



Solder plus Support

# AIM PRECISION SOLDER PREFORMS



## APPLICATIONS FOR AIM'S SOLDER PREFORMS AT A GLANCE

- Die attach of semiconductor, LED, and laser chips
- Connectors
- Package/lid sealing
- PCBs: Increase solder volume/fillets on PCB through-holes
- Thermal interface: Chip-to-lid/lid-to-heat sink

**AIM'S SOLDER PREFORMS** provide a precise volume of solder for each solder joint that is uniform over high volumes. This provides high volume solder assembly operations with increased yield via precise delivery & control of solder to each interconnect.

**AVAILABLE ALLOYS** AIM manufactures solder preforms in a wide range of alloys/melt points ranging from 60°C to 356°C. These alloys include gold-tin/gold-germanium, pure indium and indium alloys, RoHS compliant lead-free alloys, and standard tin-lead compositions.

**DIMENSIONS / SHAPES** AIM manufactures preforms in any size or shape including rectangles, washers, discs, and frames. We also stamp complex parts to customer specifications; length/width/diameter: 0.010" and greater, thickness: 0.001" and greater.

**FLUXES** AIM manufactures fluxes and cleaners for use with solder preforms. Available flux chemistries include RA, RMA, No Clean and Water Soluble. Fluxes can be supplied in liquid or paste form and can be pre-coated onto the solder preforms.

**AIM'S MANUFACTURING FACILITIES ARE ISO 9001/14001 & IATF CERTIFIED**

### Common Recommended Preform & Foil Tolerances

We can manufacture any part to customer specified dimension/tolerance

Squares / Rectangles, Frames (ID & OD), Washers (ID & OD) & Discs		
< 0.050 inches		+/- 0.002 inches
> 0.051 inches		+/- 0.0025 inches
> 0.150 inches		+/- 0.005 inches
Custom Shapes		
		To customer specification
Thickness		
< 0.001 inches		+/- 0.0002 inches
0.002 inches to 0.005 inches		+/- 0.0005 inches
0.006 inches to 0.020 inches		+/- 0.001 inches
0.020 inches to 0.040 inches		+/- 0.002 inches

AIM's fabricated solders are available in a wide range of compositions with physical properties suited to specific application requirements. Below is a selection of the most commonly used AIM alloys for specific applications. In addition to these alloys, AIM manufactures hundreds of alloys with melt points ranging from 10.7°C up to 356°C. Contact us for technical support to specify the best solder to meet your assembly requirements.

<b>DIE ATTACH</b>						
ALLOY COMPOSITION WEIGHT %	SOLIDUS		LIQUIDUS		DENSITY g/cm <sup>3</sup>	DENSITY lb/in <sup>3</sup>
	°C	°F	°C	°F		
100In	156.6	313	156.6	313	7.31	0.2639
80Au 20Sn	280	536	280	536	14.51	0.5242
92.5Pb 5Sn 2.5Ag	287	549	296	565	11.02	0.3978
97.5Pb 1.5Ag 1Sn	309	588	309	588	11.28	0.4072
88Au 12Ge	356	673	356	673	14.70	0.5310

<b>MEDICAL ELECTRONICS / ROHS COMPLIANT</b>						
ALLOY COMPOSITION WEIGHT %	SOLIDUS		LIQUIDUS		DENSITY g/cm <sup>3</sup>	DENSITY lb/in <sup>3</sup>
	°C	°F	°C	°F		
SN100C	227	441	227	441	7.4	0.2673
SAC305	217	423	218	424	7.38	0.2659
96.5Sn 3.5Ag	221	430	221	430	7.36	0.2657
96Sn 4Ag	221	430	238	460	7.31	0.264
CASTIN	211	412	226	439	7.37	0.2664
80Au 20Sn	280	536	280	536	14.51	0.5242

<b>LOW TEMPERATURE / STEP SOLDER</b>						
ALLOY COMPOSITION WEIGHT %	SOLIDUS		LIQUIDUS		DENSITY g/cm <sup>3</sup>	DENSITY lb/in <sup>3</sup>
	°C	°F	°C	°F		
51.5In 32Bi 16.5Sn	60	140.0	60	140	8.2	0.2958
52In 48Sn	118	244	118	244	7.3	0.2635
58Bi 42Sn	138	281	138	281	8.56	0.309
43Pb 43Sn 14Bi	144	291	163	325	8.99	0.3245
100In	156.6	313	157.6	313	7.31	0.2639

<b>THERMAL INTERFACE / HIGH DUCTILITY / CTE MISMATCH</b>						
ALLOY COMPOSITION WEIGHT %	SOLIDUS		LIQUIDUS		DENSITY g/cm <sup>3</sup>	DENSITY lb/in <sup>3</sup>
	°C	°F	°C	°F		
51.5In 32Bi 16.5Sn	60	140	60	140	8.2	0.2958
52In 48Sn	118	244	118	244	7.3	0.2635
97In 3Ag	146	295	146	295	7.38	0.2664
100In	156.6	313	156.6	313	7.31	0.2639
100In+ *	156.6	313	156.6	313	7.31	0.2639

\* Doped Indium