

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

Table 1: Representation matrices

Irrep.												
A_1	$1 :$	$\begin{bmatrix} 1 \end{bmatrix}$	$3^+_{001} :$	$\begin{bmatrix} 1 \end{bmatrix}$	$3^-_{001} :$	$\begin{bmatrix} 1 \end{bmatrix}$	$m_{1-10} :$	$\begin{bmatrix} 1 \end{bmatrix}$	$m_{120} :$	$\begin{bmatrix} 1 \end{bmatrix}$	$m_{210} :$	$\begin{bmatrix} 1 \end{bmatrix}$
A_2	$1 :$	$\begin{bmatrix} 1 \end{bmatrix}$	$3^+_{001} :$	$\begin{bmatrix} 1 \end{bmatrix}$	$3^-_{001} :$	$\begin{bmatrix} 1 \end{bmatrix}$	$m_{1-10} :$	$\begin{bmatrix} -1 \end{bmatrix}$	$m_{120} :$	$\begin{bmatrix} -1 \end{bmatrix}$	$m_{210} :$	$\begin{bmatrix} -1 \end{bmatrix}$
E	$1 :$	$\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$	$3^+_{001} :$	$\begin{bmatrix} -\frac{1}{2} & -\frac{\sqrt{3}}{2} \\ \frac{\sqrt{3}}{2} & -\frac{1}{2} \end{bmatrix}$	$3^-_{001} :$	$\begin{bmatrix} -\frac{1}{2} & \frac{\sqrt{3}}{2} \\ -\frac{\sqrt{3}}{2} & -\frac{1}{2} \end{bmatrix}$	$m_{1-10} :$	$\begin{bmatrix} -\frac{1}{2} & \frac{\sqrt{3}}{2} \\ \frac{\sqrt{3}}{2} & \frac{1}{2} \end{bmatrix}$	$m_{120} :$	$\begin{bmatrix} 1 & 0 \\ 0 & -1 \end{bmatrix}$	$m_{210} :$	$\begin{bmatrix} -\frac{1}{2} & -\frac{\sqrt{3}}{2} \\ -\frac{\sqrt{3}}{2} & \frac{1}{2} \end{bmatrix}$