# **Metal**Thermal Interface Materials

Indium Corporation is the leader in metal thermal interface materials (TIMs).



## Heat-Spring®

A compressible interface between a heat source and a heat-sink; the surface of a Heat-Spring® is patterned to optimize performance.





#### **Indium TIM Solutions for Burn-In**

Indium is used as a high-performance TIM because of its high thermal conductivity (86W/mK). A thin aluminum layer can prevent indium from adhering to the DUT surface.



## **Liquid Metal and Hybrid TIM Products**

Indium Corporation offers multiple practical liquid metal or hybrid TIMs. They possess high thermal conductivity and low interfacial resistance against most surfaces.



#### Solder TIM Solutions

Reflowed solder joints are thermally conductive because of the intermetallic bond. A low-voiding joint has better thermal performance.

Common thermal interface material alloys: Indalloy®4 (100In), Indalloy®1E (52In/48Sn), Indalloy®290 (97In/3Ag), Indalloy®3 (90In/10Ag)



Contact our engineers: askus@indium.com
Learn more: www.indium.com/TIMs

#### From One Engineer To Another

All of Indium Corporation's solder paste and preform manufacturing facilities are IATF 16949:2016 certified. Indium Corporation is an ISO 9001:2015 registered company.



# **Proven Materials for Reliable Servers**

#### **PCBA Materials**

#### Main Board

- Indium10 8HF Solder Paste
  - Eliminates HIP and NWO when BGAs warp
  - Excellent wetting on different surfaces
- Indium10.2HFA Solder Paste
  - Non-tacky residue with excellent ICT performance
  - Excellent HIP and NWO performance
  - Excellent conformal coating compatibility
- Durafuse<sup>™</sup> LT Low-Temperature Alloy
- More than two orders of magnitude better than Bi-containing low-temperature materials
- TCT performance can be better than SAC305
- Solder Fortification® Preforms
  - Added solder volume to improve mechanical reliability
- Wave Fluxes
  - WF-7745 VOC-free flux

#### **Memory Module**

- Indium8.9HF Solder Paste
  - Restricted flux residue
  - Excellent transfer efficiency
- Durafuse<sup>™</sup> LT Low-Temperature Allov
  - Improves drop shock resistance
  - Improves TCT performance
- Indium5.7LT-1 Solder Paste
  - Low-temperature
- Clear residue

#### **Graphic Card**

- Indium10.8HF Solder Paste
  - Eliminates HIP and NWO when BGAs warp
  - Excellent wetting on different surfaces
- Indium5.7LT-1 Solder Paste
  - Low-temperature
  - Clear residue

# - WF-9945 rosin-containing flux **Power Device Heat-Sink** LV2K Preforms • Heat-Spring® HSK

- - Compressed between two surfaces without reflow - High thermal conductivity
  - Excellent thermal cycling performance
- Connector
- Reduce ground pad voiding
- Less flux residue, enhance SIR performance

#### **Engineered Solders**

 Solder Fortification® Preforms - Added solder volume to improve mechanical reliability



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