II} \\
\mathbf{B}_{96} &= -\left(z_9 - \frac{1}{2}\right) \mathbf{a}_1 - \left(y_9 - \frac{1}{2}\right) \mathbf{a}_2 + \left(x_9 + \frac{1}{2}\right) \mathbf{a}_3 &= -a\left(z_9 - \frac{1}{2}\right) \hat{\mathbf{x}} - a\left(y_9 - \frac{1}{2}\right) \hat{\mathbf{y}} + a\left(x_9 + \frac{1}{2}\right) \hat{\mathbf{z}} &(24i) &\quad \text{N II}
\end{aligned}$$

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