

MPG No. 4.1.9 m [Type I, monoclinic] [T tensor]

* Rank 0 tensor.

$$[T]$$

$$T = T_s^{(1)}$$

* Rank 1 tensor.

$$[T_x \quad 0 \quad T_z]$$

$$T_x = T_{px}^{(1)}$$

$$T_z = T_{pz}^{(1)}$$

* Rank 2 tensor (s).

$$\begin{bmatrix} T_{xx} & 0 & T_{xz} \\ 0 & T_{yy} & 0 \\ T_{xz} & 0 & T_{zz} \end{bmatrix}$$

$$T_{xx} = -T_{du}^{(1)} + T_{dv}^{(1)} + T_s^{(1)}$$

$$T_{xz} = T_{dxz}^{(1)}$$

$$T_{yy} = -T_{du}^{(1)} - T_{dv}^{(1)} + T_s^{(1)}$$

$$T_{zz} = 2T_{du}^{(1)} + T_s^{(1)}$$

* Rank 2 tensor (a).

$$\begin{bmatrix} 0 & 0 & T_{xz} \\ 0 & 0 & 0 \\ -T_{xz} & 0 & 0 \end{bmatrix}$$

$$T_{xz} = -M_{py}^{(1)}$$

* Rank 3 tensor (s).

$$\begin{bmatrix} T_{xxx} & 0 & T_{xxz} \\ T_{yyx} & 0 & T_{yyz} \\ T_{zzx} & 0 & T_{zzz} \\ 0 & T_{yzy} & 0 \\ T_{zxx} & 0 & T_{zxz} \\ 0 & T_{xyy} & 0 \end{bmatrix}$$

$$T_{xxx} = 2T_{fax}^{(1)} + T_{px}^{(1)} + 2T_{px}^{(2)}$$

$$T_{xxz} = -2M_{dxy}^{(1)} - T_{faz}^{(1)} + T_{fbz}^{(1)} + T_{pz}^{(1)}$$

$$T_{yyx} = -2M_{dyz}^{(1)} - T_{fax}^{(1)} + T_{fbx}^{(1)} + T_{px}^{(1)}$$

$$T_{yyz} = 2M_{dxy}^{(1)} - T_{faz}^{(1)} - T_{fbz}^{(1)} + T_{pz}^{(1)}$$

$$T_{zzx} = 2M_{dyz}^{(1)} - T_{fax}^{(1)} - T_{fbx}^{(1)} + T_{px}^{(1)}$$

$$T_{zzz} = 2T_{faz}^{(1)} + T_{pz}^{(1)} + 2T_{pz}^{(2)}$$

$$T_{yzy} = -M_{dxy}^{(1)} - T_{faz}^{(1)} - T_{fbz}^{(1)} + T_{pz}^{(2)}$$

$$T_{zxx} = M_{dxy}^{(1)} - T_{faz}^{(1)} + T_{fbz}^{(1)} + T_{pz}^{(2)}$$

$$T_{zxz} = -M_{dyz}^{(1)} - T_{fax}^{(1)} - T_{fbx}^{(1)} + T_{px}^{(2)}$$

$$T_{xyy} = M_{dyz}^{(1)} - T_{fax}^{(1)} + T_{fbx}^{(1)} + T_{px}^{(2)}$$

* Rank 3 tensor (a).

$$\begin{bmatrix} 0 & T_{yzy} & 0 \\ T_{zxx} & 0 & T_{zzx} \\ 0 & T_{xyy} & 0 \end{bmatrix}$$

$$T_{yzy} = M_{dxy}^{(2)} + T_{pz}^{(3)}$$

$$T_{zxx} = M_{dxy}^{(2)} - T_{pz}^{(3)}$$

$$T_{zzx} = M_{dyz}^{(2)} + T_{px}^{(3)}$$

$$T_{xyy} = M_{dyz}^{(2)} - T_{px}^{(3)}$$

* Rank 4 tensor (sss).

$$\begin{bmatrix} T_{xxxx} & T_{xxyy} & T_{xxxz} & 0 & T_{xxzx} & 0 \\ T_{xxyy} & T_{yyyy} & T_{yyzz} & 0 & T_{yyzx} & 0 \\ T_{xxxz} & T_{yyzz} & T_{zzzz} & 0 & T_{zzzx} & 0 \\ 0 & 0 & 0 & T_{yzyz} & 0 & T_{yzxy} \\ T_{xxzx} & T_{yyzx} & T_{zzzx} & 0 & T_{zxzx} & 0 \\ 0 & 0 & 0 & T_{yzxy} & 0 & T_{xyxy} \end{bmatrix}$$

$$T_{xxxx} = -2T_{du}^{(1)} - 4T_{du}^{(2)} + 2T_{dv}^{(1)} + 4T_{dv}^{(2)} - T_{gu}^{(1)} + T_{gv}^{(1)} + 2T_g^{(1)} + T_s^{(1)} + 2T_s^{(2)}$$

$$T_{xxyy} = -2T_{du}^{(1)} + 2T_{gu}^{(1)} - T_g^{(1)} + T_s^{(1)}$$

$$T_{xxxz} = T_{du}^{(1)} + T_{dv}^{(1)} - T_{gu}^{(1)} - T_{gv}^{(1)} - T_g^{(1)} + T_s^{(1)}$$

$$T_{xxzx} = T_{dxz}^{(1)} + 2T_{dxz}^{(2)} - T_{gay}^{(1)} - T_{gb}^{(1)}$$

$$T_{yyyy} = -2T_{du}^{(1)} - 4T_{du}^{(2)} - 2T_{dv}^{(1)} - 4T_{dv}^{(2)} - T_{gu}^{(1)} - T_{gv}^{(1)} + 2T_g^{(1)} + T_s^{(1)} + 2T_s^{(2)}$$

$$T_{yyzz} = T_{du}^{(1)} - T_{dv}^{(1)} - T_{gu}^{(1)} + T_{gv}^{(1)} - T_g^{(1)} + T_s^{(1)}$$

$$T_{yyzx} = T_{dxz}^{(1)} + 2T_{gb}^{(1)}$$

$$T_{zzzz} = 4T_{du}^{(1)} + 8T_{du}^{(2)} + 2T_{gu}^{(1)} + 2T_g^{(1)} + T_s^{(1)} + 2T_s^{(2)}$$

$$T_{zzzx} = T_{dxz}^{(1)} + 2T_{dxz}^{(2)} + T_{gay}^{(1)} - T_{gb}^{(1)}$$

$$T_{yzyz} = T_{du}^{(2)} - T_{dv}^{(2)} - T_{gu}^{(1)} + T_{gv}^{(1)} - T_g^{(1)} + T_s^{(2)}$$

$$T_{yzxy} = T_{dxz}^{(2)} + 2T_{gb}^{(1)}$$

$$T_{zxzx} = T_{du}^{(2)} + T_{dv}^{(2)} - T_{gu}^{(1)} - T_{gv}^{(1)} - T_g^{(1)} + T_s^{(2)}$$

$$T_{xyxy} = -2T_{du}^{(2)} + 2T_{gu}^{(1)} - T_g^{(1)} + T_s^{(2)}$$

* Rank 4 tensor (ssa).

$$\begin{bmatrix} 0 & T_{xxyy} & T_{xxxz} & 0 & T_{xxzx} & 0 \\ -T_{xxyy} & 0 & T_{yyzz} & 0 & T_{yyzx} & 0 \\ -T_{xxxz} & -T_{yyzz} & 0 & 0 & T_{zzzx} & 0 \\ 0 & 0 & 0 & 0 & 0 & T_{yzxy} \\ -T_{xxzx} & -T_{yyzx} & -T_{zzzx} & 0 & 0 & 0 \\ 0 & 0 & 0 & -T_{yzxy} & 0 & 0 \end{bmatrix}$$

$$T_{xxyy} = 4M_{f3}^{(1)} - 2T_{dv}^{(3)}$$

$$T_{xxxz} = -4M_{f3}^{(1)} + 3T_{du}^{(3)} - T_{dv}^{(3)}$$

$$T_{xxzx} = 2M_{fay}^{(1)} + 2M_{fb}^{(1)} - 2M_{py}^{(1)} + T_{dxz}^{(3)}$$

$$T_{yyzz} = 4M_{f3}^{(1)} + 3T_{du}^{(3)} + T_{dv}^{(3)}$$

$$T_{yyzx} = -4M_{fb}^{(1)} + T_{dxz}^{(3)}$$

$$T_{zzzx} = -2M_{fay}^{(1)} + 2M_{fb}^{(1)} + 2M_{py}^{(1)} + T_{dxz}^{(3)}$$

$$T_{yzxy} = 4M_{fay}^{(1)} + M_{py}^{(1)}$$

* Rank 4 tensor (aas).

$$\begin{bmatrix} T_{yzyz} & 0 & T_{yzxy} \\ 0 & T_{zxzx} & 0 \\ T_{yzxy} & 0 & T_{xyxy} \end{bmatrix}$$

$$T_{yzyz} = -2T_{du}^{(4)} + 2T_{dv}^{(4)} + T_s^{(3)}$$

$$T_{yzxy} = 2T_{dxz}^{(4)}$$

$$T_{zxzx} = -2T_{du}^{(4)} - 2T_{dv}^{(4)} + T_s^{(3)}$$

$$T_{xyxy} = 4T_{du}^{(4)} + T_s^{(3)}$$

* Rank 4 tensor (aaa).

$$\begin{bmatrix} 0 & 0 & T_{yzxy} \\ 0 & 0 & 0 \\ -T_{yzxy} & 0 & 0 \end{bmatrix}$$

$$T_{yzxy} = M_{py}^{(2)}$$

* Rank 4 tensor (sa).

$$\begin{bmatrix} 0 & T_{xxzx} & 0 \\ 0 & T_{yyzx} & 0 \\ 0 & T_{zzzx} & 0 \\ T_{yzyz} & 0 & T_{yzxy} \\ 0 & T_{zxzx} & 0 \\ T_{xyyz} & 0 & T_{xyxy} \end{bmatrix}$$

$$T_{xxzx} = -M_{fay}^{(2)} - M_{fbg}^{(2)} + M_{py}^{(3)} + 2T_{dxz}^{(5)}$$

$$T_{yyzx} = 2M_{fay}^{(2)} + M_{py}^{(3)} + 2M_{py}^{(4)}$$

$$T_{zzzx} = -M_{fay}^{(2)} + M_{fbg}^{(2)} + M_{py}^{(3)} - 2T_{dxz}^{(5)}$$

$$T_{yzyz} = M_{f3}^{(2)} - 3T_{du}^{(5)} - T_{dv}^{(5)}$$

$$T_{yzxy} = -M_{fay}^{(2)} + M_{fbg}^{(2)} + M_{py}^{(4)} + T_{dxz}^{(5)}$$

$$T_{zxzx} = M_{f3}^{(2)} + 3T_{du}^{(5)} - T_{dv}^{(5)}$$

$$T_{xyyz} = -M_{fay}^{(2)} - M_{fbg}^{(2)} + M_{py}^{(4)} - T_{dxz}^{(5)}$$

$$T_{xyxy} = M_{f3}^{(2)} + 2T_{dv}^{(5)}$$

* Rank 4 tensor (as).

$$\begin{bmatrix} 0 & 0 & 0 & T_{yzyz} & 0 & T_{yzxy} \\ T_{zxzx} & T_{zxyy} & T_{zxzx} & 0 & T_{zxzx} & 0 \\ 0 & 0 & 0 & T_{xyyz} & 0 & T_{xyxy} \end{bmatrix}$$

$$T_{yzyz} = M_{f3}^{(3)} - 3T_{du}^{(6)} - T_{dv}^{(6)}$$

$$T_{yzxy} = -M_{fay}^{(3)} - M_{fbg}^{(3)} + M_{py}^{(6)} - T_{dxz}^{(6)}$$

$$T_{zxzx} = -M_{fay}^{(3)} - M_{fbg}^{(3)} + M_{py}^{(5)} + 2T_{dxz}^{(6)}$$

$$T_{zxyy} = 2M_{fay}^{(3)} + M_{py}^{(5)} + 2M_{py}^{(6)}$$

$$T_{zxzx} = -M_{fay}^{(3)} + M_{fbg}^{(3)} + M_{py}^{(5)} - 2T_{dxz}^{(6)}$$

$$T_{zxxz} = M_{f3}^{(3)} + 3T_{du}^{(6)} - T_{dv}^{(6)}$$

$$T_{xyyz} = -M_{fay}^{(3)} + M_{fbg}^{(3)} + M_{py}^{(6)} + T_{dxz}^{(6)}$$

$$T_{xyxy} = M_{f3}^{(3)} + 2T_{dv}^{(6)}$$

* Rank 4 tensor (s).

$$\begin{bmatrix} T_{xxxx} & T_{xxyy} & T_{xzzz} & 0 & T_{xxzx} & 0 & 0 & T_{xxxz} & 0 \\ T_{yyxx} & T_{yyyy} & T_{yyzz} & 0 & T_{yyzx} & 0 & 0 & T_{yyxz} & 0 \\ T_{zzxx} & T_{zzyy} & T_{zzzz} & 0 & T_{zzzx} & 0 & 0 & T_{zzxz} & 0 \\ 0 & 0 & 0 & T_{yzyz} & 0 & T_{yzxy} & T_{yzzz} & 0 & T_{zyyx} \\ T_{zxxx} & T_{zxxy} & T_{zxzz} & 0 & T_{zxzx} & 0 & 0 & T_{zxzz} & 0 \\ 0 & 0 & 0 & T_{xyyz} & 0 & T_{xyxy} & T_{xyzy} & 0 & T_{xyyx} \end{bmatrix}$$

$$\begin{aligned}
T_{xxxx} &= -2T_{du}^{(1)} - 4T_{du}^{(2)} + 2T_{dv}^{(1)} + 4T_{dv}^{(2)} - T_{gu}^{(1)} + T_{gv}^{(1)} + 2T_g^{(1)} + T_s^{(1)} + 2T_s^{(2)} \\
T_{xxyy} &= 4M_{f3}^{(1)} - 2T_{du}^{(1)} - 2T_{dv}^{(3)} + 2T_{gu}^{(1)} - T_g^{(1)} + T_s^{(1)} \\
T_{xzzz} &= -4M_{f3}^{(1)} + T_{du}^{(1)} + 3T_{du}^{(3)} + T_{dv}^{(1)} - T_{dv}^{(3)} - T_{gu}^{(1)} - T_{gv}^{(1)} - T_g^{(1)} + T_s^{(1)} \\
T_{xxzx} &= 2M_{fay}^{(1)} - M_{fay}^{(2)} + 2M_{fb}^{(1)} - M_{fb}^{(2)} - 2M_{py}^{(1)} + M_{py}^{(3)} + T_{dxz}^{(1)} + 2T_{dxz}^{(2)} + T_{dxz}^{(3)} + 2T_{dxz}^{(5)} - T_{gaz}^{(1)} - T_{gb}^{(1)} \\
T_{xxxz} &= 2M_{fay}^{(1)} + M_{fay}^{(2)} + 2M_{fb}^{(1)} + M_{fb}^{(2)} - 2M_{py}^{(1)} - M_{py}^{(3)} + T_{dxz}^{(1)} + 2T_{dxz}^{(2)} + T_{dxz}^{(3)} - 2T_{dxz}^{(5)} - T_{gaz}^{(1)} - T_{gb}^{(1)} \\
T_{yyxx} &= -4M_{f3}^{(1)} - 2T_{du}^{(1)} + 2T_{dv}^{(3)} + 2T_{gu}^{(1)} - T_g^{(1)} + T_s^{(1)} \\
T_{yyyy} &= -2T_{du}^{(1)} - 4T_{du}^{(2)} - 2T_{dv}^{(1)} - 4T_{dv}^{(2)} - T_{gu}^{(1)} - T_{gv}^{(1)} + 2T_g^{(1)} + T_s^{(1)} + 2T_s^{(2)} \\
T_{yyzz} &= 4M_{f3}^{(1)} + T_{du}^{(1)} + 3T_{du}^{(3)} - T_{dv}^{(1)} + T_{dv}^{(3)} - T_{gu}^{(1)} + T_{gv}^{(1)} - T_g^{(1)} + T_s^{(1)} \\
T_{yyzx} &= 2M_{fay}^{(2)} - 4M_{fb}^{(1)} + M_{py}^{(3)} + 2M_{py}^{(4)} + T_{dxz}^{(1)} + T_{dxz}^{(3)} + 2T_{gb}^{(1)} \\
T_{yyxz} &= -2M_{fay}^{(2)} - 4M_{fb}^{(1)} - M_{py}^{(3)} - 2M_{py}^{(4)} + T_{dxz}^{(1)} + T_{dxz}^{(3)} + 2T_{gb}^{(1)} \\
T_{zzxx} &= 4M_{f3}^{(1)} + T_{du}^{(1)} - 3T_{du}^{(3)} + T_{dv}^{(1)} + T_{dv}^{(3)} - T_{gu}^{(1)} - T_{gv}^{(1)} - T_g^{(1)} + T_s^{(1)} \\
T_{zzyy} &= -4M_{f3}^{(1)} + T_{du}^{(1)} - 3T_{du}^{(3)} - T_{dv}^{(1)} - T_{dv}^{(3)} - T_{gu}^{(1)} + T_{gv}^{(1)} - T_g^{(1)} + T_s^{(1)} \\
T_{zzzz} &= 4T_{du}^{(1)} + 8T_{du}^{(2)} + 2T_{gu}^{(1)} + 2T_g^{(1)} + T_s^{(1)} + 2T_s^{(2)} \\
T_{zzzx} &= -2M_{fay}^{(1)} - M_{fay}^{(2)} + 2M_{fb}^{(1)} + M_{fb}^{(2)} + 2M_{py}^{(1)} + M_{py}^{(3)} + T_{dxz}^{(1)} + 2T_{dxz}^{(2)} + T_{dxz}^{(3)} - 2T_{dxz}^{(5)} + T_{gaz}^{(1)} - T_{gb}^{(1)} \\
T_{zzxz} &= -2M_{fay}^{(1)} + M_{fay}^{(2)} + 2M_{fb}^{(1)} - M_{fb}^{(2)} + 2M_{py}^{(1)} - M_{py}^{(3)} + T_{dxz}^{(1)} + 2T_{dxz}^{(2)} + T_{dxz}^{(3)} + 2T_{dxz}^{(5)} + T_{gaz}^{(1)} - T_{gb}^{(1)} \\
T_{yzyz} &= M_{f3}^{(2)} + T_{du}^{(2)} - 3T_{du}^{(5)} - T_{dv}^{(2)} - T_{dv}^{(5)} - T_{gu}^{(1)} + T_{gv}^{(1)} - T_g^{(1)} + T_s^{(2)} \\
T_{yzxy} &= 4M_{fay}^{(1)} - M_{fay}^{(2)} + M_{fb}^{(1)} + M_{py}^{(1)} + M_{py}^{(4)} + T_{dxz}^{(2)} + T_{dxz}^{(5)} + 2T_{gb}^{(1)} \\
T_{yzzz} &= -M_{f3}^{(2)} + T_{du}^{(2)} + 3T_{du}^{(5)} - T_{dv}^{(2)} + T_{dv}^{(5)} - T_{gu}^{(1)} + T_{gv}^{(1)} - T_g^{(1)} + T_s^{(2)} \\
T_{yzyx} &= 4M_{fay}^{(1)} + M_{fay}^{(2)} - M_{fb}^{(1)} + M_{py}^{(1)} - M_{py}^{(4)} + T_{dxz}^{(2)} - T_{dxz}^{(5)} + 2T_{gb}^{(1)} \\
T_{zxxx} &= -2M_{fay}^{(1)} - 2M_{fb}^{(1)} + 2M_{py}^{(1)} + T_{dxz}^{(1)} + 2T_{dxz}^{(2)} - T_{dxz}^{(3)} - T_{gaz}^{(1)} - T_{gb}^{(1)} \\
T_{zxyy} &= 4M_{fby}^{(1)} + T_{dxz}^{(1)} - T_{dxz}^{(3)} + 2T_{gb}^{(1)} \\
T_{zzzz} &= 2M_{fay}^{(1)} - 2M_{fb}^{(1)} - 2M_{py}^{(1)} + T_{dxz}^{(1)} + 2T_{dxz}^{(2)} - T_{dxz}^{(3)} + T_{gaz}^{(1)} - T_{gb}^{(1)} \\
T_{zzxz} &= M_{f3}^{(2)} + T_{du}^{(2)} + 3T_{du}^{(5)} + T_{dv}^{(2)} - T_{dv}^{(5)} - T_{gu}^{(1)} - T_{gv}^{(1)} - T_g^{(1)} + T_s^{(2)} \\
T_{zzxz} &= -M_{f3}^{(2)} + T_{du}^{(2)} - 3T_{du}^{(5)} + T_{dv}^{(2)} + T_{dv}^{(5)} - T_{gu}^{(1)} - T_{gv}^{(1)} - T_g^{(1)} + T_s^{(2)} \\
T_{xyyz} &= -4M_{fay}^{(1)} - M_{fay}^{(2)} - M_{fb}^{(1)} - M_{py}^{(1)} + M_{py}^{(4)} + T_{dxz}^{(2)} - T_{dxz}^{(5)} + 2T_{gb}^{(1)} \\
T_{xyxy} &= M_{f3}^{(2)} - 2T_{du}^{(2)} + 2T_{dv}^{(5)} + 2T_{gu}^{(1)} - T_g^{(1)} + T_s^{(2)} \\
T_{xyzy} &= -4M_{fay}^{(1)} + M_{fay}^{(2)} + M_{fb}^{(1)} - M_{py}^{(1)} - M_{py}^{(4)} + T_{dxz}^{(2)} + T_{dxz}^{(5)} + 2T_{gb}^{(1)} \\
T_{xyyx} &= -M_{f3}^{(2)} - 2T_{du}^{(2)} - 2T_{dv}^{(5)} + 2T_{gu}^{(1)} - T_g^{(1)} + T_s^{(2)}
\end{aligned}$$

* Rank 4 tensor (a).

$$\begin{bmatrix} 0 & 0 & 0 & T_{yzyz} & 0 & T_{yzxy} & T_{yzzz} & 0 & T_{zyyx} \\ T_{zxxx} & T_{zxyy} & T_{zxzz} & 0 & T_{zxzx} & 0 & 0 & T_{zxzz} & 0 \\ 0 & 0 & 0 & T_{xyyz} & 0 & T_{xyxy} & T_{xyzy} & 0 & T_{xyyx} \end{bmatrix}$$

$$\begin{aligned}
T_{yzyz} &= M_{f3}^{(3)} - 2T_{du}^{(4)} - 3T_{du}^{(6)} + 2T_{dv}^{(4)} - T_{dv}^{(6)} + T_s^{(3)} \\
T_{yzxy} &= -M_{fay}^{(3)} - M_{fbg}^{(3)} + M_{py}^{(2)} + M_{py}^{(6)} + 2T_{dxz}^{(4)} - T_{dxz}^{(6)} \\
T_{yzyy} &= M_{f3}^{(3)} + 2T_{du}^{(4)} - 3T_{du}^{(6)} - 2T_{dv}^{(4)} - T_{dv}^{(6)} - T_s^{(3)} \\
T_{yzyx} &= -M_{fay}^{(3)} - M_{fbg}^{(3)} - M_{py}^{(2)} + M_{py}^{(6)} - 2T_{dxz}^{(4)} - T_{dxz}^{(6)} \\
T_{zxxx} &= -M_{fay}^{(3)} - M_{fbg}^{(3)} + M_{py}^{(5)} + 2T_{dxz}^{(6)} \\
T_{zxyy} &= 2M_{fay}^{(3)} + M_{py}^{(5)} + 2M_{py}^{(6)} \\
T_{zxzz} &= -M_{fay}^{(3)} + M_{fbg}^{(3)} + M_{py}^{(5)} - 2T_{dxz}^{(6)} \\
T_{zxzx} &= M_{f3}^{(3)} - 2T_{du}^{(4)} + 3T_{du}^{(6)} - 2T_{dv}^{(4)} - T_{dv}^{(6)} + T_s^{(3)} \\
T_{zxzx} &= M_{f3}^{(3)} + 2T_{du}^{(4)} + 3T_{du}^{(6)} + 2T_{dv}^{(4)} - T_{dv}^{(6)} - T_s^{(3)} \\
T_{xyyz} &= -M_{fay}^{(3)} + M_{fbg}^{(3)} - M_{py}^{(2)} + M_{py}^{(6)} + 2T_{dxz}^{(4)} + T_{dxz}^{(6)} \\
T_{xyxy} &= M_{f3}^{(3)} + 4T_{du}^{(4)} + 2T_{dv}^{(6)} + T_s^{(3)} \\
T_{xyzy} &= -M_{fay}^{(3)} + M_{fbg}^{(3)} + M_{py}^{(2)} + M_{py}^{(6)} - 2T_{dxz}^{(4)} + T_{dxz}^{(6)} \\
T_{xyyx} &= M_{f3}^{(3)} - 4T_{du}^{(4)} + 2T_{dv}^{(6)} - T_s^{(3)}
\end{aligned}$$

* Rank 4 tensor (t).

$$\left[\begin{array}{ccc}
T_{xxxx} & 0 & T_{xxzz} \\
0 & T_{yyyy} & 0 \\
T_{zzzx} & 0 & T_{zzzz} \\
T_{yyxx} & 0 & T_{yyzz} \\
T_{zzxx} & 0 & T_{zzxz} \\
0 & T_{xxyy} & 0 \\
0 & T_{yzyy} & 0 \\
T_{zxxx} & 0 & T_{zxzx} \\
T_{xxyy} + T_{yyzz} - T_{yzyy} - T_{zxxx} + T_{zzxx} & 0 & T_{xyyz} \\
0 & T_{xyyz} + \frac{T_{zzxz}}{2} - \frac{T_{zzxx}}{2} & 0
\end{array} \right]$$

$$\begin{aligned}
T_{xxxx} &= -2T_{du}^{(1)} - 4T_{du}^{(2)} + 2T_{dv}^{(1)} + 4T_{dv}^{(2)} - T_{gu}^{(1)} + T_{gv}^{(1)} + 2T_g^{(1)} + 3T_s^{(1)} \\
T_{xxxx} &= T_{dxz}^{(1)} + 2T_{dxz}^{(2)} + T_{dxz}^{(3)} - 2T_{dxz}^{(5)} - T_{gay}^{(1)} - T_{gby}^{(1)} \\
T_{yyyy} &= -2T_{du}^{(1)} - 4T_{du}^{(2)} - 2T_{dv}^{(1)} - 4T_{dv}^{(2)} - T_{gu}^{(1)} - T_{gv}^{(1)} + 2T_g^{(1)} + 3T_s^{(1)} \\
T_{zzzx} &= T_{dxz}^{(1)} + 2T_{dxz}^{(2)} + T_{dxz}^{(3)} - 2T_{dxz}^{(5)} + T_{gay}^{(1)} - T_{gby}^{(1)} \\
T_{zzzz} &= 4T_{du}^{(1)} + 8T_{du}^{(2)} + 2T_{gu}^{(1)} + 2T_g^{(1)} + 3T_s^{(1)} \\
T_{yyzx} &= T_{dxz}^{(1)} + T_{dxz}^{(3)} + 2T_{gby}^{(1)} \\
T_{yyzz} &= T_{du}^{(1)} + 3T_{du}^{(3)} - T_{dv}^{(1)} + T_{dv}^{(3)} - T_{gu}^{(1)} + T_{gv}^{(1)} - T_g^{(1)} + T_s^{(1)} \\
T_{zxxx} &= T_{du}^{(1)} - 3T_{du}^{(3)} + T_{dv}^{(1)} + T_{dv}^{(3)} - T_{gu}^{(1)} - T_{gv}^{(1)} - T_g^{(1)} + T_s^{(1)} \\
T_{zzxz} &= T_{dxz}^{(1)} + 2T_{dxz}^{(2)} + T_{dxz}^{(3)} + 2T_{dxz}^{(5)} + T_{gay}^{(1)} - T_{gby}^{(1)} \\
T_{xxyy} &= -2T_{du}^{(1)} - 2T_{dv}^{(3)} + 2T_{gu}^{(1)} - T_g^{(1)} + T_s^{(1)} \\
T_{yzyy} &= T_{du}^{(2)} + 3T_{du}^{(5)} - T_{dv}^{(2)} + T_{dv}^{(5)} - T_{gu}^{(1)} + T_{gv}^{(1)} - T_g^{(1)} + T_s^{(1)} \\
T_{zxxx} &= T_{dxz}^{(1)} + 2T_{dxz}^{(2)} - T_{dxz}^{(3)} - T_{gay}^{(1)} - T_{gby}^{(1)} \\
T_{zxxz} &= T_{du}^{(2)} - 3T_{du}^{(5)} + T_{dv}^{(2)} + T_{dv}^{(5)} - T_{gu}^{(1)} - T_{gv}^{(1)} - T_g^{(1)} + T_s^{(1)} \\
T_{xyyz} &= T_{dxz}^{(2)} - T_{dxz}^{(5)} + 2T_{gby}^{(1)}
\end{aligned}$$