# $Te[OH]_6$ Structure (*Obsolete*): A6B_cF224_228_h_c-001

This structure originally had the label `A6B_cF224_228_h_c`. Calls to that address will be redirected here.

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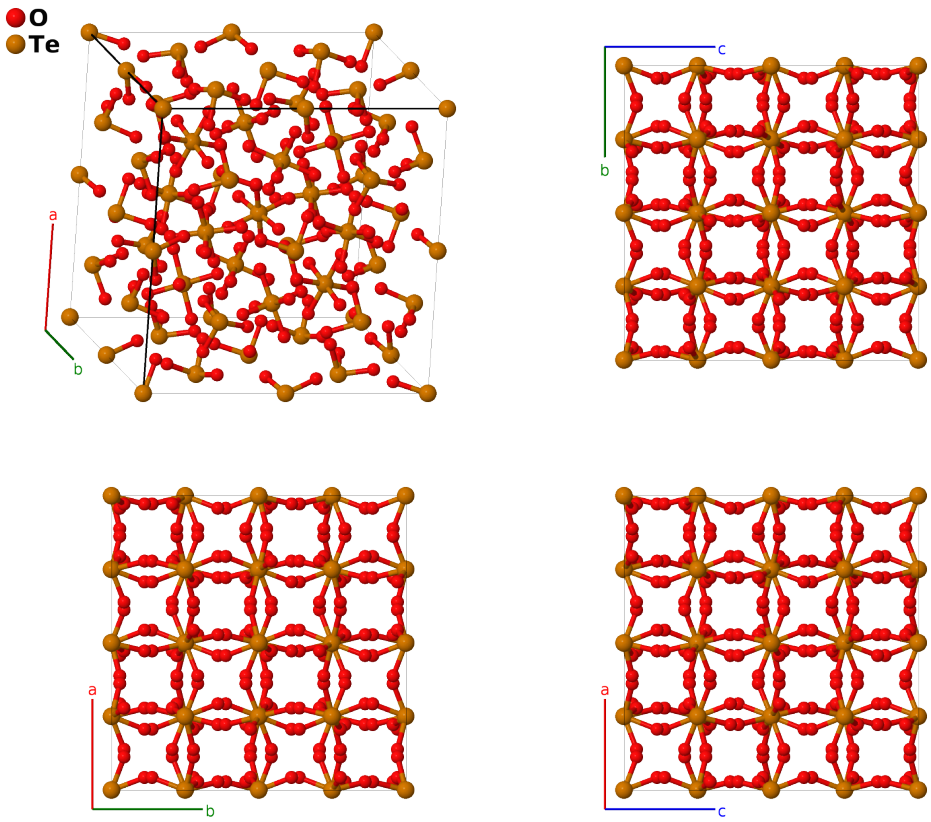
https://aflow.org/p/MSL9

https://aflow.org/p/A6B_cF224_228_h_c-001

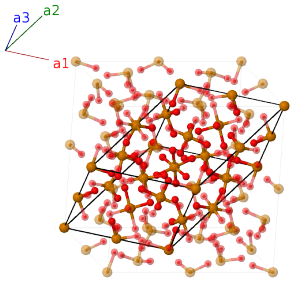



| | |
|---|---|
| **Prototype** | $H_6O_6Te$ |
| **AFLOW prototype label** | A6B_cF224_228_h_c-001 |
| **ICSD** | none |
| **Pearson symbol** | cF224 |
| **Space group number** | 228 |
| **Space group symbol** | $Fd\bar{3}c$ |
| **AFLOW prototype command** | `aflow --proto=A6B_cF224_228_h_c-001 --params=`$a, x_2, y_2, z_2$ |

- (Kirckpatrick, 1926) did not find the locations of the hydrogen atoms. When these were located by (Mullica, 1980) it was found that the true structure is in space group $F4_132$ #210.

**Face-centered Cubic primitive vectors**

$$
\begin{aligned}
\mathbf{a_1} &= \tfrac{1}{2}a\,\hat{\mathbf{y}} + \tfrac{1}{2}a\,\hat{\mathbf{z}} \\
\mathbf{a_2} &= \tfrac{1}{2}a\,\hat{\mathbf{x}} + \tfrac{1}{2}a\,\hat{\mathbf{z}} \\
\mathbf{a_3} &= \tfrac{1}{2}a\,\hat{\mathbf{x}} + \tfrac{1}{2}a\,\hat{\mathbf{y}}
\end{aligned}
$$




**Basis vectors**

| | | Lattice coordinates | | Cartesian coordinates | Wyckoff position | Atom type |
|---|---|---|---|---|---|---|
| $\mathbf{B_1}$ | = | $0$ | = | $0$ | (32c) | Te I |
| $\mathbf{B_2}$ | = | $\frac{1}{2}\,\mathbf{a}_3$ | = | $\frac{1}{4}a\,\hat{\mathbf{x}} + \frac{1}{4}a\,\hat{\mathbf{y}}$ | (32c) | Te I |
| $\mathbf{B_3}$ | = | $\frac{1}{2}\,\mathbf{a}_2$ | = | $\frac{1}{4}a\,\hat{\mathbf{x}} + \frac{1}{4}a\,\hat{\mathbf{z}}$ | (32c) | Te I |
| $\mathbf{B_4}$ | = | $\frac{1}{2}\,\mathbf{a}_1$ | = | $\frac{1}{4}a\,\hat{\mathbf{y}} + \frac{1}{4}a\,\hat{\mathbf{z}}$ | (32c) | Te I |
| $\mathbf{B_5}$ | = | $\frac{1}{2}\,\mathbf{a}_1 + \frac{1}{2}\,\mathbf{a}_2$ | = | $\frac{1}{4}a\,\hat{\mathbf{x}} + \frac{1}{4}a\,\hat{\mathbf{y}} + \frac{1}{2}a\,\hat{\mathbf{z}}$ | (32c) | Te I |
| $\mathbf{B_6}$ | = | $\frac{1}{2}\,\mathbf{a}_1 + \frac{1}{2}\,\mathbf{a}_2 + \frac{1}{2}\,\mathbf{a}_3$ | = | $\frac{1}{2}a\,\hat{\mathbf{x}} + \frac{1}{2}a\,\hat{\mathbf{y}} + \frac{1}{2}a\,\hat{\mathbf{z}}$ | (32c) | Te I |
| $\mathbf{B_7}$ | = | $\frac{1}{2}\,\mathbf{a}_1 + \frac{1}{2}\,\mathbf{a}_3$ | = | $\frac{1}{4}a\,\hat{\mathbf{x}} + \frac{1}{2}a\,\hat{\mathbf{y}} + \frac{1}{4}a\,\hat{\mathbf{z}}$ | (32c) | Te I |
| $\mathbf{B_8}$ | = | $\frac{1}{2}\,\mathbf{a}_2 + \frac{1}{2}\,\mathbf{a}_3$ | = | $\frac{1}{2}a\,\hat{\mathbf{x}} + \frac{1}{4}a\,\hat{\mathbf{y}} + \frac{1}{4}a\,\hat{\mathbf{z}}$ | (32c) | Te I |
| $\mathbf{B_9}$ | = | $(-x_2 + y_2 + z_2)\,\mathbf{a}_1 + (x_2 - y_2 + z_2)\,\mathbf{a}_2 + (x_2 + y_2 - z_2)\,\mathbf{a}_3$ | = | $ax_2\,\hat{\mathbf{x}} + ay_2\,\hat{\mathbf{y}} + az_2\,\hat{\mathbf{z}}$ | (192h) | O I |
| $\mathbf{B_{10}}$ | = | $(x_2 - y_2 + z_2)\,\mathbf{a}_1 + (-x_2 + y_2 + z_2)\,\mathbf{a}_2 - \left(x_2 + y_2 + z_2 - \frac{1}{2}\right)\,\mathbf{a}_3$ | = | $-a\left(x_2 - \frac{1}{4}\right)\,\hat{\mathbf{x}} - a\left(y_2 - \frac{1}{4}\right)\,\hat{\mathbf{y}} + az_2\,\hat{\mathbf{z}}$ | (192h) | O I |
| $\mathbf{B_{11}}$ | = | $(x_2 + y_2 - z_2)\,\mathbf{a}_1 - \left(x_2 + y_2 + z_2 - \frac{1}{2}\right)\,\mathbf{a}_2 + (-x_2 + y_2 + z_2)\,\mathbf{a}_3$ | = | $-a\left(x_2 - \frac{1}{4}\right)\,\hat{\mathbf{x}} + ay_2\,\hat{\mathbf{y}} - a\left(z_2 - \frac{1}{4}\right)\,\hat{\mathbf{z}}$ | (192h) | O I |
| $\mathbf{B_{12}}$ | = | $-\left(x_2 + y_2 + z_2 - \frac{1}{2}\right)\,\mathbf{a}_1 + (x_2 + y_2 - z_2)\,\mathbf{a}_2 + (x_2 - y_2 + z_2)\,\mathbf{a}_3$ | = | $ax_2\,\hat{\mathbf{x}} - a\left(y_2 - \frac{1}{4}\right)\,\hat{\mathbf{y}} - a\left(z_2 - \frac{1}{4}\right)\,\hat{\mathbf{z}}$ | (192h) | O I |
| $\mathbf{B_{13}}$ | = | $(x_2 + y_2 - z_2)\,\mathbf{a}_1 + (-x_2 + y_2 + z_2)\,\mathbf{a}_2 + (x_2 - y_2 + z_2)\,\mathbf{a}_3$ | = | $az_2\,\hat{\mathbf{x}} + ax_2\,\hat{\mathbf{y}} + ay_2\,\hat{\mathbf{z}}$ | (192h) | O I |
| $\mathbf{B_{14}}$ | = | $-\left(x_2 + y_2 + z_2 - \frac{1}{2}\right)\,\mathbf{a}_1 + (x_2 - y_2 + z_2)\,\mathbf{a}_2 + (-x_2 + y_2 + z_2)\,\mathbf{a}_3$ | = | $az_2\,\hat{\mathbf{x}} - a\left(x_2 - \frac{1}{4}\right)\,\hat{\mathbf{y}} - a\left(y_2 - \frac{1}{4}\right)\,\hat{\mathbf{z}}$ | (192h) | O I |
| $\mathbf{B_{15}}$ | = | $(-x_2 + y_2 + z_2)\,\mathbf{a}_1 + (x_2 + y_2 - z_2)\,\mathbf{a}_2 - \left(x_2 + y_2 + z_2 - \frac{1}{2}\right)\,\mathbf{a}_3$ | = | $-a\left(z_2 - \frac{1}{4}\right)\,\hat{\mathbf{x}} - a\left(x_2 - \frac{1}{4}\right)\,\hat{\mathbf{y}} + ay_2\,\hat{\mathbf{z}}$ | (192h) | O I |
| $\mathbf{B_{16}}$ | = | $(x_2 - y_2 + z_2)\,\mathbf{a}_1 - \left(x_2 + y_2 + z_2 - \frac{1}{2}\right)\,\mathbf{a}_2 + (x_2 + y_2 - z_2)\,\mathbf{a}_3$ | = | $-a\left(z_2 - \frac{1}{4}\right)\,\hat{\mathbf{x}} + ax_2\,\hat{\mathbf{y}} - a\left(y_2 - \frac{1}{4}\right)\,\hat{\mathbf{z}}$ | (192h) | O I |

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|---|---|---|---|---|---|---|
| $\mathbf{B_{17}}$ | = | $(x_2 - y_2 + z_2)\ \mathbf{a}_1 +$<br>$(x_2 + y_2 - z_2)\ \mathbf{a}_2 +$<br>$(-x_2 + y_2 + z_2)\ \mathbf{a}_3$ | = | $ay_2\,\hat{\mathbf{x}} + az_2\,\hat{\mathbf{y}} + ax_2\,\hat{\mathbf{z}}$ | (192h) | O I |
| $\mathbf{B_{18}}$ | = | $(-x_2 + y_2 + z_2)\ \mathbf{a}_1 -$<br>$\left(x_2 + y_2 + z_2 - \frac{1}{2}\right)\ \mathbf{a}_2 +$<br>$(x_2 - y_2 + z_2)\ \mathbf{a}_3$ | = | $-a\left(y_2 - \frac{1}{4}\right)\,\hat{\mathbf{x}} + az_2\,\hat{\mathbf{y}} - a\left(x_2 - \frac{1}{4}\right)\,\hat{\mathbf{z}}$ | (192h) | O I |
| $\mathbf{B_{19}}$ | = | $-\left(x_2 + y_2 + z_2 - \frac{1}{2}\right)\ \mathbf{a}_1 +$<br>$(-x_2 + y_2 + z_2)\ \mathbf{a}_2 +$<br>$(x_2 + y_2 - z_2)\ \mathbf{a}_3$ | = | $ay_2\,\hat{\mathbf{x}} - a\left(z_2 - \frac{1}{4}\right)\,\hat{\mathbf{y}} - a\left(x_2 - \frac{1}{4}\right)\,\hat{\mathbf{z}}$ | (192h) | O I |
| $\mathbf{B_{20}}$ | = | $(x_2 + y_2 - z_2)\ \mathbf{a}_1 +$<br>$(x_2 - y_2 + z_2)\ \mathbf{a}_2 -$<br>$\left(x_2 + y_2 + z_2 - \frac{1}{2}\right)\ \mathbf{a}_3$ | = | $-a\left(y_2 - \frac{1}{4}\right)\,\hat{\mathbf{x}} - a\left(z_2 - \frac{1}{4}\right)\,\hat{\mathbf{y}} + ax_2\,\hat{\mathbf{z}}$ | (192h) | O I |
| $\mathbf{B_{21}}$ | = | $\left(x_2 - y_2 - z_2 + \frac{1}{2}\right)\ \mathbf{a}_1 -$<br>$\left(x_2 - y_2 + z_2 - \frac{1}{2}\right)\ \mathbf{a}_2 +$<br>$(x_2 + y_2 + z_2)\ \mathbf{a}_3$ | = | $a\left(y_2 + \frac{1}{4}\right)\,\hat{\mathbf{x}} + a\left(x_2 + \frac{1}{4}\right)\,\hat{\mathbf{y}} - a\left(z_2 - \frac{1}{2}\right)\,\hat{\mathbf{z}}$ | (192h) | O I |
| $\mathbf{B_{22}}$ | = | $-\left(x_2 - y_2 + z_2 - \frac{1}{2}\right)\ \mathbf{a}_1 +$<br>$\left(x_2 - y_2 - z_2 + \frac{1}{2}\right)\ \mathbf{a}_2 -$<br>$\left(x_2 + y_2 - z_2 - \frac{1}{2}\right)\ \mathbf{a}_3$ | = | $-a\left(y_2 - \frac{1}{2}\right)\,\hat{\mathbf{x}} - a\left(x_2 - \frac{1}{2}\right)\,\hat{\mathbf{y}} - a\left(z_2 - \frac{1}{2}\right)\,\hat{\mathbf{z}}$ | (192h) | O I |
| $\mathbf{B_{23}}$ | = | $-\left(x_2 + y_2 - z_2 - \frac{1}{2}\right)\ \mathbf{a}_1 +$<br>$(x_2 + y_2 + z_2)\ \mathbf{a}_2 -$<br>$\left(x_2 - y_2 + z_2 - \frac{1}{2}\right)\ \mathbf{a}_3$ | = | $a\left(y_2 + \frac{1}{4}\right)\,\hat{\mathbf{x}} - a\left(x_2 - \frac{1}{2}\right)\,\hat{\mathbf{y}} + a\left(z_2 + \frac{1}{4}\right)\,\hat{\mathbf{z}}$ | (192h) | O I |
| $\mathbf{B_{24}}$ | = | $(x_2 + y_2 + z_2)\ \mathbf{a}_1 -$<br>$\left(x_2 + y_2 - z_2 - \frac{1}{2}\right)\ \mathbf{a}_2 +$<br>$\left(x_2 - y_2 - z_2 + \frac{1}{2}\right)\ \mathbf{a}_3$ | = | $-a\left(y_2 - \frac{1}{2}\right)\,\hat{\mathbf{x}} + a\left(x_2 + \frac{1}{4}\right)\,\hat{\mathbf{y}} + a\left(z_2 + \frac{1}{4}\right)\,\hat{\mathbf{z}}$ | (192h) | O I |
| $\mathbf{B_{25}}$ | = | $-\left(x_2 + y_2 - z_2 - \frac{1}{2}\right)\ \mathbf{a}_1 +$<br>$\left(x_2 - y_2 - z_2 + \frac{1}{2}\right)\ \mathbf{a}_2 +$<br>$(x_2 + y_2 + z_2)\ \mathbf{a}_3$ | = | $a\left(x_2 + \frac{1}{4}\right)\,\hat{\mathbf{x}} + a\left(z_2 + \frac{1}{4}\right)\,\hat{\mathbf{y}} - a\left(y_2 - \frac{1}{2}\right)\,\hat{\mathbf{z}}$ | (192h) | O I |
| $\mathbf{B_{26}}$ | = | $(x_2 + y_2 + z_2)\ \mathbf{a}_1 -$<br>$\left(x_2 - y_2 + z_2 - \frac{1}{2}\right)\ \mathbf{a}_2 -$<br>$\left(x_2 + y_2 - z_2 - \frac{1}{2}\right)\ \mathbf{a}_3$ | = | $-a\left(x_2 - \frac{1}{2}\right)\,\hat{\mathbf{x}} + a\left(z_2 + \frac{1}{4}\right)\,\hat{\mathbf{y}} + a\left(y_2 + \frac{1}{4}\right)\,\hat{\mathbf{z}}$ | (192h) | O I |
| $\mathbf{B_{27}}$ | = | $\left(x_2 - y_2 - z_2 + \frac{1}{2}\right)\ \mathbf{a}_1 -$<br>$\left(x_2 + y_2 - z_2 - \frac{1}{2}\right)\ \mathbf{a}_2 -$<br>$\left(x_2 - y_2 + z_2 - \frac{1}{2}\right)\ \mathbf{a}_3$ | = | $-a\left(x_2 - \frac{1}{2}\right)\,\hat{\mathbf{x}} - a\left(z_2 - \frac{1}{2}\right)\,\hat{\mathbf{y}} - a\left(y_2 - \frac{1}{2}\right)\,\hat{\mathbf{z}}$ | (192h) | O I |
| $\mathbf{B_{28}}$ | = | $-\left(x_2 - y_2 + z_2 - \frac{1}{2}\right)\ \mathbf{a}_1 +$<br>$(x_2 + y_2 + z_2)\ \mathbf{a}_2 +$<br>$\left(x_2 - y_2 - z_2 + \frac{1}{2}\right)\ \mathbf{a}_3$ | = | $a\left(x_2 + \frac{1}{4}\right)\,\hat{\mathbf{x}} - a\left(z_2 - \frac{1}{2}\right)\,\hat{\mathbf{y}} + a\left(y_2 + \frac{1}{4}\right)\,\hat{\mathbf{z}}$ | (192h) | O I |
| $\mathbf{B_{29}}$ | = | $-\left(x_2 - y_2 + z_2 - \frac{1}{2}\right)\ \mathbf{a}_1 -$<br>$\left(x_2 + y_2 - z_2 - \frac{1}{2}\right)\ \mathbf{a}_2 +$<br>$(x_2 + y_2 + z_2)\ \mathbf{a}_3$ | = | $a\left(z_2 + \frac{1}{4}\right)\,\hat{\mathbf{x}} + a\left(y_2 + \frac{1}{4}\right)\,\hat{\mathbf{y}} - a\left(x_2 - \frac{1}{2}\right)\,\hat{\mathbf{z}}$ | (192h) | O I |
| $\mathbf{B_{30}}$ | = | $\left(x_2 - y_2 - z_2 + \frac{1}{2}\right)\ \mathbf{a}_1 +$<br>$(x_2 + y_2 + z_2)\ \mathbf{a}_2 -$<br>$\left(x_2 + y_2 - z_2 - \frac{1}{2}\right)\ \mathbf{a}_3$ | = | $a\left(z_2 + \frac{1}{4}\right)\,\hat{\mathbf{x}} - a\left(y_2 - \frac{1}{2}\right)\,\hat{\mathbf{y}} + a\left(x_2 + \frac{1}{4}\right)\,\hat{\mathbf{z}}$ | (192h) | O I |
| $\mathbf{B_{31}}$ | = | $(x_2 + y_2 + z_2)\ \mathbf{a}_1 +$<br>$\left(x_2 - y_2 - z_2 + \frac{1}{2}\right)\ \mathbf{a}_2 -$<br>$\left(x_2 - y_2 + z_2 - \frac{1}{2}\right)\ \mathbf{a}_3$ | = | $-a\left(z_2 - \frac{1}{2}\right)\,\hat{\mathbf{x}} + a\left(y_2 + \frac{1}{4}\right)\,\hat{\mathbf{y}} + a\left(x_2 + \frac{1}{4}\right)\,\hat{\mathbf{z}}$ | (192h) | O I |
| $\mathbf{B_{32}}$ | = | $-\left(x_2 + y_2 - z_2 - \frac{1}{2}\right)\ \mathbf{a}_1 -$<br>$\left(x_2 - y_2 + z_2 - \frac{1}{2}\right)\ \mathbf{a}_2 +$<br>$\left(x_2 - y_2 - z_2 + \frac{1}{2}\right)\ \mathbf{a}_3$ | = | $-a\left(z_2 - \frac{1}{2}\right)\,\hat{\mathbf{x}} - a\left(y_2 - \frac{1}{2}\right)\,\hat{\mathbf{y}} - a\left(x_2 - \frac{1}{2}\right)\,\hat{\mathbf{z}}$ | (192h) | O I |

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| $\mathbf{B_{33}}$ | $=$ | $(x_2 - y_2 - z_2)\ \mathbf{a}_1 - (x_2 - y_2 + z_2)\ \mathbf{a}_2 - (x_2 + y_2 - z_2)\ \mathbf{a}_3$ | $=$ | $-ax_2\,\hat{\mathbf{x}} - ay_2\,\hat{\mathbf{y}} - az_2\,\hat{\mathbf{z}}$ | (192h) | O I |
| $\mathbf{B_{34}}$ | $=$ | $-(x_2 - y_2 + z_2)\ \mathbf{a}_1 + (x_2 - y_2 - z_2)\ \mathbf{a}_2 + \left(x_2 + y_2 + z_2 + \frac{1}{2}\right)\ \mathbf{a}_3$ | $=$ | $a\left(x_2 + \frac{1}{4}\right)\,\hat{\mathbf{x}} + a\left(y_2 + \frac{1}{4}\right)\,\hat{\mathbf{y}} - az_2\,\hat{\mathbf{z}}$ | (192h) | O I |
| $\mathbf{B_{35}}$ | $=$ | $-(x_2 + y_2 - z_2)\ \mathbf{a}_1 + \left(x_2 + y_2 + z_2 + \frac{1}{2}\right)\ \mathbf{a}_2 + (x_2 - y_2 - z_2)\ \mathbf{a}_3$ | $=$ | $a\left(x_2 + \frac{1}{4}\right)\,\hat{\mathbf{x}} - ay_2\,\hat{\mathbf{y}} + a\left(z_2 + \frac{1}{4}\right)\,\hat{\mathbf{z}}$ | (192h) | O I |
| $\mathbf{B_{36}}$ | $=$ | $\left(x_2 + y_2 + z_2 + \frac{1}{2}\right)\ \mathbf{a}_1 - (x_2 + y_2 - z_2)\ \mathbf{a}_2 - (x_2 - y_2 + z_2)\ \mathbf{a}_3$ | $=$ | $-ax_2\,\hat{\mathbf{x}} + a\left(y_2 + \frac{1}{4}\right)\,\hat{\mathbf{y}} + a\left(z_2 + \frac{1}{4}\right)\,\hat{\mathbf{z}}$ | (192h) | O I |
| $\mathbf{B_{37}}$ | $=$ | $-(x_2 + y_2 - z_2)\ \mathbf{a}_1 + (x_2 - y_2 - z_2)\ \mathbf{a}_2 - (x_2 - y_2 + z_2)\ \mathbf{a}_3$ | $=$ | $-az_2\,\hat{\mathbf{x}} - ax_2\,\hat{\mathbf{y}} - ay_2\,\hat{\mathbf{z}}$ | (192h) | O I |
| $\mathbf{B_{38}}$ | $=$ | $\left(x_2 + y_2 + z_2 + \frac{1}{2}\right)\ \mathbf{a}_1 - (x_2 - y_2 + z_2)\ \mathbf{a}_2 + (x_2 - y_2 - z_2)\ \mathbf{a}_3$ | $=$ | $-az_2\,\hat{\mathbf{x}} + a\left(x_2 + \frac{1}{4}\right)\,\hat{\mathbf{y}} + a\left(y_2 + \frac{1}{4}\right)\,\hat{\mathbf{z}}$ | (192h) | O I |
| $\mathbf{B_{39}}$ | $=$ | $(x_2 - y_2 - z_2)\ \mathbf{a}_1 - (x_2 + y_2 - z_2)\ \mathbf{a}_2 + \left(x_2 + y_2 + z_2 + \frac{1}{2}\right)\ \mathbf{a}_3$ | $=$ | $a\left(z_2 + \frac{1}{4}\right)\,\hat{\mathbf{x}} + a\left(x_2 + \frac{1}{4}\right)\,\hat{\mathbf{y}} - ay_2\,\hat{\mathbf{z}}$ | (192h) | O I |
| $\mathbf{B_{40}}$ | $=$ | $-(x_2 - y_2 + z_2)\ \mathbf{a}_1 + \left(x_2 + y_2 + z_2 + \frac{1}{2}\right)\ \mathbf{a}_2 - (x_2 + y_2 - z_2)\ \mathbf{a}_3$ | $=$ | $a\left(z_2 + \frac{1}{4}\right)\,\hat{\mathbf{x}} - ax_2\,\hat{\mathbf{y}} + a\left(y_2 + \frac{1}{4}\right)\,\hat{\mathbf{z}}$ | (192h) | O I |
| $\mathbf{B_{41}}$ | $=$ | $-(x_2 - y_2 + z_2)\ \mathbf{a}_1 - (x_2 + y_2 - z_2)\ \mathbf{a}_2 + (x_2 - y_2 - z_2)\ \mathbf{a}_3$ | $=$ | $-ay_2\,\hat{\mathbf{x}} - az_2\,\hat{\mathbf{y}} - ax_2\,\hat{\mathbf{z}}$ | (192h) | O I |
| $\mathbf{B_{42}}$ | $=$ | $(x_2 - y_2 - z_2)\ \mathbf{a}_1 + \left(x_2 + y_2 + z_2 + \frac{1}{2}\right)\ \mathbf{a}_2 - (x_2 - y_2 + z_2)\ \mathbf{a}_3$ | $=$ | $a\left(y_2 + \frac{1}{4}\right)\,\hat{\mathbf{x}} - az_2\,\hat{\mathbf{y}} + a\left(x_2 + \frac{1}{4}\right)\,\hat{\mathbf{z}}$ | (192h) | O I |
| $\mathbf{B_{43}}$ | $=$ | $\left(x_2 + y_2 + z_2 + \frac{1}{2}\right)\ \mathbf{a}_1 + (x_2 - y_2 - z_2)\ \mathbf{a}_2 - (x_2 + y_2 - z_2)\ \mathbf{a}_3$ | $=$ | $-ay_2\,\hat{\mathbf{x}} + a\left(z_2 + \frac{1}{4}\right)\,\hat{\mathbf{y}} + a\left(x_2 + \frac{1}{4}\right)\,\hat{\mathbf{z}}$ | (192h) | O I |
| $\mathbf{B_{44}}$ | $=$ | $-(x_2 + y_2 - z_2)\ \mathbf{a}_1 - (x_2 - y_2 + z_2)\ \mathbf{a}_2 + \left(x_2 + y_2 + z_2 + \frac{1}{2}\right)\ \mathbf{a}_3$ | $=$ | $a\left(y_2 + \frac{1}{4}\right)\,\hat{\mathbf{x}} + a\left(z_2 + \frac{1}{4}\right)\,\hat{\mathbf{y}} - ax_2\,\hat{\mathbf{z}}$ | (192h) | O I |
| $\mathbf{B_{45}}$ | $=$ | $\left(-x_2 + y_2 + z_2 + \frac{1}{2}\right)\ \mathbf{a}_1 + \left(x_2 - y_2 + z_2 + \frac{1}{2}\right)\ \mathbf{a}_2 - (x_2 + y_2 + z_2)\ \mathbf{a}_3$ | $=$ | $-a\left(y_2 - \frac{1}{4}\right)\,\hat{\mathbf{x}} - a\left(x_2 - \frac{1}{4}\right)\,\hat{\mathbf{y}} + a\left(z_2 + \frac{1}{2}\right)\,\hat{\mathbf{z}}$ | (192h) | O I |
| $\mathbf{B_{46}}$ | $=$ | $\left(x_2 - y_2 + z_2 + \frac{1}{2}\right)\ \mathbf{a}_1 + \left(-x_2 + y_2 + z_2 + \frac{1}{2}\right)\ \mathbf{a}_2 + \left(x_2 + y_2 - z_2 + \frac{1}{2}\right)\ \mathbf{a}_3$ | $=$ | $a\left(y_2 + \frac{1}{2}\right)\,\hat{\mathbf{x}} + a\left(x_2 + \frac{1}{2}\right)\,\hat{\mathbf{y}} + a\left(z_2 + \frac{1}{2}\right)\,\hat{\mathbf{z}}$ | (192h) | O I |
| $\mathbf{B_{47}}$ | $=$ | $\left(x_2 + y_2 - z_2 + \frac{1}{2}\right)\ \mathbf{a}_1 - (x_2 + y_2 + z_2)\ \mathbf{a}_2 + \left(x_2 - y_2 + z_2 + \frac{1}{2}\right)\ \mathbf{a}_3$ | $=$ | $-a\left(y_2 - \frac{1}{4}\right)\,\hat{\mathbf{x}} + a\left(x_2 + \frac{1}{2}\right)\,\hat{\mathbf{y}} - a\left(z_2 - \frac{1}{4}\right)\,\hat{\mathbf{z}}$ | (192h) | O I |
| $\mathbf{B_{48}}$ | $=$ | $-(x_2 + y_2 + z_2)\ \mathbf{a}_1 + \left(x_2 + y_2 - z_2 + \frac{1}{2}\right)\ \mathbf{a}_2 + \left(-x_2 + y_2 + z_2 + \frac{1}{2}\right)\ \mathbf{a}_3$ | $=$ | $a\left(y_2 + \frac{1}{2}\right)\,\hat{\mathbf{x}} - a\left(x_2 - \frac{1}{4}\right)\,\hat{\mathbf{y}} - a\left(z_2 - \frac{1}{4}\right)\,\hat{\mathbf{z}}$ | (192h) | O I |
| $\mathbf{B_{49}}$ | $=$ | $\left(x_2 + y_2 - z_2 + \frac{1}{2}\right)\ \mathbf{a}_1 + \left(-x_2 + y_2 + z_2 + \frac{1}{2}\right)\ \mathbf{a}_2 - (x_2 + y_2 + z_2)\ \mathbf{a}_3$ | $=$ | $-a\left(x_2 - \frac{1}{4}\right)\,\hat{\mathbf{x}} - a\left(z_2 - \frac{1}{4}\right)\,\hat{\mathbf{y}} + a\left(y_2 + \frac{1}{2}\right)\,\hat{\mathbf{z}}$ | (192h) | O I |

$$\mathbf{B_{50}} = -(x_2+y_2+z_2)\,\mathbf{a}_1+\left(x_2-y_2+z_2+\tfrac{1}{2}\right)\mathbf{a}_2+\left(x_2+y_2-z_2+\tfrac{1}{2}\right)\mathbf{a}_3 = a\left(x_2+\tfrac{1}{2}\right)\hat{\mathbf{x}}-a\left(z_2-\tfrac{1}{4}\right)\hat{\mathbf{y}}-a\left(y_2-\tfrac{1}{4}\right)\hat{\mathbf{z}} \quad (192\text{h}) \quad \text{O I}$$

$$\mathbf{B_{51}} = \left(-x_2+y_2+z_2+\tfrac{1}{2}\right)\mathbf{a}_1+\left(x_2+y_2-z_2+\tfrac{1}{2}\right)\mathbf{a}_2+\left(x_2-y_2+z_2+\tfrac{1}{2}\right)\mathbf{a}_3 = a\left(x_2+\tfrac{1}{2}\right)\hat{\mathbf{x}}+a\left(z_2+\tfrac{1}{2}\right)\hat{\mathbf{y}}+a\left(y_2+\tfrac{1}{2}\right)\hat{\mathbf{z}} \quad (192\text{h}) \quad \text{O I}$$

$$\mathbf{B_{52}} = \left(x_2-y_2+z_2+\tfrac{1}{2}\right)\mathbf{a}_1-(x_2+y_2+z_2)\,\mathbf{a}_2+\left(-x_2+y_2+z_2+\tfrac{1}{2}\right)\mathbf{a}_3 = -a\left(x_2-\tfrac{1}{4}\right)\hat{\mathbf{x}}+a\left(z_2+\tfrac{1}{2}\right)\hat{\mathbf{y}}-a\left(y_2-\tfrac{1}{4}\right)\hat{\mathbf{z}} \quad (192\text{h}) \quad \text{O I}$$

$$\mathbf{B_{53}} = \left(x_2-y_2+z_2+\tfrac{1}{2}\right)\mathbf{a}_1+\left(x_2+y_2-z_2+\tfrac{1}{2}\right)\mathbf{a}_2-(x_2+y_2+z_2)\,\mathbf{a}_3 = -a\left(z_2-\tfrac{1}{4}\right)\hat{\mathbf{x}}-a\left(y_2-\tfrac{1}{4}\right)\hat{\mathbf{y}}+a\left(x_2+\tfrac{1}{2}\right)\hat{\mathbf{z}} \quad (192\text{h}) \quad \text{O I}$$

$$\mathbf{B_{54}} = \left(-x_2+y_2+z_2+\tfrac{1}{2}\right)\mathbf{a}_1-(x_2+y_2+z_2)\,\mathbf{a}_2+\left(x_2+y_2-z_2+\tfrac{1}{2}\right)\mathbf{a}_3 = -a\left(z_2-\tfrac{1}{4}\right)\hat{\mathbf{x}}+a\left(y_2+\tfrac{1}{2}\right)\hat{\mathbf{y}}-a\left(x_2-\tfrac{1}{4}\right)\hat{\mathbf{z}} \quad (192\text{h}) \quad \text{O I}$$

$$\mathbf{B_{55}} = -(x_2+y_2+z_2)\,\mathbf{a}_1+\left(-x_2+y_2+z_2+\tfrac{1}{2}\right)\mathbf{a}_2+\left(x_2-y_2+z_2+\tfrac{1}{2}\right)\mathbf{a}_3 = a\left(z_2+\tfrac{1}{2}\right)\hat{\mathbf{x}}-a\left(y_2-\tfrac{1}{4}\right)\hat{\mathbf{y}}-a\left(x_2-\tfrac{1}{4}\right)\hat{\mathbf{z}} \quad (192\text{h}) \quad \text{O I}$$

$$\mathbf{B_{56}} = \left(x_2+y_2-z_2+\tfrac{1}{2}\right)\mathbf{a}_1+\left(x_2-y_2+z_2+\tfrac{1}{2}\right)\mathbf{a}_2+\left(-x_2+y_2+z_2+\tfrac{1}{2}\right)\mathbf{a}_3 = a\left(z_2+\tfrac{1}{2}\right)\hat{\mathbf{x}}+a\left(y_2+\tfrac{1}{2}\right)\hat{\mathbf{y}}+a\left(x_2+\tfrac{1}{2}\right)\hat{\mathbf{z}} \quad (192\text{h}) \quad \text{O I}$$

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