$$K_9^2 = \begin{bmatrix} \frac{-3\,U}{t} & \frac{\frac{\mathbf{i}}{2}\left(\mathbf{i}+\sqrt{3}\right)U^2}{\sqrt{2}\,t^2} & \frac{3\left(1+\mathbf{i}\sqrt{3}\right)U}{2\sqrt{2}\,t} & -4 \\ \frac{\frac{-\mathbf{i}}{2}\left(-\mathbf{i}+\sqrt{3}\right)U^2}{\sqrt{2}\,t^2} & \frac{-9\,U}{2\,t} & \frac{\left(1-\mathbf{i}\sqrt{3}\right)\left(8\,t^2-U^2\right)}{4\,t^2} & \frac{\frac{-\mathbf{i}}{2}\left(-\mathbf{i}+\sqrt{3}\right)U}{\sqrt{2}\,t} \\ \frac{3\left(1-\mathbf{i}\sqrt{3}\right)U}{2\sqrt{2}\,t} & \frac{\left(1+\mathbf{i}\sqrt{3}\right)\left(8\,t^2-U^2\right)}{4\,t^2} & \frac{-U}{2\,t} & 0 \\ -4 & \frac{\frac{\mathbf{i}}{2}\left(\mathbf{i}+\sqrt{3}\right)U}{\sqrt{2}\,t} & 0 & -\left(\frac{U}{t}\right) \end{bmatrix}$$