

Avoid the risk of premature failure....
 Use Materion 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

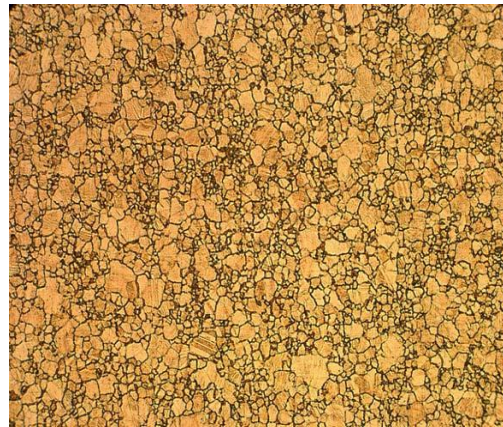
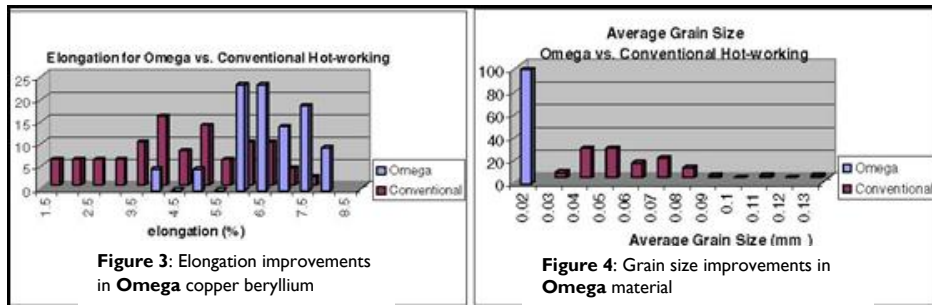


Figure 2: Uniform grain structure of Materion Brush Performance Alloys Omega-Processed copper beryllium

Materion 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.



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

RELATED INFORMATION

Additional technical or safe handling information on Alloy 25 tube may be obtained by phoning 800-375-4205. For pricing and availability, phone 800-521-8800, or the local sales number listed below.

SAFE HANDLING OF COPPER BERYLLIUM ALLOYS

Handling copper beryllium alloys in solid form poses no special health risk. Like many industrial materials, beryllium-containing materials may pose a health risk if recommended safe handling practices are not followed. Inhalation of airborne beryllium may cause a serious lung disorder in susceptible individuals. The Occupational Safety and Health Administration (OSHA) has set mandatory limits on occupational respiratory exposures. Read and follow the guidance in the Material Safety Data Sheet (MSDS) before working with this material. For additional information on safe handling practices or technical data on copper beryllium contact Materion Brush Performance Alloys Customer Technical Service Department at 800-375-4205.

North American Service Centers – Sales Inquiries

For strip $\leq 0.060''$ (1.5 mm) thick. wire and rod $\leq 0.5''$ (12.7 mm) diameter:	Elmhurst, IL TOLL FREE: 800-323-2438 PHONE: +(1) 630-832-9650 FAX: +(1) 630-832-9657	For bar, tube, plate/sheet $> 0.060''$ (1.5 mm) thick and rod $> 0.5''$ (12.7 mm) diameter:	Warren, MI TOLL FREE: 800-521-8800 PHONE: +(1) 586-772-2700 FAX: +(1) 586-772-2472
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