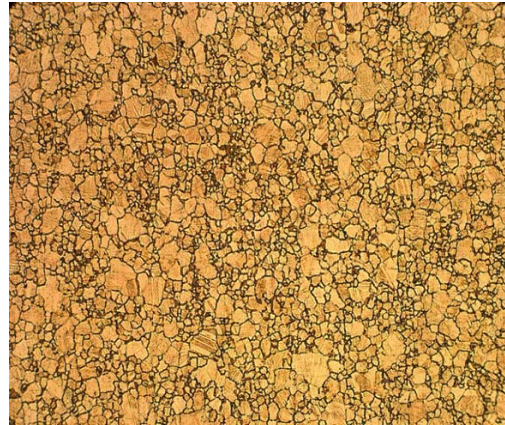


Avoid the risk of premature failure.....  
 Use Materion Brush Performance Alloys’  
 Patented **Omega Alloy 25** AMS 4533 and AMS 4535 for your high  
 performance aircraft bearings and bushings



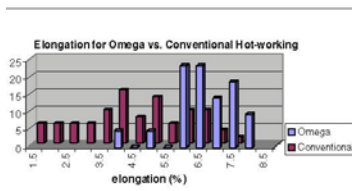
**Figure 1:** Duplex grain structure of standard hot-worked copper beryllium



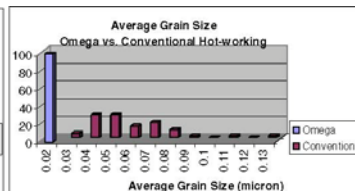
**Figure 2:** Uniform grain structure of Materion Brush Performance Alloys Omega-Processed copper beryllium

Materion Brush Performance Alloys sells reliability with its **Omega-Processed** copper beryllium. The fine microstructure of **Omega-Processed** copper beryllium results from our patented thermo-mechanical processing of cast copper beryllium billets. Standard hot-working of copper beryllium can leave large regions of metal unrecrystallized as shown in Figure 1. These large regions serve to localize the stress in the material, resulting in lower fatigue strength and fracture resistance. The fully recrystallized, fine, uniform grains in **Omega-Processed** copper beryllium, shown in Figure 2, better distribute the stresses in the metal, resulting in improved ductility, fracture resistance and fatigue strength.

The benefits of **Omega Processing** are most clearly seen by looking at its affect on the elongation and average grain size. As shown in Figure 3, **Omega-Processed** copper beryllium has markedly improved elongation. This results from its finer and more uniform grain structure, as is shown in Figure 4. Repeatedly hot-working copper beryllium through conventional means can reduce the average grain size to that achieved by **Omega Processing**; however, it still is possible there are a few unrecrystallized regions. **Omega Processing** converts the cast structure in the entire volume in one “violent” mechanical process. **Omega Processing** gets it right the first time.



**Figure 3:** Elongation improvements in **Omega** copper beryllium



**Figure 4:** Grain size improvements in **Omega** material

**Omega-Processed** copper beryllium exceeds all the requirements of AMS 4533 and AMS 4535.

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For plate, tube, bar, and rod 0.4" (10 mm) diameter and over

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