# MPG No. 37.2.152  $\bar{6}m21'$  (-62m1' setting)  [ Type II, hexagonal ]

* symmetry operation

Table 1: Symmetry operations for 3d polar vector.

| No. | tag | matrix (polar) | det | TR |
|---|---|---|---|---|
| 1 | 1 | $\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$ | 1 | 1 |
| 2 | $3^+_{001}$ | $\begin{bmatrix} 0 & -1 & 0 \\ 1 & -1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$ | 1 | 1 |
| 3 | $3^-_{001}$ | $\begin{bmatrix} -1 & 1 & 0 \\ -1 & 0 & 0 \\ 0 & 0 & 1 \end{bmatrix}$ | 1 | 1 |
| 4 | $m_{210}$ | $\begin{bmatrix} -1 & 0 & 0 \\ -1 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$ | -1 | 1 |
| 5 | $m_{120}$ | $\begin{bmatrix} 1 & -1 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$ | -1 | 1 |
| 6 | $m_{1-10}$ | $\begin{bmatrix} 0 & 1 & 0 \\ 1 & 0 & 0 \\ 0 & 0 & 1 \end{bmatrix}$ | -1 | 1 |
| 7 | $-6^+_{001}$ | $\begin{bmatrix} -1 & 1 & 0 \\ -1 & 0 & 0 \\ 0 & 0 & -1 \end{bmatrix}$ | -1 | 1 |
| 8 | $m_{001}$ | $\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & -1 \end{bmatrix}$ | -1 | 1 |
| 9 | $-6^-_{001}$ | $\begin{bmatrix} 0 & -1 & 0 \\ 1 & -1 & 0 \\ 0 & 0 & -1 \end{bmatrix}$ | -1 | 1 |
| 10 | $2_{100}$ | $\begin{bmatrix} 1 & -1 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & -1 \end{bmatrix}$ | 1 | 1 |
| 11 | $2_{110}$ | $\begin{bmatrix} 0 & 1 & 0 \\ 1 & 0 & 0 \\ 0 & 0 & -1 \end{bmatrix}$ | 1 | 1 |
| 12 | $2_{010}$ | $\begin{bmatrix} -1 & 0 & 0 \\ -1 & 1 & 0 \\ 0 & 0 & -1 \end{bmatrix}$ | 1 | 1 |
| 13 | $1'$ | $\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$ | 1 | -1 |

*continued ...*

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Table 1

| No. | tag | matrix (polar) | det | TR |
|-----|-----|----------------|-----|----|
| 14 | $3_{001}^{+}{}'$ | $\begin{bmatrix} 0 & -1 & 0 \\ 1 & -1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$ | 1 | -1 |
| 15 | $3_{001}^{-}{}'$ | $\begin{bmatrix} -1 & 1 & 0 \\ -1 & 0 & 0 \\ 0 & 0 & 1 \end{bmatrix}$ | 1 | -1 |
| 16 | $m_{210}'$ | $\begin{bmatrix} -1 & 0 & 0 \\ -1 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$ | -1 | -1 |
| 17 | $m_{120}'$ | $\begin{bmatrix} 1 & -1 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$ | -1 | -1 |
| 18 | $m_{1-10}'$ | $\begin{bmatrix} 0 & 1 & 0 \\ 1 & 0 & 0 \\ 0 & 0 & 1 \end{bmatrix}$ | -1 | -1 |
| 19 | $-6_{001}^{+}{}'$ | $\begin{bmatrix} -1 & 1 & 0 \\ -1 & 0 & 0 \\ 0 & 0 & -1 \end{bmatrix}$ | -1 | -1 |
| 20 | $m_{001}'$ | $\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & -1 \end{bmatrix}$ | -1 | -1 |
| 21 | $-6_{001}^{-}{}'$ | $\begin{bmatrix} 0 & -1 & 0 \\ 1 & -1 & 0 \\ 0 & 0 & -1 \end{bmatrix}$ | -1 | -1 |
| 22 | $2_{100}'$ | $\begin{bmatrix} 1 & -1 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & -1 \end{bmatrix}$ | 1 | -1 |
| 23 | $2_{110}'$ | $\begin{bmatrix} 0 & 1 & 0 \\ 1 & 0 & 0 \\ 0 & 0 & -1 \end{bmatrix}$ | 1 | -1 |
| 24 | $2_{010}'$ | $\begin{bmatrix} -1 & 0 & 0 \\ -1 & 1 & 0 \\ 0 & 0 & -1 \end{bmatrix}$ | 1 | -1 |