# Application Guide

## Reference Data

### Physical Properties

#### of Solids, Liquids and Gases

**Properties of Metals in Liquid State—Ref. 134**

<table>
<thead>
<tr>
<th>Material</th>
<th>Melting Point °F (°C)</th>
<th>Heat of Fusion Btu/lb.</th>
<th>Temperature °F</th>
<th>Density lb./ft³</th>
<th>Specific Heat Capacity Btu lb.-°F</th>
<th>Thermal Conductivity Btu-in. hr.-°F²</th>
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</thead>
<tbody>
<tr>
<td>Aluminum</td>
<td>1220.4 (660.2)</td>
<td>173</td>
<td>1220</td>
<td>148.6</td>
<td>0.26</td>
<td>717</td>
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<td>1292</td>
<td>147.7</td>
<td>0.26</td>
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<td>1454</td>
<td>147.7</td>
<td>0.26</td>
<td>842</td>
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<tr>
<td>Bismuth</td>
<td>520 (271)</td>
<td>21.6</td>
<td>572</td>
<td>626.2</td>
<td>0.034 @ 520°F</td>
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<td>618.7</td>
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<td>1112</td>
<td>603.1</td>
<td>0.0376</td>
<td>107.4</td>
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<tr>
<td>Cadmium</td>
<td>609 (321)</td>
<td>23.8</td>
<td>626</td>
<td>500</td>
<td>0.0632</td>
<td>307.7</td>
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<td>662</td>
<td>498.8</td>
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<td>680</td>
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<td>0.0632</td>
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<td>752</td>
<td>495</td>
<td>0.0632</td>
<td>305</td>
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<tr>
<td>Gold</td>
<td>1945 (1063)</td>
<td>26.9</td>
<td>2012</td>
<td>1076</td>
<td>0.0355</td>
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<tr>
<td>Lead</td>
<td>621 (327.4)</td>
<td>10.6</td>
<td>700</td>
<td>655.5</td>
<td>0.038</td>
<td>111.6</td>
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<td>932</td>
<td>648.7</td>
<td>0.037</td>
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<td>Lithium</td>
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<td>392</td>
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<td>752</td>
<td>31</td>
<td>1.0</td>
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<td>Magnesium</td>
<td>1204 (651)</td>
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<td>1328</td>
<td>94.3</td>
<td>0.321</td>
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<td>1341</td>
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<tr>
<td>Mercury</td>
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<td>32</td>
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<td>0.03334</td>
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<td>818.8</td>
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<td>Potassium</td>
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<td>300</td>
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<td>46.6</td>
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<td>596.5</td>
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<td>1832</td>
<td>578.1</td>
<td>0.0692</td>
<td>556.8</td>
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<td>574.4</td>
<td>0.0692</td>
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<td>57.9</td>
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<td>400</td>
<td>56.2</td>
<td>0.320</td>
<td>493.8</td>
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<td>53.3</td>
<td>0.301</td>
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<td>Solder</td>
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<td>375 (190.6)</td>
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</table>

To convert to kg/m³ multiply lb/ft³ by 16.02
To convert to kJ/kg multiply Btu/lb by 2.326
To convert to kJ/kg-°C multiply Btu/lb-°F by 4.187
To convert to W/m-°C multiply Btu-in/hr-ft²-°F by 0.1442