

MPG No. 27.8.156  $6'/mmm'$  ( $6'/mm'm$  setting) [ Type III, hexagonal ] [M tensor]

\* Rank 0 tensor. \* Rank 1 tensor. \* Rank 2 tensor (s). \* Rank 2 tensor (a). \* Rank 3 tensor (s). \* Rank 3 tensor (a). \* Rank 4 tensor (sss).

$$\begin{bmatrix} 0 & 0 & 0 & M_{xyz} & 0 & 0 \\ 0 & 0 & 0 & -M_{xyz} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ M_{xyz} & -M_{xyz} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & M_{xyz} \\ 0 & 0 & 0 & 0 & M_{xyz} & 0 \end{bmatrix}$$

$$M_{xyz} = M_{gb}^{(1)}$$

\* Rank 4 tensor (ssa).

$$\begin{bmatrix} 0 & 0 & 0 & M_{xyz} & 0 & 0 \\ 0 & 0 & 0 & -M_{xyz} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 \\ -M_{xyz} & M_{xyz} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & -M_{xyz} \\ 0 & 0 & 0 & 0 & M_{xyz} & 0 \end{bmatrix}$$

$$M_{xyz} = 2T_{f2}^{(1)}$$

\* Rank 4 tensor (aas). \* Rank 4 tensor (aaa). \* Rank 4 tensor (sa).

$$\begin{bmatrix} M_{xyz} & 0 & 0 \\ -M_{xyz} & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & -M_{xyz} & 0 \end{bmatrix}$$

$$M_{xyz} = T_{f2}^{(2)}$$

\* Rank 4 tensor (as).

$$\begin{bmatrix} M_{yzxx} & -M_{yzxx} & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & -M_{yzxx} \\ 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

$$M_{yzxx} = T_{f2}^{(3)}$$

\* Rank 4 tensor (s).

$$\begin{bmatrix} 0 & 0 & 0 & M_{xyz} & 0 & 0 & M_{xxzy} & 0 & 0 \\ 0 & 0 & 0 & -M_{xyz} & 0 & 0 & -M_{xxzy} & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ M_{yzxx} & -M_{yzxx} & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & M_{yzxx} & 0 & 0 & M_{yzxx} \\ 0 & 0 & 0 & 0 & M_{xxzy} & 0 & 0 & M_{xxzy} & 0 \end{bmatrix}$$

$$M_{xyz} = M_{gb}^{(1)} + 2T_{f2}^{(1)} + T_{f2}^{(2)}$$

$$M_{xxzy} = M_{gb}^{(1)} + 2T_{f2}^{(1)} - T_{f2}^{(2)}$$

$$M_{yzxx} = M_{gb}^{(1)} - 2T_{f2}^{(1)}$$

\* Rank 4 tensor (a).

$$\begin{bmatrix} M_{yzxx} & -M_{yzxx} & 0 & 0 & 0 & 0 & 0 & 0 & 0 \\ 0 & 0 & 0 & 0 & 0 & -M_{yzxx} & 0 & 0 & -M_{yzxx} \\ 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 0 \end{bmatrix}$$

$$M_{yzxx} = T_{f2}^{(3)}$$

\* Rank 4 tensor (t).

$$\begin{bmatrix} 0 & 0 & 0 \\ 0 & 0 & M_{yyyyz} \\ 0 & 0 & 0 \\ 0 & M_{yyyyz} & 0 \\ 0 & 0 & 0 \\ 0 & 0 & -M_{yyyyz} \\ 0 & 0 & 0 \\ 0 & -M_{yyyyz} & 0 \\ 0 & 0 & 0 \\ -M_{yyyyz} & 0 & 0 \end{bmatrix}$$

$$M_{yyyyz} = -M_{gb}^{(1)}$$