PRODUCT DATA SHEET

Semiconductor-Grade Preforms

88Au/12Ge

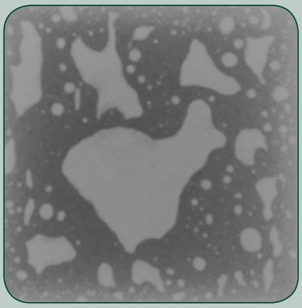
Introduction

The need for high-temperature solders is growing as RF and power semiconductor devices continue to get smaller, with power density increasing both as a consequence of the shrink and as a result of increased power ratings. Indalloy®182 (80Au/20Sn eutectic solder) has been the workhorse for high-temperature, high-reliability, die-attach applications for many years. However, as junction temperatures (Tj) increase, the gold-tin eutectic solder is beginning to reach its limit of utility. Higher temperatures cause increased thermal fatigue and delamination can also be seen at the solder joints.

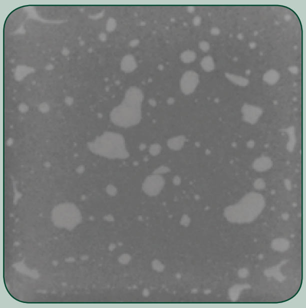
The next option for RF and power semiconductor manufacturers needing higher temperatures is **88Au/12Ge**. The melting temperature of **88Au/12Ge** is 356°C (eutectic).

The traditional **88Au/12Ge** alloy has poor solderability, which manifests as large voids in the bond. Voids are poor conductors of heat which create hot spots, and are the primary cause of premature failures.

Indium Corporation developed a semiconductor-grade **88Au/12Ge** that increases solderability and decreases voiding%.



Standard preform tested on Ni/Au coupon



Semiconductor-grade preform tested on Ni/Au coupon

88Au/12Ge Preform Type	Ni/Au	Copper
Standard	30%	32%
Semiconductor-Grade	14%	22%

Technical Service

Indium Corporation has a team of certified process engineers to help you select the best material for your manufacturing process. When you involve our technical experts in the initial design of your process, they can help ensure you develop an efficient and cost-effective solution. Indium Corporation has technical staff available around the globe with the skills and experience to assist you in developing your design, assembly, or process.

Packaging

Preform packaging is critical for two reasons:

- Protection during shipping and handling
- Ease of introduction into the manufacturing process

Because of these needs, Indium Corporation offers several packaging alternatives:

- Jar or bulk pack
- Bulk tray pack
- Array tray pack
- Tape & reel
- Waffle pack

We also can create customized packaging solutions to meet your needs and processes.

Safety Data Sheet

Safety data sheet for this product can be found online at http://www.indium.com/sds

From One Engineer To Another®

Contact our engineers today: **askus@indium.com**
Learn more: **www.indium.com**

ASIA +65 6268 8678 • CHINA +86 (0) 512 628 34900 • EUROPE +44 (0) 1908 580400 • USA +1 315 853 4900

Form No. 99305 (A4) R1

ISO 9001 REGISTERED