* Rank 0 tensor. * Rank 1 tensor. * Rank 2 tensor (s).

$$\begin{bmatrix} 0 & G_{xy} & 0 \\ G_{xy} & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix}$$

$G_{xy} = G^{(1)}_{dxy}$

* Rank 2 tensor (a).

$$\begin{bmatrix} 0 & G_{xy} & 0 \\ -G_{xy} & 0 & 0 \\ 0 & 0 & 0 \end{bmatrix}$$

$G_{xy} = Q^{(1)}_{pz}$

* Rank 3 tensor (s).

$$\begin{bmatrix} 0 & 0 & 0 \\ 0 & 0 & 0 \\ 0 & 0 & 0 \\ G_{yzx} & 0 & 0 \\ 0 & G_{zxy} & 0 \\ 0 & 0 & G_{xyz} \end{bmatrix}$$

$G_{yzx} = G^{(1)}_{f3} - 3Q^{(1)}_{du} - Q^{(1)}_{dv}$

$G_{zxy} = G^{(1)}_{f3} + 3Q^{(1)}_{du} - Q^{(1)}_{dv}$

$G_{xyz} = G^{(1)}_{f3} + 2Q^{(1)}_{dv}$

* Rank 3 tensor (a).

$$\begin{bmatrix} G_{yzx} & 0 & 0 \\ 0 & G_{zxy} & 0 \\ 0 & 0 & G_{xyz} \end{bmatrix}$$

$G_{yzx} = -Q^{(2)}_{du} + Q^{(2)}_{dv} + Q^{(1)}_{s}$

$G_{zxy} = -Q^{(2)}_{du} - Q^{(2)}_{dv} + Q^{(1)}_{s}$

$G_{xyz} = 2Q^{(2)}_{du} + Q^{(1)}_{s}$

* Rank 4 tensor (sss).

$$\begin{bmatrix} 0 & 0 & 0 & 0 & 0 & G_{xxxy} \\ 0 & 0 & 0 & 0 & 0 & G_{yyxy} \\ 0 & 0 & 0 & 0 & 0 & G_{zzxy} \\ 0 & 0 & 0 & 0 & G_{yzzx} & 0 \\ 0 & 0 & 0 & G_{yzzx} & 0 & 0 \\ G_{xxxy} & G_{yyxy} & G_{zzxy} & 0 & 0 & 0 \end{bmatrix}$$

$G_{xxxy} = G^{(1)}_{dxy} + 2G^{(2)}_{dxy} + G^{(1)}_{gaz} - G^{(1)}_{gbz}$

$G_{yyxy} = G^{(1)}_{dxy} + 2G^{(2)}_{dxy} - G^{(1)}_{gaz} - G^{(1)}_{gbz}$

$G_{zzxy} = G^{(1)}_{dxy} + 2G^{(1)}_{gbz}$

$G_{yzzx} = G^{(2)}_{dxy} + 2G^{(1)}_{gbz}$

* Rank 4 tensor (ssa).

$$
\begin{bmatrix}
0 & 0 & 0 & 0 & 0 & G_{xxxy} \\
0 & 0 & 0 & 0 & 0 & G_{yyxy} \\
0 & 0 & 0 & 0 & 0 & G_{zzxy} \\
0 & 0 & 0 & 0 & G_{yzzx} & 0 \\
0 & 0 & 0 & -G_{yzzx} & 0 & 0 \\
-G_{xxxy} & -G_{yyxy} & -G_{zzxy} & 0 & 0 & 0
\end{bmatrix}
$$

$$G_{xxxy} = G^{(3)}_{dxy} - 2Q^{(1)}_{faz} + 2Q^{(1)}_{fbz} + 2Q^{(1)}_{pz}$$
$$G_{yyxy} = G^{(3)}_{dxy} + 2Q^{(1)}_{faz} + 2Q^{(1)}_{fbz} - 2Q^{(1)}_{pz}$$
$$G_{zzxy} = G^{(3)}_{dxy} - 4Q^{(1)}_{fbz}$$
$$G_{yzzx} = -4Q^{(1)}_{faz} - Q^{(1)}_{pz}$$

* Rank 4 tensor (aas).

$$
\begin{bmatrix}
0 & G_{yzzx} & 0 \\
G_{yzzx} & 0 & 0 \\
0 & 0 & 0
\end{bmatrix}
$$

$$G_{yzzx} = 2G^{(4)}_{dxy}$$

* Rank 4 tensor (aaa).

$$
\begin{bmatrix}
0 & G_{yzzx} & 0 \\
-G_{yzzx} & 0 & 0 \\
0 & 0 & 0
\end{bmatrix}
$$

$$G_{yzzx} = -Q^{(2)}_{pz}$$

* Rank 4 tensor (sa).

$$
\begin{bmatrix}
0 & 0 & G_{xxxy} \\
0 & 0 & G_{yyxy} \\
0 & 0 & G_{zzxy} \\
0 & G_{yzzx} & 0 \\
G_{zxyz} & 0 & 0 \\
0 & 0 & 0
\end{bmatrix}
$$

$$G_{xxxy} = -2G^{(5)}_{dxy} - Q^{(2)}_{faz} + Q^{(2)}_{fbz} + Q^{(3)}_{pz}$$
$$G_{yyxy} = 2G^{(5)}_{dxy} - Q^{(2)}_{faz} - Q^{(2)}_{fbz} + Q^{(3)}_{pz}$$
$$G_{zzxy} = 2Q^{(2)}_{faz} + Q^{(3)}_{pz} + 2Q^{(4)}_{pz}$$
$$G_{yzzx} = -G^{(5)}_{dxy} - Q^{(2)}_{faz} - Q^{(2)}_{fbz} + Q^{(4)}_{pz}$$
$$G_{zxyz} = G^{(5)}_{dxy} - Q^{(2)}_{faz} + Q^{(2)}_{fbz} + Q^{(4)}_{pz}$$

* Rank 4 tensor (as).

$$
\begin{bmatrix}
0 & 0 & 0 & 0 & G_{yzzx} & 0 \\
0 & 0 & 0 & G_{zxyz} & 0 & 0 \\
G_{xyxx} & G_{xyyy} & G_{xyzz} & 0 & 0 & 0
\end{bmatrix}
$$

$$G_{yzzx} = G^{(6)}_{dxy} - Q^{(3)}_{faz} + Q^{(3)}_{fbz} + Q^{(6)}_{pz}$$
$$G_{zxyz} = -G^{(6)}_{dxy} - Q^{(3)}_{faz} - Q^{(3)}_{fbz} + Q^{(6)}_{pz}$$
$$G_{xyxx} = -2G^{(6)}_{dxy} - Q^{(3)}_{faz} + Q^{(3)}_{fbz} + Q^{(5)}_{pz}$$
$$G_{xyyy} = 2G^{(6)}_{dxy} - Q^{(3)}_{faz} - Q^{(3)}_{fbz} + Q^{(5)}_{pz}$$
$$G_{xyzz} = 2Q^{(3)}_{faz} + Q^{(5)}_{pz} + 2Q^{(6)}_{pz}$$

* Rank 4 tensor (s).

$$\begin{bmatrix}
0 & 0 & 0 & 0 & 0 & G_{xxxy} & 0 & 0 & G_{xxyx} \\
0 & 0 & 0 & 0 & 0 & G_{yyxy} & 0 & 0 & G_{yyyx} \\
0 & 0 & 0 & 0 & 0 & G_{zzxy} & 0 & 0 & G_{zzyx} \\
0 & 0 & 0 & 0 & G_{yzzx} & 0 & 0 & G_{yzxz} & 0 \\
0 & 0 & 0 & G_{zxyz} & 0 & 0 & G_{zxzy} & 0 & 0 \\
G_{xyxx} & G_{xyyy} & G_{xyzz} & 0 & 0 & 0 & 0 & 0 & 0
\end{bmatrix}$$

$$G_{xxxy} = G_{dxy}^{(1)} + 2G_{dxy}^{(2)} + G_{dxy}^{(3)} - 2G_{dxy}^{(5)} + G_{gaz}^{(1)} - G_{gbz}^{(1)} - 2Q_{faz}^{(1)} - Q_{faz}^{(2)} + 2Q_{fbz}^{(1)} + Q_{fbz}^{(2)} + 2Q_{pz}^{(1)} + Q_{pz}^{(3)}$$
$$G_{xxyx} = G_{dxy}^{(1)} + 2G_{dxy}^{(2)} + G_{dxy}^{(3)} + 2G_{dxy}^{(5)} + G_{gaz}^{(1)} - G_{gbz}^{(1)} - 2Q_{faz}^{(1)} + Q_{faz}^{(2)} + 2Q_{fbz}^{(1)} - Q_{fbz}^{(2)} + 2Q_{pz}^{(1)} - Q_{pz}^{(3)}$$
$$G_{yyxy} = G_{dxy}^{(1)} + 2G_{dxy}^{(2)} + G_{dxy}^{(3)} + 2G_{dxy}^{(5)} - G_{gaz}^{(1)} - G_{gbz}^{(1)} + 2Q_{faz}^{(1)} - Q_{faz}^{(2)} + 2Q_{fbz}^{(1)} - Q_{fbz}^{(2)} - 2Q_{pz}^{(1)} + Q_{pz}^{(3)}$$
$$G_{yyyx} = G_{dxy}^{(1)} + 2G_{dxy}^{(2)} + G_{dxy}^{(3)} - 2G_{dxy}^{(5)} - G_{gaz}^{(1)} - G_{gbz}^{(1)} + 2Q_{faz}^{(1)} + Q_{faz}^{(2)} + 2Q_{fbz}^{(1)} + Q_{fbz}^{(2)} - 2Q_{pz}^{(1)} - Q_{pz}^{(3)}$$
$$G_{zzxy} = G_{dxy}^{(1)} + G_{dxy}^{(3)} + 2G_{gbz}^{(1)} + 2Q_{faz}^{(2)} - 4Q_{fbz}^{(1)} + Q_{pz}^{(3)} + 2Q_{pz}^{(4)}$$
$$G_{zzyx} = G_{dxy}^{(1)} + G_{dxy}^{(3)} + 2G_{gbz}^{(1)} - 2Q_{faz}^{(2)} - 4Q_{fbz}^{(1)} - Q_{pz}^{(3)} - 2Q_{pz}^{(4)}$$
$$G_{yzzx} = G_{dxy}^{(2)} - G_{dxy}^{(5)} + 2G_{gbz}^{(1)} - 4Q_{faz}^{(1)} - Q_{faz}^{(2)} - Q_{fbz}^{(2)} - Q_{pz}^{(1)} + Q_{pz}^{(4)}$$
$$G_{yzxz} = G_{dxy}^{(2)} + G_{dxy}^{(5)} + 2G_{gbz}^{(1)} - 4Q_{faz}^{(1)} + Q_{faz}^{(2)} + Q_{fbz}^{(2)} - Q_{pz}^{(1)} - Q_{pz}^{(4)}$$
$$G_{zxyz} = G_{dxy}^{(2)} + G_{dxy}^{(5)} + 2G_{gbz}^{(1)} + 4Q_{faz}^{(1)} - Q_{faz}^{(2)} + Q_{fbz}^{(2)} + Q_{pz}^{(1)} + Q_{pz}^{(4)}$$
$$G_{zxzy} = G_{dxy}^{(2)} - G_{dxy}^{(5)} + 2G_{gbz}^{(1)} + 4Q_{faz}^{(1)} + Q_{faz}^{(2)} - Q_{fbz}^{(2)} + Q_{pz}^{(1)} - Q_{pz}^{(4)}$$
$$G_{xyxx} = G_{dxy}^{(1)} + 2G_{dxy}^{(2)} - G_{dxy}^{(3)} + G_{gaz}^{(1)} - G_{gbz}^{(1)} + 2Q_{faz}^{(1)} - 2Q_{fbz}^{(1)} - 2Q_{pz}^{(1)}$$
$$G_{xyyy} = G_{dxy}^{(1)} + 2G_{dxy}^{(2)} - G_{dxy}^{(3)} - G_{gaz}^{(1)} - G_{gbz}^{(1)} - 2Q_{faz}^{(1)} - 2Q_{fbz}^{(1)} + 2Q_{pz}^{(1)}$$
$$G_{xyzz} = G_{dxy}^{(1)} - G_{dxy}^{(3)} + 2G_{gbz}^{(1)} + 4Q_{fbz}^{(1)}$$

* Rank 4 tensor (a).

$$\begin{bmatrix}
0 & 0 & 0 & 0 & G_{yzzx} & 0 & 0 & G_{yzxz} & 0 \\
0 & 0 & 0 & G_{zxyz} & 0 & 0 & G_{zxzy} & 0 & 0 \\
G_{xyxx} & G_{xyyy} & G_{xyzz} & 0 & 0 & 0 & 0 & 0 & 0
\end{bmatrix}$$

$$G_{yzzx} = 2G_{dxy}^{(4)} + G_{dxy}^{(6)} - Q_{faz}^{(3)} + Q_{fbz}^{(3)} - Q_{pz}^{(2)} + Q_{pz}^{(6)}$$
$$G_{yzxz} = -2G_{dxy}^{(4)} + G_{dxy}^{(6)} - Q_{faz}^{(3)} + Q_{fbz}^{(3)} + Q_{pz}^{(2)} + Q_{pz}^{(6)}$$
$$G_{zxyz} = 2G_{dxy}^{(4)} - G_{dxy}^{(6)} - Q_{faz}^{(3)} - Q_{fbz}^{(3)} + Q_{pz}^{(2)} + Q_{pz}^{(6)}$$
$$G_{zxzy} = -2G_{dxy}^{(4)} - G_{dxy}^{(6)} - Q_{faz}^{(3)} - Q_{fbz}^{(3)} - Q_{pz}^{(2)} + Q_{pz}^{(6)}$$
$$G_{xyxx} = -2G_{dxy}^{(6)} - Q_{faz}^{(3)} + Q_{fbz}^{(3)} + Q_{pz}^{(5)}$$
$$G_{xyyy} = 2G_{dxy}^{(6)} - Q_{faz}^{(3)} - Q_{fbz}^{(3)} + Q_{pz}^{(5)}$$
$$G_{xyzz} = 2Q_{faz}^{(3)} + Q_{pz}^{(5)} + 2Q_{pz}^{(6)}$$

* Rank 4 tensor (t).

$$\begin{bmatrix}
0 & G_{xxxy} & 0 \\
G_{yyyx} & 0 & 0 \\
0 & 0 & 0 \\
0 & 0 & 0 \\
0 & G_{zzxy} & 0 \\
G_{xxyx} & 0 & 0 \\
G_{yzzx} & 0 & 0 \\
0 & 0 & 0 \\
0 & G_{xyyy} & 0 \\
0 & 0 & \frac{G_{xxxy}}{2} - \frac{G_{xxyx}}{2} + G_{xyyy} - G_{yyyx} + G_{zzxy}
\end{bmatrix}$$

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$$G_{xxxy} = G_{dxy}^{(1)} + 2G_{dxy}^{(2)} + G_{dxy}^{(3)} - 2G_{dxy}^{(5)} + G_{gaz}^{(1)} - G_{gbz}^{(1)}$$

$$G_{yyyx} = G_{dxy}^{(1)} + 2G_{dxy}^{(2)} + G_{dxy}^{(3)} - 2G_{dxy}^{(5)} - G_{gaz}^{(1)} - G_{gbz}^{(1)}$$

$$G_{zzxy} = G_{dxy}^{(1)} + G_{dxy}^{(3)} + 2G_{gbz}^{(1)}$$

$$G_{xxyx} = G_{dxy}^{(1)} + 2G_{dxy}^{(2)} + G_{dxy}^{(3)} + 2G_{dxy}^{(5)} + G_{gaz}^{(1)} - G_{gbz}^{(1)}$$

$$G_{yzzx} = G_{dxy}^{(2)} - G_{dxy}^{(5)} + 2G_{gbz}^{(1)}$$

$$G_{xyyy} = G_{dxy}^{(1)} + 2G_{dxy}^{(2)} - G_{dxy}^{(3)} - G_{gaz}^{(1)} - G_{gbz}^{(1)}$$