

Table 3.4.2 B: Wheel Weights – Copper

Technical/ Performance Parameter	Measure/Metric	Source of Information
<i>Component/End-product</i>		
<p><u>Key</u> physical characteristics</p>	<p>Density: The density of copper is 8.96 g/cm³ vs. 11.34 g/cm³ for lead, which means that, for a given weight size (mass), a copper weight will be 27% larger volume than a lead weight. (MatWeb)</p> <p>Melting Point: At 1980° F, the melting point of copper is significantly higher than the 622° F melting point of lead and well above the maximum operating temperatures required for wheel weights. (MatWeb)</p> <p>Corrosion resistance: Copper has good resistance to atmospheric corrosion. However, it develops a protective coating that over time thickens to give a green patina, which would be unacceptable for wheel weight applications. Therefore, copper weights require a protective coating. (Corrosion Doctors)</p> <p>A manufacturer of copper adhesive wheel weights states that its copper weights are coated to meet OE standards. (Trax)</p> <p>Malleability: Like lead, copper is very malleable.</p> <p>Hardness:</p> <p style="padding-left: 40px;">Annealed Copper, Vickers: 50 Lead, Brinell: 4.2 Lead, Vickers: 5</p> <p>(MatWeb)</p> <p>Recyclability – Copper can be recycled without any loss of quality. Copper recovered from refined or remelted scrap composes 30% of the total U.S. copper supply.</p>	<p>MatWeb, 2006</p> <p>Corrosion Doctors, 2006.</p> <p>Trax, 2006</p> <p>Edelstein, 2006.</p>