

# PG No. 9 $C_4$ 4 [ tetragonal ]

\* generator :  $2_{001}, 4_{001}^+$

\* conjugacy class

[1] : 1

[ $2_{001}$ ] :  $2_{001}$

[ $4_{001}^+$ ] :  $4_{001}^+, 4_{001}^-$

\* 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	$2_{001}$	$\begin{bmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$	1
3	$4_{001}^+$	$\begin{bmatrix} 0 & -1 & 0 \\ 1 & 0 & 0 \\ 0 & 0 & 1 \end{bmatrix}$	1
4	$4_{001}^-$	$\begin{bmatrix} 0 & 1 & 0 \\ -1 & 0 & 0 \\ 0 & 0 & 1 \end{bmatrix}$	1