$$
H_{145} = \left[\begin{array}{cccccccccccccccccc}
2\,h-6\,\mu+U & \frac{7\,t}{12}+\frac{\mathbf{i}\,\frac{1}{4}\,t}{\sqrt{3}} & 0 & \frac{t}{\sqrt{3}} & 0 & \frac{\mathbf{i}\,\frac{1}{2}\,t}{\sqrt{3}}-\frac{5\,t}{2\,\sqrt{6}} & \frac{-\mathbf{i}\,\frac{1}{2}\,t}{\sqrt{2}}-\frac{5\,t}{2\,\sqrt{6}} & 0 & 0 & 0 & 0 & \mathbf{i}\,\sqrt{\frac{7}{3}}\,t-\frac{\sqrt{7}\,t}{3} & 0 & 0 & 0 & \mathbf{i}\,\frac{1}{4}\,t-\frac{t}{4\,\sqrt{3}} \\
\frac{7\,t}{12}-\frac{\mathbf{i}\,\frac{1}{4}\,t}{\sqrt{3}} & 2\,h-6\,\mu+U & 0 & 0 & \mathbf{i}\,\frac{1}{2}\,t+\frac{7\,t}{2\,\sqrt{3}} & 0 & 0 & 0 & 0 & 0 & \frac{t}{3\,\sqrt{2}}-\frac{\mathbf{i}\,t}{\sqrt{6}} & 0 & \frac{\sqrt{\frac{18-6\,\sqrt{3}}{2}}\,t}{2\,\left(-3+\sqrt{3}\right)}+\frac{5\,\sqrt{\frac{6-2\,\sqrt{3}}{2}}\,t}{2\,\left(-3+\sqrt{3}\right)}+\mathbf{i}\,\left(\frac{-\left(\sqrt{\frac{3\,\left(18-6\,\sqrt{3}\right)}{2}}\,t\right)}{2\,\left(-3+\sqrt{3}\right)}+\frac{\sqrt{\frac{3\,\left(6-2\,\sqrt{3}\right)}{2}}\,t}{2\,\left(-3+\sqrt{3}\right)}\right) & \frac{-t}{2\,\sqrt{3+\sqrt{3}}}+\frac{5\,t}{2\,\sqrt{3\,\left(3+\sqrt{3}\right)}}+\mathbf{i}\,\left(\frac{-\left(\sqrt{\frac{3}{3+\sqrt{3}}}\,t\right)}{2}-\frac{3\,t}{2\,\sqrt{3+\sqrt{3}}}\right) & \frac{3\,\mathbf{i}}{4}\,t+\frac{\sqrt{3}\,t}{4} & 0 \\
0 & 0 & 2\,h-6\,\mu+2\,U & \frac{\mathbf{i}}{2}\,\sqrt{\frac{3}{2}}\,t-\frac{5\,t}{2\,\sqrt{2}} & 0 & 0 & 0 & 0 & \frac{\sqrt{\frac{7}{2}}\,t}{2}-\frac{\mathbf{i}\,\frac{1}{2}\,t}{\sqrt{2}} & 0 & 0 & 0 & 0 & 0 & 0 & \sqrt{2}\,t-\mathbf{i}\,\sqrt{6}\,t \\
\frac{t}{\sqrt{3}} & 0 & \frac{-\mathbf{i}}{2}\,\sqrt{\frac{3}{2}}\,t-\frac{5\,t}{2\,\sqrt{2}} & 2\,h-6\,\mu+2\,U & \frac{-t}{4}+\frac{3\,\mathbf{i}}{4}\,\sqrt{3}\,t & 0 & 0 & \sqrt{\frac{7}{2}}\,t+\frac{\mathbf{i}}{2}\,t & 0 & \frac{-3\,\mathbf{i}}{4}\,t-\frac{\sqrt{3}\,t}{4} & -\left(\sqrt{\frac{7}{2}}\,t\right)-\mathbf{i}\,\sqrt{2}\,t & 0 & 0 & 0 & \frac{-3\,t}{2}+\frac{\mathbf{i}}{2}\,\sqrt{3}\,t & 0 \\
0 & \frac{-\mathbf{i}}{2}\,t+\frac{7\,t}{2\,\sqrt{3}} & 0 & \frac{-t}{4}-\frac{3\,\mathbf{i}}{4}\,\sqrt{3}\,t & 2\,h-6\,\mu+2\,U & \frac{t}{\sqrt{2}} & -\left(\frac{t}{\sqrt{2}}\right) & 0 & \frac{3\,\mathbf{i}}{4}\,t-\frac{\sqrt{3}\,t}{4} & 0 & \sqrt{\frac{7}{3}}\,t-\mathbf{i}\,\sqrt{2}\,t & 0 & 0 & 0 & \frac{t}{2}+\frac{\mathbf{i}}{2}\,\sqrt{3}\,t & \\
\frac{\mathbf{i}\,\frac{1}{2}\,t}{\sqrt{2}}-\frac{5\,t}{2\,\sqrt{6}} & 0 & 0 & 0 & \frac{t}{\sqrt{2}} & 2\,h-6\,\mu+U & 0 & 0 & 0 & -\left(\sqrt{\frac{7}{3}}\,t\right) & \frac{-2\,t}{\sqrt{3}} & 0 & 0 & \frac{-\mathbf{i}}{2}\,\sqrt{\frac{7}{2}}\,t+\frac{3\,t}{2\,\sqrt{2}} & 0 & \\
\frac{\mathbf{i}\,\frac{1}{2}\,t}{\sqrt{2}}-\frac{5\,t}{2\,\sqrt{6}} & 0 & 0 & 0 & -\left(\frac{t}{\sqrt{2}}\right) & 0 & 2\,h-6\,\mu+U & 0 & 0 & \sqrt{\frac{7}{2}}\,t & \mathbf{i}\,t+\frac{t}{\sqrt{3}} & 0 & 0 & \frac{-\mathbf{i}}{2}\,\sqrt{\frac{7}{2}}\,t-\frac{t}{2\,\sqrt{2}} & 0 & \\
0 & 0 & 0 & \frac{\sqrt{\frac{7}{2}}\,t}{2}-\frac{\mathbf{i}\,\frac{1}{2}\,t}{\sqrt{2}} & 0 & 0 & 0 & 2\,h-6\,\mu+2\,U & \frac{-\mathbf{i}}{2}\,\sqrt{\frac{3}{2}}\,t-\frac{3\,t}{2\,\sqrt{2}} & 0 & 0 & 0 & 0 & 0 & 0 & \\
0 & 0 & \frac{\sqrt{\frac{7}{2}}\,t}{2}+\frac{\mathbf{i}\,\frac{1}{2}\,t}{\sqrt{2}} & 0 & \frac{-3\,\mathbf{i}}{4}\,t-\frac{\sqrt{3}\,t}{4} & 0 & 0 & \frac{\mathbf{i}}{2}\,\sqrt{\frac{3}{2}}\,t-\frac{3\,t}{2\,\sqrt{2}} & 2\,h-6\,\mu+2\,U & \frac{-3\,t}{4}+\frac{\mathbf{i}}{4}\,\sqrt{3}\,t & 0 & 0 & 0 & \frac{-3\,\mathbf{i}}{2}\,t+\frac{\sqrt{3}\,t}{2} & 0 & \\
0 & 0 & 0 & \frac{3\,\mathbf{i}}{4}\,t-\frac{\sqrt{3}\,t}{4} & 0 & -\left(\sqrt{\frac{3}{2}}\,t\right) & \sqrt{\frac{3}{2}}\,t & 0 & \frac{-3\,t}{4}-\frac{\mathbf{i}}{4}\,\sqrt{3}\,t & 2\,h-6\,\mu+2\,U & 0 & 0 & 0 & 0 & 0 & \\
0 & \frac{t}{3\,\sqrt{2}}+\frac{\mathbf{i}\,t}{\sqrt{6}} & 0 & -\left(\sqrt{\frac{2}{3}}\,t\right)+\mathbf{i}\,\sqrt{2}\,t & 0 & \frac{-2\,t}{\sqrt{3}} & -\mathbf{i}\,t+\frac{t}{\sqrt{3}} & 0 & 0 & 0 & 2\,h-6\,\mu+U & \frac{-5\,t}{6}+\frac{\mathbf{i}\,\frac{1}{2}\,t}{\sqrt{3}} & 0 & 0 & \frac{-\mathbf{i}\,t}{\sqrt{2}}-\frac{t}{\sqrt{6}} & \\
-\mathbf{i}\,\sqrt{\frac{2}{3}}\,t-\frac{\sqrt{2}\,t}{3} & 0 & 0 & 0 & \sqrt{\frac{2}{3}}\,t+\mathbf{i}\,\sqrt{2}\,t & 0 & 0 & 0 & 0 & 0 & \frac{-5\,t}{6}-\frac{\mathbf{i}\,\frac{1}{2}\,t}{\sqrt{3}} & 2\,h-6\,\mu+U & \frac{-5\,\sqrt{\frac{7}{2}}\,t}{\left(-3\,\sqrt{3}\right)^{\frac{3}{2}}}+\frac{7\,t}{\sqrt{2}\,\left(3-\sqrt{3}\right)^{\frac{3}{2}}}+\mathbf{i}\,\left(\frac{3\,\sqrt{\frac{7}{2}}\,t}{\left(-3\,\sqrt{3}\right)^{\frac{3}{2}}}-\frac{3\,t}{\sqrt{2}\,\left(3-\sqrt{3}\right)^{\frac{3}{2}}}\right) & 2\,\sqrt{\frac{2}{3\,\left(3+\sqrt{3}\right)}}\,t+\mathbf{i}\,\sqrt{\frac{3}{2\,\left(3+\sqrt{3}\right)}}\,t+\frac{t}{\sqrt{2\,\left(3+\sqrt{3}\right)}} & 0 & 0 & \\
0 & \frac{\sqrt{\frac{18-6\,\sqrt{3}}{2}}\,t}{2\,\left(-3+\sqrt{3}\right)}+\frac{5\,\sqrt{\frac{6-2\,\sqrt{3}}{2}}\,t}{2\,\left(-3+\sqrt{3}\right)}+\mathbf{i}\,\left(\frac{\sqrt{\frac{3\,\left(18-6\,\sqrt{3}\right)}{2}}\,t}{2\,\left(-3+\sqrt{3}\right)}-\frac{\sqrt{\frac{3\,\left(6-2\,\sqrt{3}\right)}{2}}\,t}{2\,\left(-3+\sqrt{3}\right)}\right) & 0 & 0 & 0 & 0 & 0 & 0 & 0 & \frac{-5\,\sqrt{\frac{7}{2}}\,t}{\left(-3\,\sqrt{3}\right)^{\frac{3}{2}}}+\frac{7\,t}{\sqrt{2}\,\left(3-\sqrt{3}\right)^{\frac{3}{2}}}+\mathbf{i}\,\left(\frac{-3\,\sqrt{\frac{7}{2}}\,t}{\left(-3\,\sqrt{3}\right)^{\frac{3}{2}}}+\frac{3\,t}{\sqrt{2}\,\left(3-\sqrt{3}\right)^{\frac{3}{2}}}\right) & 2\,h-6\,\mu & 0 & 0 & \frac{-\left(\sqrt{\frac{3\,\left(18-6\,\sqrt{3}\right)}{2}}\,t\right)}{2\,\left(-3+\sqrt{3}\right)}-\frac{\sqrt{\frac{6-2\,\sqrt{3}}{2}}\,t}{2\,\left(-3+\sqrt{3}\right)}+\mathbf{i}\,\left(\frac{\sqrt{\frac{18-6\,\sqrt{3}}{2}}\,t}{2\,\left(-3+\sqrt{3}\right)}+\frac{3\,\sqrt{\frac{6-2\,\sqrt{3}}{2}}\,t}{2\,\left(-3+\sqrt{3}\right)}\right) & \\
0 & \frac{-t}{2\,\sqrt{3+\sqrt{3}}}+\frac{5\,t}{2\,\sqrt{3\,\left(3+\sqrt{3}\right)}}+\mathbf{i}\,\left(\frac{\sqrt{\frac{3}{3+\sqrt{3}}}\,t}{2}+\frac{3\,t}{2\,\sqrt{3+\sqrt{3}}}\right) & 0 & 0 & 0 & 0 & 0 & 0 & 0 & 2\,\sqrt{\frac{2}{3\,\left(3+\sqrt{3}\right)}}\,t-\mathbf{i}\,\sqrt{\frac{3}{2\,\left(3+\sqrt{3}\right)}}\,t+\frac{t}{\sqrt{2\,\left(3+\sqrt{3}\right)}} & 0 & 2\,h-6\,\mu & 0 & \frac{\sqrt{\frac{3}{3+\sqrt{3}}}\,t}{2}-\frac{t}{2\,\sqrt{3+\sqrt{3}}}+\mathbf{i}\,\left(\frac{\sqrt{\frac{3}{3+\sqrt{3}}}\,t}{2}-\frac{3\,t}{2\,\sqrt{3+\sqrt{3}}}\right) & \\
0 & \frac{-3\,\mathbf{i}}{4}\,t+\frac{\sqrt{3}\,t}{4} & 0 & \frac{-3\,t}{2}-\frac{\mathbf{i}}{2}\,\sqrt{3}\,t & 0 & \frac{\mathbf{i}}{2}\,\sqrt{\frac{3}{2}}\,t+\frac{3\,t}{2\,\sqrt{2}} & \frac{\mathbf{i}}{2}\,\sqrt{\frac{7}{2}}\,t-\frac{t}{2\,\sqrt{2}} & 0 & \frac{3\,\mathbf{i}}{2}\,t+\frac{\sqrt{3}\,t}{2} & 0 & 0 & 0 & 2\,h-6\,\mu+U & \frac{3\,\mathbf{i}}{4}+\frac{1}{4}\,\sqrt{3}\,t & \\
\frac{-\mathbf{i}}{4}\,t-\frac{t}{4\,\sqrt{3}} & 0 & \sqrt{2}\,t+\mathbf{i}\,\sqrt{6}\,t & 0 & \frac{t}{2}-\frac{\mathbf{i}}{2}\,\sqrt{3}\,t & 0 & 0 & 0 & 0 & 0 & \frac{\mathbf{i}\,t}{\sqrt{2}}-\frac{t}{\sqrt{6}} & 0 & \frac{t}{\sqrt{12-4\,\sqrt{3}}}+\frac{\sqrt{9-3\,\sqrt{3}}\,t}{6-2\,\sqrt{3}}+\mathbf{i}\,\left(\frac{3\,t}{\sqrt{12-4\,\sqrt{3}}}+\frac{\sqrt{9-3\,\sqrt{3}}\,t}{6-2\,\sqrt{3}}\right) & \frac{\sqrt{\frac{3}{3+\sqrt{3}}}\,t}{2}-\frac{t}{2\,\sqrt{3+\sqrt{3}}}+\mathbf{i}\,\left(\frac{-\left(\sqrt{\frac{3}{3+\sqrt{3}}}\,t\right)}{2}+\frac{3\,t}{2\,\sqrt{3+\sqrt{3}}}\right) & \frac{3\,\mathbf{i}}{4}-\frac{1}{4}\,\sqrt{3}\,t & 2\,h-6\,\mu+U &
\end{array}\right]
$$