PG No. 44 $C_{3h}(c)$ $\bar{6}$ [hexagonal]

Table 1: Representation matrices

Irrep.						
A'	$1:\begin{bmatrix}1\end{bmatrix}$	$3^+_{001}:\begin{bmatrix}1\end{bmatrix}$	$3^-_{001}:\begin{bmatrix}1\end{bmatrix}$	$\mathrm{m}_{001}:\begin{bmatrix}1\end{bmatrix}$	$-6^-_{001}:\begin{bmatrix}1\end{bmatrix}$	$-6^+_{001}:\begin{bmatrix}1\end{bmatrix}$
A''	$1:\begin{bmatrix}1\end{bmatrix}$	$3^+_{001}:\begin{bmatrix}1\end{bmatrix}$	$3^-_{001}:\begin{bmatrix}1\end{bmatrix}$	$\mathrm{m}_{001}:\begin{bmatrix}-1\end{bmatrix}$	$-6^-_{001}:\begin{bmatrix}-1\end{bmatrix}$	$-6^+_{001}:\begin{bmatrix}-1\end{bmatrix}$
$E'^{(a)}$	$1:\begin{bmatrix}1\end{bmatrix}$	$3^+_{001}:\begin{bmatrix}-\frac{1}{2}-\frac{\sqrt{3}i}{2}\end{bmatrix}$	$3^-_{001}:\begin{bmatrix}-\frac{1}{2}+\frac{\sqrt{3}i}{2}\end{bmatrix}$	$\mathrm{m}_{001}:\begin{bmatrix}1\end{bmatrix}$	$-6^-_{001}:\begin{bmatrix}-\frac{1}{2}-\frac{\sqrt{3}i}{2}\end{bmatrix}$	$-6^+_{001}:\begin{bmatrix}-\frac{1}{2}+\frac{\sqrt{3}i}{2}\end{bmatrix}$
$E'^{(b)}$	$1:\begin{bmatrix}1\end{bmatrix}$	$3^+_{001}:\begin{bmatrix}-\frac{1}{2}+\frac{\sqrt{3}i}{2}\end{bmatrix}$	$3^-_{001}:\begin{bmatrix}-\frac{1}{2}-\frac{\sqrt{3}i}{2}\end{bmatrix}$	$\mathrm{m}_{001}:\begin{bmatrix}1\end{bmatrix}$	$-6^-_{001}:\begin{bmatrix}-\frac{1}{2}+\frac{\sqrt{3}i}{2}\end{bmatrix}$	$-6^+_{001}:\begin{bmatrix}-\frac{1}{2}-\frac{\sqrt{3}i}{2}\end{bmatrix}$
$E''^{(a)}$	$1:\begin{bmatrix}1\end{bmatrix}$	$3^+_{001}:\begin{bmatrix}-\frac{1}{2}-\frac{\sqrt{3}i}{2}\end{bmatrix}$	$3^-_{001}:\begin{bmatrix}-\frac{1}{2}+\frac{\sqrt{3}i}{2}\end{bmatrix}$	$\mathrm{m}_{001}:\begin{bmatrix}-1\end{bmatrix}$	$-6^-_{001}:\begin{bmatrix}\frac{1}{2}+\frac{\sqrt{3}i}{2}\end{bmatrix}$	$-6^+_{001}:\begin{bmatrix}\frac{1}{2}-\frac{\sqrt{3}i}{2}\end{bmatrix}$
$E''^{(b)}$	$1:\begin{bmatrix}1\end{bmatrix}$	$3^+_{001}:\begin{bmatrix}-\frac{1}{2}+\frac{\sqrt{3}i}{2}\end{bmatrix}$	$3^-_{001}:\begin{bmatrix}-\frac{1}{2}-\frac{\sqrt{3}i}{2}\end{bmatrix}$	$\mathrm{m}_{001}:\begin{bmatrix}-1\end{bmatrix}$	$-6^-_{001}:\begin{bmatrix}\frac{1}{2}-\frac{\sqrt{3}i}{2}\end{bmatrix}$	$-6^+_{001}:\begin{bmatrix}\frac{1}{2}+\frac{\sqrt{3}i}{2}\end{bmatrix}$