

PG No. 19 C_{3v} $3m$ (3m1 setting) [trigonal]

Table 1: Representation matrices

Irrep.												
A_1	1 :	$\begin{bmatrix} 1 \end{bmatrix}$	$3^+_{001} :$	$\begin{bmatrix} 1 \end{bmatrix}$	$3^-_{001} :$	$\begin{bmatrix} 1 \end{bmatrix}$	$m_{110} :$	$\begin{bmatrix} 1 \end{bmatrix}$	$m_{100} :$	$\begin{bmatrix} 1 \end{bmatrix}$	$m_{010} :$	$\begin{bmatrix} 1 \end{bmatrix}$
A_2	1 :	$\begin{bmatrix} 1 \end{bmatrix}$	$3^+_{001} :$	$\begin{bmatrix} 1 \end{bmatrix}$	$3^-_{001} :$	$\begin{bmatrix} 1 \end{bmatrix}$	$m_{110} :$	$\begin{bmatrix} -1 \end{bmatrix}$	$m_{100} :$	$\begin{bmatrix} -1 \end{bmatrix}$	$m_{010} :$	$\begin{bmatrix} -1 \end{bmatrix}$
E	1 :	$\begin{bmatrix} 1 & 0 \\ 0 & 1 \end{bmatrix}$	$3^+_{001} :$	$\begin{bmatrix} -\frac{1}{2} & -\frac{\sqrt{3}}{2} \\ \frac{\sqrt{3}}{2} & -\frac{1}{2} \end{bmatrix}$	$3^-_{001} :$	$\begin{bmatrix} -\frac{1}{2} & \frac{\sqrt{3}}{2} \\ -\frac{\sqrt{3}}{2} & -\frac{1}{2} \end{bmatrix}$	$m_{110} :$	$\begin{bmatrix} \frac{1}{2} & -\frac{\sqrt{3}}{2} \\ -\frac{\sqrt{3}}{2} & -\frac{1}{2} \end{bmatrix}$	$m_{100} :$	$\begin{bmatrix} -1 & 0 \\ 0 & 1 \end{bmatrix}$	$m_{010} :$	$\begin{bmatrix} \frac{1}{2} & \frac{\sqrt{3}}{2} \\ \frac{\sqrt{3}}{2} & -\frac{1}{2} \end{bmatrix}$