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Grain Boundary Engineered (GBE®) Materials – The Wise Choice for Medical Implants and Devices

Integran Technologies Inc., Toronto, Canada, a world renowned leader in nanostructured and grain boundary engineered materials and Vascotube GmbH, Birkenfeld/Pforzheim, Germany, a manufacturer of medical precision tubing have entered an exclusive cooperation in the application of grain boundary engineered materials for medical implants and devices.

GBE® is Integran`s patent- and trademark protected thermomechanical processing technology which in the medical field is applicable to biocompatible alloys such as 316 LVM stainless steel. The GBE® process significantly enhances the internal structure of materials by making them more damage tolerant, leading to improved reliability, durability and longevity. Specific improvements are:

- **Enhanced ductility and fracture resistance**
- **Increased fatigue life**
- **Superior resistance to corrosion and sensitization**
- **Improved deformation characteristics during tube manufacturing**

For balloon expandable stents manufactured from GBE® 316 LVM alloy the following specific improvements can be achieved:

- **Reduced risk of ligament fracture during stent expansion**
- **Decreased elastic relaxation avoiding overexpansion during stent manufacturing**
- **Limitation of sensitization during laser cutting**
- **Improved surface finish after electropolishing due to highly isotropic grain structure**

Besides the improvements in manufacturing GBE® 316 LVM may offer economic advantages such as higher yield, faster processing and others. Naturally no modifications of the alloy composition are necessary. GBE® 316 LVM completely conforms to ISO 5832-1 and ASTM 138-00 standards.

Just tell us your size requirement. We are pleased to manufacture test tubing for your own evaluation.