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Hugoniot model for Si from L140

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1 Contents of the data table

In this document, we provide the Hugoniot for silicon from LEOS table L140. The Hugoniot pressures are supplied for temperatures between 298.0 and 1.16×10^9 Kelvin and densities of 2.329 and 10.07 *g/cc*. This EOS model was developed by the quotidian EOS methodology, which is a widely used and robust method for producing tabular EOS data.[1, 2] Table 1 lists the included quantities and units of those data.

Table 1: Hugoniot model for Si based on L140

Density (g/cc)	Temperature (Kelvin)	Pressure (Mbar)
2.329000e+00	2.980000e+02	-1.725104e-04
2.455237e+00	2.980000e+02	3.885352e-02
2.575666e+00	2.660506e+02	7.576774e-02
2.650981e+00	2.341012e+02	9.819944e-02
2.727973e+00	2.021518e+02	1.202588e-01
2.814734e+00	1.702024e+02	1.437159e-01
2.992937e+00	1.702024e+02	1.852842e-01
3.257813e+00	2.021518e+02	2.326462e-01
3.400244e+00	2.341012e+02	2.566504e-01
3.469949e+00	2.660506e+02	2.695064e-01
3.520115e+00	2.980000e+02	2.796018e-01
3.551967e+00	3.299494e+02	2.864883e-01
3.591192e+00	3.653242e+02	2.954094e-01
3.627996e+00	4.044916e+02	3.042594e-01
3.662789e+00	4.478582e+02	3.130876e-01
3.696655e+00	4.958743e+02	3.222261e-01
3.729909e+00	5.490383e+02	3.318181e-01
3.762359e+00	6.079022e+02	3.418020e-01
3.794241e+00	6.730771e+02	3.523147e-01
3.825533e+00	7.452395e+02	3.634155e-01
3.856276e+00	8.251386e+02	3.751791e-01
3.886553e+00	9.136040e+02	3.877014e-01
3.916399e+00	1.011554e+03	4.010795e-01
3.945818e+00	1.120005e+03	4.154083e-01
3.974820e+00	1.240084e+03	4.307967e-01
4.003421e+00	1.373037e+03	4.473684e-01
4.031632e+00	1.520244e+03	4.652589e-01
4.059433e+00	1.683234e+03	4.846085e-01
4.086795e+00	1.863698e+03	5.055670e-01
4.113789e+00	2.063510e+03	5.283530e-01
4.140605e+00	2.284744e+03	5.532905e-01
4.167222e+00	2.529698e+03	5.806480e-01
4.193466e+00	2.800914e+03	6.106115e-01
4.218826e+00	3.101207e+03	6.429563e-01
4.243571e+00	3.433696e+03	6.781346e-01
4.268180e+00	3.801832e+03	7.170630e-01
4.292668e+00	4.209437e+03	7.603720e-01
4.317000e+00	4.660742e+03	8.084890e-01
4.341099e+00	5.160433e+03	8.598420e-01
4.368370e+00	5.713697e+03	9.120982e-01
4.396508e+00	6.326278e+03	9.688200e-01
4.425417e+00	7.004535e+03	1.031742e+00
4.455118e+00	7.755510e+03	1.101305e+00
4.485628e+00	8.587000e+03	1.178451e+00
4.517278e+00	9.507635e+03	1.264350e+00
4.549988e+00	1.052697e+04	1.360007e+00
4.584044e+00	1.165560e+04	1.467009e+00
4.619652e+00	1.290523e+04	1.586994e+00
4.656850e+00	1.428883e+04	1.721818e+00
4.695884e+00	1.582078e+04	1.873724e+00

Density (g/cc)	Temperature (Kelvin)	Pressure (Mbar)
4.736920e+00	1.751697e+04	2.045299e+00
4.780129e+00	1.939501e+04	2.239550e+00
4.825789e+00	2.147440e+04	2.459996e+00
4.874007e+00	2.377673e+04	2.710670e+00
4.925131e+00	2.632590e+04	2.996300e+00
4.979321e+00	2.914837e+04	3.322332e+00
5.036881e+00	3.227344e+04	3.695012e+00
5.098066e+00	3.573357e+04	4.121514e+00
5.163158e+00	3.956466e+04	4.610097e+00
5.232478e+00	4.380650e+04	5.170016e+00
5.306363e+00	4.850311e+04	5.812009e+00
5.385227e+00	5.370326e+04	6.548117e+00
5.469046e+00	5.946093e+04	7.392156e+00
5.557793e+00	6.583590e+04	8.359845e+00
5.651669e+00	7.289435e+04	9.468465e+00
5.750919e+00	8.070955e+04	1.073786e+01
5.855744e+00	8.936264e+04	1.219034e+01
5.966505e+00	9.894345e+04	1.385069e+01
6.083401e+00	1.095514e+05	1.574770e+01
6.206871e+00	1.212968e+05	1.791244e+01
6.337253e+00	1.343013e+05	2.038112e+01
6.475040e+00	1.487001e+05	2.319333e+01
6.620782e+00	1.646427e+05	2.639347e+01
6.776165e+00	1.822944e+05	3.002838e+01
6.942169e+00	2.018387e+05	3.415334e+01
7.117730e+00	2.234784e+05	3.884164e+01
7.301052e+00	2.474381e+05	4.417911e+01
7.489548e+00	2.739667e+05	5.027135e+01
7.680143e+00	3.033394e+05	5.724225e+01
7.869649e+00	3.358612e+05	6.523635e+01
8.055262e+00	3.718698e+05	7.442038e+01
8.234593e+00	4.117390e+05	8.498210e+01
8.406387e+00	4.558826e+05	9.713456e+01
8.572168e+00	5.047590e+05	1.110900e+02
8.733415e+00	5.588756e+05	1.270909e+02
8.891011e+00	6.187942e+05	1.454124e+02
9.045531e+00	6.851368e+05	1.663677e+02
9.197278e+00	7.585922e+05	1.903143e+02
9.346328e+00	8.399229e+05	2.176494e+02
9.492515e+00	9.299733e+05	2.488321e+02
9.635547e+00	1.029678e+06	2.843662e+02
9.774842e+00	1.140073e+06	3.248328e+02
9.909698e+00	1.262303e+06	3.708740e+02
1.003917e+01	1.397638e+06	4.232165e+02
1.016227e+01	1.547483e+06	4.826744e+02
1.027733e+01	1.713393e+06	5.501659e+02
1.038248e+01	1.897090e+06	6.267420e+02
1.047629e+01	2.100482e+06	7.135277e+02
1.055772e+01	2.325681e+06	8.117794e+02
1.062624e+01	2.575023e+06	9.228206e+02
1.068161e+01	2.851099e+06	1.048085e+03
1.072392e+01	3.156773e+06	1.189096e+03
1.075354e+01	3.495219e+06	1.347433e+03
1.077081e+01	3.869951e+06	1.524813e+03

Density (g/cc)	Temperature (Kelvin)	Pressure (Mbar)
1.077651e+01	4.284859e+06	1.722948e+03
1.077112e+01	4.744250e+06	1.943716e+03
1.075557e+01	5.252894e+06	2.189018e+03
1.073056e+01	5.816071e+06	2.460851e+03
1.069704e+01	6.439628e+06	2.761404e+03
1.065597e+01	7.130038e+06	3.092863e+03
1.060823e+01	7.894468e+06	3.457804e+03
1.055509e+01	8.740856e+06	3.858889e+03
1.049734e+01	9.677987e+06	4.299163e+03
1.043627e+01	1.071559e+07	4.782122e+03
1.037280e+01	1.186444e+07	5.311533e+03
1.030791e+01	1.313646e+07	5.891913e+03
1.024263e+01	1.454485e+07	6.528215e+03
1.017760e+01	1.610424e+07	7.226094e+03
1.011370e+01	1.783082e+07	7.992046e+03
1.005139e+01	1.974252e+07	8.833175e+03
9.991181e+00	2.185916e+07	9.757642e+03
9.933440e+00	2.420274e+07	1.077450e+04
9.878332e+00	2.679759e+07	1.189377e+04
9.826164e+00	2.967063e+07	1.312676e+04
9.776930e+00	3.285170e+07	1.448581e+04
9.730768e+00	3.637382e+07	1.598478e+04
9.687637e+00	4.027355e+07	1.763894e+04
9.647497e+00	4.459139e+07	1.946514e+04
9.610313e+00	4.937216e+07	2.148221e+04
9.575936e+00	5.466548e+07	2.371075e+04
9.544314e+00	6.052631e+07	2.617378e+04
9.515261e+00	6.701550e+07	2.889660e+04
9.488689e+00	7.420042e+07	3.190728e+04
9.464428e+00	8.215565e+07	3.523692e+04
9.442341e+00	9.096378e+07	3.891979e+04
9.422296e+00	1.007163e+08	4.299404e+04
9.404132e+00	1.115143e+08	4.750163e+04
9.387739e+00	1.234701e+08	5.248922e+04
9.372956e+00	1.367076e+08	5.800834e+04
9.359688e+00	1.513644e+08	6.411601e+04
9.347791e+00	1.675926e+08	7.087548e+04
9.337166e+00	1.855607e+08	7.835659e+04
9.327703e+00	2.054551e+08	8.663680e+04
9.319298e+00	2.274825e+08	9.580176e+04
9.311869e+00	2.518716e+08	1.059463e+05
9.305314e+00	2.788754e+08	1.171756e+05
9.299573e+00	3.087744e+08	1.296056e+05
9.294553e+00	3.418789e+08	1.433653e+05
9.290196e+00	3.785327e+08	1.585969e+05
9.286436e+00	4.191162e+08	1.754584e+05
9.283212e+00	4.640508e+08	1.941244e+05
9.280479e+00	5.138030e+08	2.147880e+05
9.278176e+00	5.688892e+08	2.376636e+05
9.276274e+00	6.298813e+08	2.629879e+05
9.274718e+00	6.974126e+08	2.910235e+05
9.273480e+00	7.721841e+08	3.220607e+05
9.272521e+00	8.549721e+08	3.564213e+05
9.271815e+00	9.466360e+08	3.944611e+05
9.271336e+00	1.048127e+09	4.365744e+05
9.271038e+00	1.160500e+09	4.831984e+05

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