PG No. 23 C_{6h} $6/m$ [hexagonal]

* generator : $3^{+}_{001},\ 2_{001},\ -1$
* conjugacy class

$[1]:\ 1$
$[2_{001}]:\ 2_{001}$
$[3^{+}_{001}]:\ 3^{+}_{001},\ 3^{-}_{001}$
$[6^{+}_{001}]:\ 6^{+}_{001},\ 6^{-}_{001}$
$[-1]:\ -1$
$[\mathrm{m}_{001}]:\ \mathrm{m}_{001}$
$[-3^{+}_{001}]:\ -3^{+}_{001},\ -3^{-}_{001}$
$[-6^{+}_{001}]:\ -6^{+}_{001},\ -6^{-}_{001}$

* 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	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	2_{001}	$\begin{bmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$	1
5	6^{-}_{001}	$\begin{bmatrix} 0 & 1 & 0 \\ -1 & 1 & 0 \\ 0 & 0 & 1 \end{bmatrix}$	1
6	6^{+}_{001}	$\begin{bmatrix} 1 & -1 & 0 \\ 1 & 0 & 0 \\ 0 & 0 & 1 \end{bmatrix}$	1
7	-1	$\begin{bmatrix} -1 & 0 & 0 \\ 0 & -1 & 0 \\ 0 & 0 & -1 \end{bmatrix}$	-1
8	-3^{+}_{001}	$\begin{bmatrix} 0 & 1 & 0 \\ -1 & 1 & 0 \\ 0 & 0 & -1 \end{bmatrix}$	-1
9	-3^{-}_{001}	$\begin{bmatrix} 1 & -1 & 0 \\ 1 & 0 & 0 \\ 0 & 0 & -1 \end{bmatrix}$	-1
10	m_{001}	$\begin{bmatrix} 1 & 0 & 0 \\ 0 & 1 & 0 \\ 0 & 0 & -1 \end{bmatrix}$	-1

continued ...

Table 1

No.	tag	matrix (polar)	det
11	-6^{-}_{001}	$\begin{bmatrix} 0 & -1 & 0 \\ 1 & -1 & 0 \\ 0 & 0 & -1 \end{bmatrix}$	-1
12	-6^{+}_{001}	$\begin{bmatrix} -1 & 1 & 0 \\ -1 & 0 & 0 \\ 0 & 0 & -1 \end{bmatrix}$	-1