

PG No. 35  $C_{3v}(1)$   $3m$  (31m setting) [ trigonal ]

\* generator :  $3_{001}^+$ ,  $m_{1-10}$

\* conjugacy class

[1] : 1  
 $[3_{001}^+]$  :  $3_{001}^+$ ,  $3_{001}^-$   
 $[m_{120}]$  :  $m_{120}$ ,  $m_{210}$ ,  $m_{1-10}$

\* symmetry operation

Table 1: Symmetry operations for 3d polar vector.

No.	tag	matrix (polar)	det
1	1	$\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$	1
2	$3_{001}^+$	$\begin{bmatrix} 0 & -1 & 0 \\ 1 & -1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$	1
3	$3_{001}^-$	$\begin{bmatrix} -1 & 1 & 0 \\ -1 & 0 & 0 \\ 0 & 0 & 1 \end{bmatrix}$	1
4	$m_{1-10}$	$\begin{bmatrix} 0 & 1 & 0 \\ 1 & 0 & 0 \\ 0 & 0 & 1 \end{bmatrix}$	-1
5	$m_{120}$	$\begin{bmatrix} 1 & -1 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$	-1
6	$m_{210}$	$\begin{bmatrix} -1 & 0 & 0 \\ -1 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$	-1