Note: A square-root sign is to be understood over *every* coefficient, *e.g.*, for $-8/15$ read $-\sqrt{8/15}$.

Notation:

J	J	…
M	M	…
m_1	m_2	
m_1	m_2	Coefficients
.	.	
.	.	

$$Y_1^0 = \sqrt{\frac{3}{4\pi}}\cos\theta$$

$$Y_1^1 = -\sqrt{\frac{3}{8\pi}}\sin\theta\,e^{i\phi}$$

$$Y_2^0 = \sqrt{\frac{5}{4\pi}}\left(\frac{3}{2}\cos^2\theta - \frac{1}{2}\right)$$

$$Y_2^1 = -\sqrt{\frac{15}{8\pi}}\sin\theta\cos\theta\,e^{i\phi}$$

$$Y_2^2 = \frac{1}{4}\sqrt{\frac{15}{2\pi}}\sin^2\theta\,e^{2i\phi}$$

$$Y_\ell^{-m} = (-1)^m Y_\ell^{m*}$$

$$d_{m,0}^\ell = \sqrt{\frac{4\pi}{2\ell+1}}\,Y_\ell^m\,e^{-im\phi}$$

$$\langle j_1 j_2 m_1 m_2 | j_1 j_2 JM\rangle = (-1)^{J-j_1-j_2}\langle j_2 j_1 m_2 m_1 | j_2 j_1 JM\rangle$$

$$d_{m',m}^j = (-1)^{m-m'}d_{m,m'}^j = d_{-m,-m'}^j$$

$$d_{0,0}^1 = \cos\theta \qquad d_{1/2,1/2}^{1/2} = \cos\frac{\theta}{2} \qquad d_{1,1}^1 = \frac{1+\cos\theta}{2}$$

$$d_{1/2,-1/2}^{1/2} = -\sin\frac{\theta}{2} \qquad d_{1,0}^1 = -\frac{\sin\theta}{\sqrt{2}}$$

$$d_{1,-1}^1 = \frac{1-\cos\theta}{2}$$

$$d_{3/2,3/2}^{3/2} = \frac{1+\cos\theta}{2}\cos\frac{\theta}{2}$$

$$d_{3/2,1/2}^{3/2} = -\sqrt{3}\frac{1+\cos\theta}{2}\sin\frac{\theta}{2} \qquad d_{2,2}^2 = \left(\frac{1+\cos\theta}{2}\right)^2$$

$$d_{3/2,-1/2}^{3/2} = \sqrt{3}\frac{1-\cos\theta}{2}\cos\frac{\theta}{2} \qquad d_{2,1}^2 = -\frac{1+\cos\theta}{2}\sin\theta$$

$$d_{3/2,-3/2}^{3/2} = -\frac{1-\cos\theta}{2}\sin\frac{\theta}{2} \qquad d_{2,0}^2 = \frac{\sqrt{6}}{4}\sin^2\theta \qquad d_{1,1}^2 = \frac{1+\cos\theta}{2}(2\cos\theta - 1)$$

$$d_{1/2,1/2}^{3/2} = \frac{3\cos\theta - 1}{2}\cos\frac{\theta}{2} \qquad d_{2,-1}^2 = -\frac{1-\cos\theta}{2}\sin\theta \qquad d_{1,0}^2 = -\sqrt{\frac{3}{2}}\sin\theta\cos\theta$$

$$d_{1/2,-1/2}^{3/2} = -\frac{3\cos\theta + 1}{2}\sin\frac{\theta}{2} \qquad d_{2,-2}^2 = \left(\frac{1-\cos\theta}{2}\right)^2 \qquad d_{1,-1}^2 = \frac{1-\cos\theta}{2}(2\cos\theta + 1) \qquad d_{0,0}^2 = \left(\frac{3}{2}\cos^2\theta - \frac{1}{2}\right)$$

Clebsch-Gordan coefficient tables for $1/2\times1/2$, $1\times1/2$, 2×1, 1×1, $2\times1/2$, $3/2\times1/2$, $3/2\times1$, $3/2\times3/2$, $2\times3/2$, 2×2.