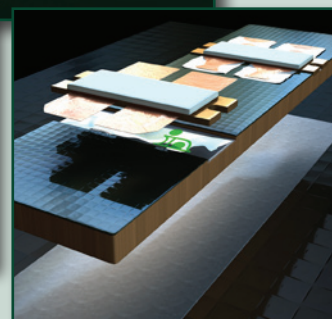
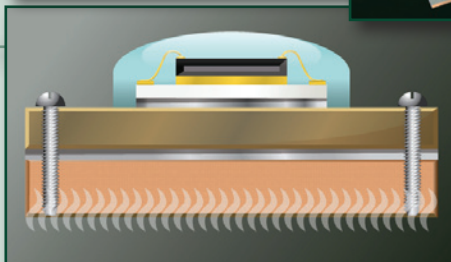
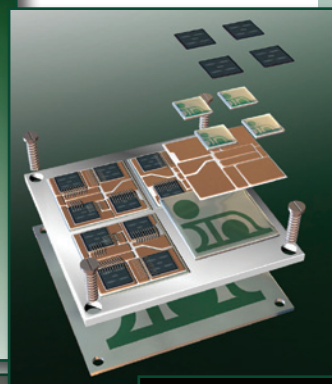
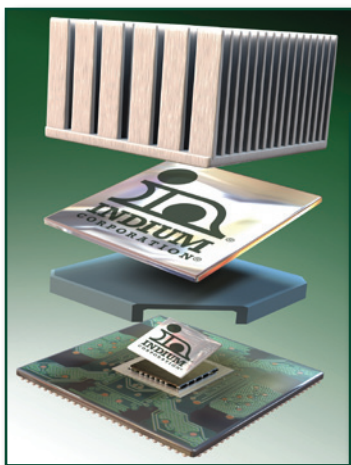


# Solder Thermal Interface Materials



## Introduction

Indium Corporation's Solder Thermal Interface Materials radically improve:

- Heat dissipation efficiency in electronic devices
- Thermal conductance for high power devices - with densities in excess of 100 watts
- End-of-life performance at the thermal interface - to avoid failures common with fluidic solutions such as greases
- Portable device battery performance - by reducing thermal resistance and cooling fan size
- Portable device use profile - by reducing heatsink size and mass
- Compliance with RoHS while accommodating step soldering requirements
- Outgassing

Indium Corporation has solutions for:

- Telecom
- Medical
- Computing
- Cryogenic sealing
- Semiconductors
- Automotive
- LEDs
- Power devices
- Photonics
- Solar concentrators

## Confidentiality

Indium Corporation recognizes the importance of confidentiality in the design of thermal interface solutions. As a trusted partner, our engineers will work with you to help you find the right solution for your thermal interface problems. We can help you find the right alloy for performance and the best solder form for ease of assembly.

## Applications

Some non-confidential applications include:

- Semiconductor integrated circuits
- Microprocessors
- Power QFNs
- Power device to PCB-attach (TO220, etc.)
- Telecom
- Die-attach (photonics, MOSFETS, etc.)
- LED-attach
- IGBT
- RF Infrastructure

86W/mk

## Products

- AuSn solder
- SnPb solders
- InPb solders
- SAC Pb-Free solders
- Pure indium
- Bi low-temperature solders
- Informs

## The Indium Advantage

We are committed to understand your unique needs for materials in your product and for your process. No company offers a wider selection of alloys and solder forms to meet your needs. Our variety of alloys, ability to fabricate and package these alloys into easy-to-use forms, and our decades of application knowledge are the core values we bring to your company. Tap into this expertise by contacting our certified engineers at [TIM@indium.com](mailto:TIM@indium.com) or visit [www.indium.com/TIM](http://www.indium.com/TIM).

Samples and kits are available online at <http://buy.solder.com>.

OVER →

Form No. 98049 R1

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## Technical Specifications

Material	Indalloy Number	Thermal Conductivity W/(m <sup>2</sup> K) at 300K	Thermal Conductivity W/m <sup>2</sup> K at 85C	Liquidus (C)	MP/E	Solidus (C)
Diamond		1300-2400				
SiC		611				
Ag		429				
Cu		401				
Au100	200		318	1064	MP	
Au		317				
BeO		250				
Al		240				
AlN		200				
W		180				
Zn		116				
Ni		91				
Fe		84-90				
In100	4	82	86	156.7	MP	
In97 Ag3	290		73	143.3	E	143.3
Sn100	128		73	232	MP	
Pd		72				
Pt		72				
In90Ag10		67				
In90 Ag10	3		67	237		143
Sn		66				
Sn91 Zn9	201		61	199	E	199
Au80 Sn20	182	57	57	280	E	280
Sn77.2 In20 Ag2.8	227		54	187		175
Sn62.5 Pb36.1 Ag1.4	104		50	179	E	179
Sn63 Pb37	106	50.9	50	183	E	183
Sn60 Pb40	109	49.8	49	191		183
Sn62 Pb36 Ag2		49				
Sn50 Pb50	116	46.7	48	212		183
Sn70 Pb18 In12	9		45	167		154
Pb60 Sn40	130		44	238		183
Au88 Ge12	183	44	44	356	E	356
Sn40 Pb60		43.6				
In80 Pb15 Ag5	2		43	154		149
Pb70 Sn30	141	40.5	41	257		183
In70 Pb30	204		38	175		165
Pb80 Sn20	149	37.4	37	280		183
Pb100	170	35	35	327	MP	
In52 Sn48	1E		34	118	E	118
In50 Sn50	1		34	125		118
Sn96.5 Ag3.5	121	33	33	221	E	221
Sn60 Bi40	281-338		30	170		138

Material	Indalloy Number	Thermal Conductivity W/(m <sup>2</sup> K) at 300K	Thermal Conductivity W/m <sup>2</sup> K at 85C	Liquidus (C)	MP/E	Solidus (C)
In60 Pb40	205		29	181		173
Sn95 Sb5	133	28	28	240		235
Pb88 Sn10 Ag2	228		27	290		267
Au96.76 Si3.24	184		27	363	E	363
Pb90 Ag5 Sn5	155		25	292	MP	
Pb92.86 In4.76 Ag2.38	6		25	300	MP	
Pb90 Sn10	159	35.8	25	302		275
Pb89.5 Sn10.5	242		25	302		275
Pb90 In5 Ag5	12		25	310		290
Pb92.5 In5 Ag2.5 Sb	164		25	310		300
Pb37.5 Sn37.5 In25	5	24	23	181		134
Pb97.5 Ag1.5 Sn1	165		23	309	E	309
Pb95 Sn5	171	35.2	23	312		308
Pb94.5 Ag5.5	229		23	365		304
In50 Pb50	7	35	22	210		184
Pb95 In5	11		21	313		300
Bi58 Sn42	281		19	138.3	E	138.3
Pb60 In40	206		19	231		197
Pb75 In25	10		18	260		240
Pb81 In19	150		17	275		260
Alloy 42		15.6				
Bi52 Pb30 Sn18	39		13	96	E	96
Boron Nitride filled Silicone		6				
Bi55.5 Pb44.5	255		4	124	E	124
Solver Filled Phase Change		3.0 - 8				
Ag - Filled Die Attach		1.3 - 5				
Molding Compounds		0.6 - 0.7				
BT Epoxy		0.19				
FR-4		0.11				
Air		0.03				

This information is provided for general information only. It is not intended, and shall not be construed, to warrant or guarantee the performance of the products

described which are sold subject exclusively to written warranties and limitations thereon included in product packaging and invoices.

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