INDIUM CORPORATION OF AMERICA, EUROPE and ASIA

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INDALLOY SPECIALTY ALLOYS

Typical in-house specifications for alloy percent unless otherwise specified by customer:

Elements <1% (as dopants not as impurities) ±50% off of nominal value
Elements 1% to <2%: ±0.25% off of nominal value
Elements 2% to <10%: ±0.5% off of nominal value
Elements >10%: ±1.0% off of nominal value (Bismuth containing alloys, major constituent ±1.5%)

MECHANICAL PROPERTIES

Indalloy Number	TEMP (Temperature critical alloy: ±2°C of solidus. Non-temperature critical alloy ±3°C)		Elemental Composition (% by Mass)							TEMP		Density		Electrical Conductivity (1.72μohms-cm)	Thermal Conductivity @ 85°C	Thermal Coefficient Expansion @ 20°C	Tensile Strength	Shear Strength	Young's Modulus	Elongation	Brinell Hardness	Latent Heat of Fusion	Specific Heat SOLID	Specific Heat LIQUID
	Liquidus	Solidus								Liquidus	Solidus													
	°C	°C								°F	°F	lb/in³	gm/cm³	% of IACS	W/cm-°C	PPM/°C	PSI	PSI	PSI x 10⁶	%		J/g	J/g-°C	J/g-°C
46L	8	7	61.0 Ga	25.0 In	13.0 Sn	1.0 Zn				46	44	0.2348	6.50											
51	11 E	11	62.5 Ga	21.5 In	16.0 Sn					51	51	0.2348	6.50											
60	16 E	16	75.5 Ga	24.5 In						60	60	0.2294	6.35											
77	25	16	95.0 Ga	5.0 In						77	60	0.2222	6.15											
14	30 MP		100.0 Ga							86		0.2133	5.90											
15	43	38	42.9 Bi	21.7 Pb	18.3 In	8.0 Sn	5.1 Cd	4.0 Hg		109	100	0.3353	9.28											
117	47 E	47	44.7 Bi	22.6 Pb	19.1 In	8.3 Sn	5.3 Cd			117	117	0.3310	9.16	4.5	.15	25	5400			37.5 note 4	16.5 note1	36.8	0.163	0.197
16	52	47	44.7 Bi	22.6 Pb	16.1 In	11.3 Sn	5.3 Cd			126	117	0.3310	9.16											
17	56	54	49.1 Bi	20.9 In	17.9 Pb	11.6 Sn	0.5 Cd			133	129	0.3255	9.01											
136	58 E	58	49.0 Bi	21.0 In	18.0 Pb	12.0 Sn				136	136	0.3255	9.01	2.43	.10	23	6300			20 note 4	16.5 note1	28.9	0.167	0.201
19	60 E	60	51.0 In	32.5 Bi	16.5 Sn					140	140	0.2847	7.88	3.3		22	4850				11			
18	62 E	62	61.7 In	30.8 Bi	7.5 Cd					143	143	0.2898	8.02											
140	65	57	47.5 Bi	25.4 Pb	12.6 Sn	9.5 Cd	5.0 In			149	135	0.3422	9.47	3.5	.15		3725			77.5 note 4	14 note 1	36	0.159	0.188
147	65	61	48.0 Bi	25.6 Pb	12.8 Sn	9.6 Cd	4.0 In			149	142	0.3432	9.50											
21	69	58	49.0 Bi	18.0 Pb	18.0 In	15.0 Sn				156	136	0.3252	9.00											
158	70 E	70	50.0 Bi	26.7 Pb	13.3 Sn	10.0 Cd				158	158	0.3461	9.58	4	.18	22	5990	300		120 note 4	14.5 note 1	39.8	0.146	0.184
162	72 E	72	66.3 In	33.7 Bi						162	162	0.2887	7.99											
22	73	70	50.5 Bi	27.8 Pb	12.4 Sn	9.3 Cd				163	158	0.3494	9.67											
23	73	70	50.0 Bi	25.0 Pb	12.5 Sn	12.5 Cd				163	158	0.3468	9.60	3.1			4550			30	25			
24	73	70	50.0 Bi	25.0 Pb	12.5 Sn	12.5 Cd		Dopant: 0.05 Ag		163	158	0.3465	9.59											
25	78 E	78	48.5 Bi	41.5 In	10.0 Cd					172	172	0.3067	8.49											
26	78	70	50.0 Bi	34.5 Pb	9.3 Sn	6.2 Cd				172	158	0.3573	9.89											
174	79 E	79	57.0 Bi	26.0 In	17.0 Sn					174	174	0.3086	8.54											
27	81 E	81	54.0 Bi	29.7 In	16.3 Sn					178	178	0.3060	8.47											
28	82	77	50.0 Bi	39.0 Pb	8.0 Cd	3.0 Sn				180	171	0.3660	10.13											
29	85	81	50.3 Bi	39.2 Pb	8.0 Cd	1.5 In	1.0 Sn			185	178	0.3667	10.15											
160-190	88	71	42.5 Bi	37.7 Pb	11.3 Sn	8.5 Cd				190	160	0.3544	9.81	4.3			5400	300		135 note 4	15 note 1	34.3	0.146	
31	89	80	50.3 Bi	39.2 Pb	8.0 Cd	1.5 Sn	1.0 In			192	176	0.3667	10.15											
32	89	80	50.9 Bi	31.1 Pb	15.0 Sn	2.0 In	1.0 Cd			192	176	0.3479	9.63											
33	91	87	51.1 Bi	39.8 Pb	8.1 Cd	1.0 In				196	189	0.3689	10.21											
34	92	83	52.0 Bi	31.7 Pb	15.3 Sn	1.0 Cd				198	181	0.3505	9.70											
197	92 E	92	51.6 Bi	40.2 Pb	8.2 Cd					198	198	0.3703	10.25											
35	93	73	50.0 Bi	39.0 Pb	7.0 Cd	4.0 Sn				199	163	0.3653	10.11											
36	93	87	51.4 Bi	31.4 Pb	15.2 Sn	2.0 In				199	189	0.3483	9.64											
8	93 E	93	44.0 In	42.0 Sn	14.0 Cd					199	199	0.2695	7.46		.36	24	2632				4.8 note 2			
37	94	90	52.0 Bi	31.7 Pb	15.3 Sn	1.0 In				201	194	0.3505	9.70											
38	95 E	95	52.5 Bi	32.0 Pb	15.5 Sn					203	203	0.3508	9.71											
257	96	95	52.0 Bi	32.0 Pb	16.0 Sn					204	203	0.3501	9.69			24	5060	3800	2.08	148.6				
39	96 E	96	52.0 Bi	30.0 Pb	18.0 Sn					205	205	0.3468	9.60	2.3	.13		5200			100	15.5 note 1	34.7	0.151	0.167
42	96 E	96	46.0 Bi	34.0 Sn	20.0 Pb					205	205	0.3248	8.99											
40	99	93	50.0 Bi	31.0 Pb	19.0 Sn					210	199	0.3461	9.58											
41	100 E	100	50.0 Bi	28.0 Pb	22.0 Sn					212	212	0.3411	9.44											
43	102	70	40.5 Bi	27.8 Pb	22.4 Sn	9.3 Cd				216	158	0.3367	9.32											
45	103	102	54.0 Bi	26.0 Sn	20.0 Cd					217	216	0.3172	8.78											
46	104	95	56.0 Bi	22.0 Pb	22.0 Sn					219	203	0.3385	9.37											
57	104	95	50.0 Bi	30.0 Pb	20.0 Sn					219	203	0.3443	9.53											
47	105	70	35.3 Bi	35.1 Pb	20.1 Sn	9.5 Cd				221	158	0.3425	9.48											
48	105	98	52.2 Bi	37.8 Pb	10.0 Sn					221	208	0.3602	9.97											
49	107	96	45.0 Bi	35.0 Pb	20.0 Sn					225	205	0.3468	9.60											
50	108	95	46.0 Bi	34.0 Pb	20.0 Sn					226	203	0.3465	9.59											
52	108	102	54.5 Bi	39.5 Pb	6.0 Sn					226	216	0.3664	10.14											
224	108 E	108	52.2 In	46.0 Sn	1.8 Zn					226	226	0.2627	7.27											
53	109 E	109	67.0 Bi	33.0 In						228	228	0.3183	8.81											
54	112	98	51.6 Bi	41.4 Pb	7.0 Sn					234	208	0.3660	10.13											
55	113	72	40.0 Bi	33.4 Pb	13.3 Sn	13.3 Cd				235	162	0.3479	9.63											
56	113	104	54.4 Bi	43.6 Pb	1.0 Sn	1.0 Cd				235	219	0.3750	10.38											
44	115	95	50.0 Bi	25.0 Pb	25.0 Sn					239	203	0.3367	9.32											
58	117	103	53.0 Bi	42.5 Pb	4.5 Sn					243	217	0.3700	10.24											
59	118	75	38.2 Bi	31.7 Sn	26.4 Pb	2.6 Cd	1.1 Sb	Dopant: 0.06 Cu		244	167	0.3273	9.06											
1E	118 E	118	52.0 In	48.0 Sn						244	244	0.2637	7.30	11.7	.34	20	1720	1630		83	4.5 note 2			
61	119	108	53.7 Bi	43.1 Pb	3.2 Sn					246	226	0.3721	10.30											
62	120	117	55.0 Bi	44.0 Pb	1.0 Sn					248	243	0.3754	10.39											
63	121	92	56.8 Bi	41.2 Pb	2.0 Cd					250	198	0.3743	10.36											
64	121	120	55.0 Bi	44.0 Pb	1.0 In					250	248	0.3754	10.39											
65	123	70	46.0 Pb	30.7 Bi	18.2 Sn	5.1 Cd				253	158	0.3519	9.74							46				
253	123 E	123	74.0 In	26.0 Cd						253	253	0.2753	7.62											
255	124 E	124	55.5 Bi	44.5 Pb						255	255	0.3772	10.44	4	.04		6400			37.5	15	20.9	0.126	0.155
1	125	118	50.0 In	50.0 Sn						257	244	0.2637	7.30	11.7	.34	20	1720	1630		83	4.5 note 2			
13	125 MP		70.0 In	15.0 Sn	9.6 Pb	5.4 Cd				257		0.2757	7.63		.39	27	1476	2000			4			
67	126	124	58.0 Bi	42.0 Pb						259	255	0.3758	10.40											
68	127	93	38.0 Pb	37.0 Bi	25.0 Sn					261	199	0.3425	9.48											
69	129	95	51.6 Bi	37.4 Sn	6.0 In	5.0 Pb				264	203	0.3100	8.58											

Indalloy Number	TEMP (Temperature critical alloy: ±2°C of solidus. Non-temperature critical alloy ±3°C) Liquidus °C	Solidus °C	Elemental Compostion (% by Mass)	TEMP Liquidus °F	Solidus °F	Density lb/in³	Density gm/cm³	Electrical Conductivity (1.72μohms-cm) % of IACS	Thermal Conductivity @ 85°C W/cm-°C	Coefficient Expansion @ 20°C PPM/°C	Tensile Strength PSI	Shear Strength PSI	Young's Modulus PSI x 10⁶	Elongation %	Brinell Hardness	Latent Heat of Fusion J/g	Specific Heat SOLID J/g-°C	Specific Heat LIQUID J/g-°C
70	130	121	**40.0** In **40.0** Sn **20.0** Pb	266	250	0.2840	7.86											
71	131	118	**52.0** Sn **48.0** In	268	244	0.2637	7.30											
72	133	96	**34.0** Pb **34.0** Sn **32.0** Bi	271	205	0.3306	9.15											
73	133	128	**56.8** Bi **41.2** Sn **2.0** Pb	271	262	0.3107	8.60											
74	135	96	**38.4** Bi **30.8** Pb **30.8** Sn Dopant: 0.05 Ag	275	205	0.3328	9.21											
75	135 E	135	**57.4** Bi **41.6** Sn **1.0** Pb	275	275	0.3100	8.58											
76	136	95	**36.0** Bi **32.0** Pb **31.0** Sn **1.0** Ag	277	203	0.3331	9.22											
78	136	95	**36.7** Bi **31.8** Pb **31.5** Sn Dopant: 0.25 Cd and 0.05 Ag	277	203	0.3324	9.20											
79	136	121	**55.1** Bi **39.9** Sn **5.0** Pb	277	250	0.3132	8.67											
80	137	95	**36.4** Bi **31.8** Pb **31.8** Sn	279	203	0.3320	9.19											
81	137	96	**43.0** Pb **28.5** Bi **28.5** Sn	279	205	0.3407	9.43											
281	138 E	138	**58.0** Bi **42.0** Sn	281	281	0.3093	8.56	4.5	.19	15	8000	500		55 note 4	23 note 1	44.8	0.167	0.201
83	139	96	**38.4** Pb **30.8** Bi **30.8** Sn	282	205	0.3360	9.30											
84	139	132	**45.0** Sn **32.0** Pb **18.0** Cd **5.0** Bi	282	270	0.3118	8.63											
282	140	139	**57.0** Bi **42.0** Sn **1.0** Ag	284	282	0.3098	8.57											
85	143	96	**33.4** Bi **33.3** Pb **33.3** Sn	289	205	0.3310	9.16											
290	143 E	143	**97.0** In **3.0** Ag	290	290	0.2666	7.38	23	.73	22	800				2			
86	144 E	144	**60.0** Bi **40.0** Cd	291	291	0.3364	9.31											
87	145	118	**58.0** Sn **42.0** In	293	244	0.2637	7.30											
181	145 E	145	**51.2** Sn **30.6** Pb **18.2** Cd	293	293	0.3053	8.45		.35	24	6263							
203	150	125	**95.0** In **5.0** Bi	302	257	0.2675	7.40											
88	150 MP		**99.3** In **0.7** Ga	302		0.2641	7.31											
225	151	143	**90.0** In **10.0** Sn	304	289	0.2641	7.31											
89	152	120	**42.0** Pb **37.0** Sn **21.0** Bi	306	248	0.3310	9.16											
230	152	140	**54.0** Sn **26.0** Pb **20.0** In Dopant: 0.12 - 0.16 Cu	306	284	0.2912	8.06											
90	152 MP		**99.4** In **0.6** Ga	306		0.2641	7.31											
91	153 MP		**99.6** In **0.4** Ga	307		0.2641	7.31											
2	154	149	**80.0** In **15.0** Pb **5.0** Ag	309	300	0.2836	7.85	13	.43	28	2550	2150		58	5.2 note 2			
92	154 MP		**99.5** In **0.5** Ga	309		0.2641	7.31											
4	157 MP		**100.0** In	314		0.2641	7.31	24	.86	29	273	890	1.57	22 to 41	0.9	28.47	0.243	
93	160	122	**54.5** Pb **45.5** Bi	320	252	0.3826	10.59											
94	160	145	**50.0** Sn **25.0** Cd **25.0** Pb	320	293	0.3020	8.36											
95	162	140	**48.0** Sn **36.0** Pb **16.0** Bi	324	284	0.3172	8.78											
97	163	144	**43.0** Sn **43.0** Pb **14.0** Bi	325	291	0.3259	9.02			24	6400		3.56	41				
98	167	120	**50.0** Sn **40.0** Pb **10.0** Bi	333	248	0.3169	8.77											
9	167	154	**70.0** Sn **18.0** Pb **12.0** In	333	309	0.2815	7.79	12.2	.45	24	5320	4190		135.5	12 note 2			
99	170	131	**51.5** Pb **27.0** Sn **21.5** Bi	338	268	0.3461	9.58											
281-338	170	138	**60.0** Sn **40.0** Bi	338	280	0.2934	8.12	5	.30		7500			35	23.5 note 1	44.4	0.18	0.213
234	172	166	**49.7** Sn **41.8** Pb **8.0** Bi **0.5** Ag	342	331	0.3187	8.82											
101	173	130	**50.0** Pb **30.0** Sn **20.0** Bi	343	266	0.3422	9.47											
240	173	160	**46.0** Sn **46.0** Pb **8.0** Bi	343	320	0.3241	8.97			22	6000		5.28	48				
204	175	165	**70.0** In **30.0** Pb	347	329	0.2959	8.19	8.8	.38	28	3450							
102	176	146	**47.5** Pb **39.9** Sn **12.6** Bi	349	295	0.3299	9.13											
103	177 E	177	**67.8** Sn **32.2** Cd	351	351	0.2775	7.68											
104	179 E	179	**62.5** Sn **36.1** Pb **1.4** Ag	354	354	0.3039	8.41	11.9	.50	27	7000	7540					0.167	
105	180	96	**60.0** Sn **25.5** Bi **14.5** Pb	356	205	0.2981	8.25											
5	181	134	**37.5** Pb **37.5** Sn **25.0** In	358	273	0.3042	8.42	7.8	.23	23	5260	4300		101	10.2 note 2			
205	181	173	**60.0** In **40.0** Pb	358	343	0.3078	8.52	7	.29	27	4150							
100	182	178	**62.6** Sn **37.0** Pb **0.4** Ag	361	352	0.3035	8.40											
106	183 E	183	**63.0** Sn **37.0** Pb	361	361	0.3035	8.40	11.5	.50	25	7500	6200	4.35	37	17		0.167	
213	183	183	**62.0** Sn **38.0** Pb	362	361	0.3046	8.43						4.35					
107	184	183	**65.0** Sn **35.0** Pb	363	361	0.3010	8.33											
231	186	174	**86.5** Sn **5.5** Zn **4.5** In **3.5** Bi	367	345	0.2659	7.36											
108	186	183	**70.0** Sn **30.0** Pb	367	361	0.2948	8.16	12.5		22	7800	5200	5.08	30	17			
227	187	175	**77.2** Sn **20.0** In **2.8** Ag	369	347	0.2619	7.25	9.8	.54	28	6800	4800	5.6	47	17			
226	187	181	**83.6** Sn **8.8** In **7.6** Zn	369	358	0.2627	7.27				6600		4	85.5				
137	189	179	**61.5** Sn **35.5** Pb **3.0** Ag	372	354	0.3046	8.43											
109	191	183	**60.0** Sn **40.0** Pb	376	361	0.3071	8.50	11.5	.49	25	7600	5600	4.35	40	16			
110	192	183	**75.0** Sn **25.0** Pb	378	361	0.2890	8.00											
235	195	165	**58.0** In **39.0** Pb **3.0** Ag	383	329	0.3104	8.59											
111	197	170	**55.5** Pb **40.5** Sn **4.0** Bi	387	338	0.3328	9.21											
112	199	183	**80.0** Sn **20.0** Pb	390	361	0.2836	7.85											
201	199 E	199	**91.0** Sn **9.0** Zn	390	390	0.2627	7.27	15	.61		7940			32.5	21.5 note 1	71.2	0.239	0.272
113	200	183	**55.0** Sn **45.0** Pb	392	361	0.3136	8.68											
114	205	183	**85.0** Sn **15.0** Pb	401	361	0.2782	7.70											
254	205	204	**86.9** Sn **10.0** In **3.1** Ag	401	399	0.2663	7.37											
115	210	177	**55.0** Pb **44.0** Sn **1.0** Ag	410	351	0.3291	9.11											
7	210	184	**50.0** In **50.0** Pb	410	363	0.3201	8.86	6	.22	27	4670	2680		55	9.6 note 2			
116	212	183	**50.0** Sn **50.0** Pb	414	361	0.3205	8.87	10.9	.48	23	6000	5200		35	14			
118	213	183	**90.0** Sn **10.0** Pb	415	361	0.2728	7.55											
249	213	211	**91.8** Sn **4.8** Bi **3.4** Ag	415	412	0.2688	7.44											
119	216	183	**50.0** Sn **49.5** Pb **0.5** Sb	421	361	0.3198	8.85											
238	217 E	217	**90.0** Sn **10.0** Au	423	423	0.2811	7.78				7280			1.1				
120	218	183	**52.0** Pb **48.0** Sn	424	361	0.3234	8.95											
241	220	217	**95.5** Sn **3.8** Ag **0.7** Cu	428	423	0.2674	7.40	13.2			6962	3916		36.5	15			
252	220	217	**95.5** Sn **3.9** Ag **0.6** Cu	428	423	0.2674	7.40											
256	220	217	**96.5** Sn **3.0** Ag **0.5** Cu	428	423	0.2674	7.40											
121	221 E	221	**96.5** Sn **3.5** Ag	430	430	0.2710	7.50	16	.33	30	5800	2700		73	40			
122	222	183	**95.0** Sn **5.0** Pb	432	361	0.2681	7.42											
246	225	217	**95.5** Sn **4.0** Ag **0.5** Cu	437	423	0.2674	7.40											
251	225	217	**96.2** Sn **2.5** Ag **0.8** Cu **0.5** Sb	437	423	0.2663	7.37											
123	226	221	**97.5** Sn **2.5** Ag	439	430	0.2652	7.34											

Indalloy Number	TEMP (Temperature critical alloy: ±2°C of solidus. Non-temperature critical alloy ±3°C) Liquidus	Solidus	Elemental Compostion (% by Mass)								TEMP Liquidus	Solidus	Density		Electrical Conductivity (1.72μohms-cm)	Thermal Conductivity @ 85°C	Coefficient Expansion @ 20°C	Tensile Strength	Shear Strength	Young's Modulus	Elongation	Brinell Hardness	Latent Heat of Fusion	Specific Heat SOLID	Specific Heat LIQUID
	°C	°C									°F	°F	lb/in³	gm/cm³	% of IACS	W/cm-°C	PPM/°C	PSI	PSI	PSI x 10⁶	%		J/g	J/g-°C	J/g-°C
217-440	227	103	48.0	Bi	28.5	Pb	14.5	Sn	9.0	Sb	441	217	0.3360	9.30	3			13000				19		0.167	
125	227	183	55.0	Pb	45.0	Sn					441	361	0.3277	9.07											
243	227 E	227	99.0	Sn	1.0	Cu					441	441	0.2641	7.31											
244	227 E	227	99.3	Sn	0.7	Cu					441	441	0.2641	7.31											
126	231	185	58.0	Pb	40.0	Sn	2.0	Sb			448	365	0.3313	9.17											
206	231	197	60.0	Pb	40.0	In					448	387	0.3360	9.30	5.2	.19	26	5000							
127	232	179	60.0	Pb	37.0	Sn	3.0	Ag			450	354	0.3393	9.39											
128	232 MP		100.0	Sn							450		0.2630	7.28	15.6	.73	24	1900		6.1				0.222	
209	233 MP		65.0	Sn	25.0	Ag	10.0	Sb			451		0.2818	7.80			36	17000							
129	235 MP		99.0	Sn	1.0	Sb					455		0.2627	7.27											
3	237	143	90.0	In	10.0	Ag					459	289	0.2724	7.54	22.1	.67	15	1650	1600		61	2.7 note 2			
130	238	183	60.0	Pb	40.0	Sn					460	361	0.3353	9.28	10.1	.44	25	5400	4600	3.34	25	12			
131	238	232	97.0	Sn	3.0	Sb					460	450	0.2623	7.26				1400							
132	240	221	95.0	Sn	5.0	Ag					464	430	0.2670	7.39	12.6		23	8000	3540		30	13.7		0.23	
133	240	235	95.0	Sn	5.0	Sb					464	455	0.2619	7.25	11.9	.28	31	5900	6000		38	13.3			
134	243	185	63.2	Pb	35.0	Sn	1.8	Sb			469	365	0.3393	9.39											
135	247	183	65.0	Pb	35.0	Sn					477	361	0.3432	9.50											
236	247	237	83.0	Pb	10.0	Sb	5.0	Sn	2.0	Ag	477	459	0.3739	10.35											
138	250	185	68.4	Pb	30.0	Sn	1.6	Sb			482	365	0.3479	9.63											
139	251	134	95.0	Bi	5.0	Sn					484	273	0.3483	9.64											
210	253	179	70.0	Pb	27.0	Sn	3.0	Ag			487	354	0.3555	9.84											
233	255	245	85.0	Pb	10.0	Sb	5.0	Sn			491	473	0.3743	10.36	6			5570			3.5		0.9	0.15	
141	257	183	70.0	Pb	30.0	Sn					495	361	0.3512	9.72	9.3	.41	26	5000	4000	3.05	18	12			
142	260	179	50.0	Sn	47.0	Pb	3.0	Ag			500	354	0.3201	8.86											
10	260	240	75.0	Pb	25.0	In					500	464	0.3602	9.97	4.6	.18	26	5450	3520		47.5	10.2 note 2			
143	260	252	90.0	Pb	10.0	Sb					500	486	0.3830	10.60											
144	263	184	73.7	Pb	25.0	Sn	1.3	Sb			505	363	0.3570	9.88											
202	266 E	266	82.6	Cd	17.4	Zn					511	511	0.3017	8.35											
145	268	183	75.0	Pb	25.0	Sn					514	361	0.3599	9.96				3426			53				
146	270	184	79.0	Pb	20.0	In	1.0	Sb			518	363	0.3671	10.16											
148	271 MP		100.0	Bi							520		0.3541	9.80											
150	275	260	81.0	Pb	19.0	In					527	500	0.3711	10.27	4.5	.17	27	5550							
149	280	183	80.0	Pb	20.0	Sn					536	361	0.3689	10.21	8.7	.37	27	4800	3000	2.9	20	11			
182	280 E	280	80.0	Au	20.0	Sn					536	536	0.5242	14.51		.57	16	40000	40000	8.57	2			0.015	
152	285	239	92.0	Pb	5.0	Sn	3.0	Sb			545	462	0.3909	10.82											
153	288	183	85.0	Pb	15.0	Sn					550	361	0.3866	10.70				4700	4470						
154	289	179	57.0	Pb	40.0	Sn	3.0	Ag			552	354	0.3346	9.26											
228	290	267	88.0	Pb	10.0	Sn	2.0	Ag			554	513	0.3884	10.75	8.5	.27	29	3260			42			0.143	
155	292 MP		90.0	Pb	5.0	Ag	5.0	Sn			558		0.3974	11.00		.25	27								
156	295	221	90.0	Sn	10.0	Ag					563	430	0.2713	7.51											
157	295	252	95.0	Pb	5.0	Sb					563	486	0.3960	10.96											
151	296	287	92.5	Pb	5.0	Sn	2.5	Ag			565	549	0.3982	11.02	8.6		29	4210	2240	2				0.13	
160	300	227	97.0	Sn	3.0	Cu					572	441	0.2645	7.32											
159	302	275	90.0	Pb	10.0	Sn					576	527	0.3884	10.75	8.9	.25	29	4400	2400	2.76	30	10			
242	302	275	89.5	Pb	10.5	Sn					576	527	0.3884	10.75	8.9	.25	29	4400	2400	2.76	30	10			
161	303 E	303	97.5	Pb	2.5	Ag					577	577	0.4094	11.33	8.6			4400	2900		42				
163	304	299	95.5	Pb	2.5	Ag	2.0	Sn			579	570	0.4047	11.20											
237	304 MP		93.0	Pb	3.0	Sn	2.0	In	2.0	Ag	579		0.4000	11.07											
165	309 E	309	97.5	Pb	1.5	Ag	1.0	Sn			588	588	0.4075	11.28	6	.23	30	4420			23	9.5			
12	310	290	90.0	Pb	5.0	In	5.0	Ag			590	554	0.3974	11.00	5.6	.25	27	5730	3180		23	9 note 2			
164	310	300	92.5	Pb	5.0	In	2.5	Ag			590	572	0.3982	11.02	5.5	.25	25	4560	2830						
171	312	308	95.0	Pb	5.0	Sn					594	586	0.3996	11.06	8.8	.23	30	4000	2100		45	8 note 2			
11	313	300	95.0	Pb	5.0	In					595	572	0.3996	11.06	5.1	.21	29	4330	3220		52	6 note 2			
239	313 E	313	91.0	Pb	4.0	Sn	4.0	Ag	1.0	In	595	595	0.3992	11.05											
167	315 MP		98.0	Pb	1.2	Sb	0.8	Ga			599		0.4047	11.20											
168	320	300	98.0	Pb	2.0	Sb					608	572	0.4043	11.19											
169	322	310	98.5	Pb	1.5	Sb					612	590	0.4057	11.23											
170	327 MP		100.0	Pb							621		0.4101	11.35	7.9	.35	29	1800	1800	2.61	55	4			
172	330	231	98.0	Sn	2.0	As					626	448	0.2616	7.24											
173	345	232	99.0	Sn	1.0	Ge					653	450	0.2623	7.26											
183	356 E	356	88.0	Au	12.0	Ge					673	673	0.5300	14.67		.44	13	26835	26825	10.55					
184	363 E	363	96.8	Au	3.2	Si					685	685	0.5564	15.40		.27	12	36975	31900	12.04					
175	364	305	95.0	Pb	5.0	Ag					687	581	0.4083	11.30											
229	365	304	94.5	Pb	5.5	Ag					689	579	0.4101	11.35	6	.23	30	4420							
176	382 E	382	95.0	Zn	5.0	Al					720	720	0.2385	6.60											
185	395	340	95.0	Cd	5.0	Ag					743	644	0.3154	8.73											
186	424 E	424	55.0	Ge	45.0	Al					795	795	0.1340	3.71											
177	465	451	75.0	Au	25.0	In					869	844	0.4950	13.70											
178	485	451	82.0	Au	18.0	In					905	844	0.5383	14.90											
187	525 E	525	45.0	Ag	38.0	Au	17.0	Ge			977	977	0.3823	10.58											
188	577 E	577	88.3	Al	11.7	Si					1,071	1,071	0.0961	2.66											
189	585	521	86.0	Al	10.0	Si	4.0	Cu			1,085	970	0.0994	2.75											
190	610	577	92.5	Al	7.5	Si					1,130	1,071	0.0968	2.68											
215	620	605	45.0	Ag	24.0	Cd	16.0	Zn	15.0	Cu	1,148	1,121	0.3291	9.11											
191	630	577	95.0	Al	5.0	Si					1,166	1,071	0.0972	2.69											
216	635	625	50.0	Ag	18.0	Cd	16.5	Zn	15.5	Cu	1,175	1,157	0.3320	9.19											
217	650	620	56.0	Ag	22.0	Cu	17.0	Zn	5.0	Sn	1,202	1,148	0.3328	9.21											
192	660 MP		100.0	Al							1,220		0.0976	2.70											
218	690	630	50.0	Ag	16.0	Cd	15.5	Cu	15.5	Zn	3.0	Ni	1,274	1,166	0.3328	9.21									
219	700	605	35.0	Ag	26.0	Cu	21.0	Zn	18.0	Cd			1,292	1,121	0.3208	8.88									
179	705	603	61.0	Ag	24.0	Cu	15.0	In					1,301	1,117	0.3425	9.48									
211	705	640	80.0	Cu	15.0	Ag	5.0	P					1,301	1,184	0.2753	7.62									

Indalloy Number	TEMP (Temperature critical alloy: ±2°C of solidus. Non-temperature critical alloy ±3°C) Liquidus	Solidus	Elemental Compostion (% by Mass)								TEMP Liquidus	Solidus	Density		Electrical Conductivity (1.72μohms-cm)	Thermal Conductivity @ 85°C	Coefficient Expansion @ 20°C	Tensile Strength	Shear Strength	Young's Modulus	Elongation	Brinell Hardness	Latent Heat of Fusion	Specific Heat SOLID	Specific Heat LIQUID
	°C	°C									°F	°F	lb/in³	gm/cm³	% of IACS	W/cm-°C	PPM/°C	PSI	PSI	PSI x 10⁶	%		J/g	J/g-°C	J/g-°C
212	710	605	30.0	Ag	27.0	Cu	23.0	Zn	20.0	Cd	1,310	1,121	0.3169	8.77											
214	720	600	60.0	Ag	30.0	Cu	10.0	Sn			1,328	1,112	0.3461	9.58											
193	780 E	780	72.0	Ag	28.0	Cu					1,436	1,436	0.3617	10.01											
220	785	775	71.5	Ag	28.0	Cu	0.5	Ni			1,445	1,427	0.3617	10.01											
194	800	370	98.0	Au	2.0	Si					1,472	698	0.6113	16.92											
221	800	690	63.0	Ag	28.5	Cu	6.0	Sn	2.5	Ni	1,472	1,274	0.3508	9.71											
195	890 E	890	80.0	Au	20.0	Cu					1,634	1,634	0.5662	15.67											
196	950 E	950	82.0	Au	18.0	Ni					1,742	1,742	0.5752	15.92											
207	961 MP		100.0	Ag							1,762		0.3794	10.50											
208	985	665	85.0	Cu	8.0	Sn	7.0	Ag			1,805	1,229	0.3205	8.87											
198	1020	1000	50.0	Au	50.0	Ag					1,868	1,832	0.4914	13.60											
199	1030	360	99.40	Au	0.60	Sb					1,886	680	0.6894	19.08											
222	1030	1025	99.0	Au	1.0	Ga					1,886	1,877	0.6818	18.87											
223	1063 MP		99.8	Au	0.2	P					1,945		0.6843	18.94											
200	1064 MP		100.0	Au							1,948		0.6973	19.30	73.4	3.18	14	20000		11.2	39 to 45(2in)			0.13	
532		see Indalloy #230																							

NOTES

note 1: Brinell Hardness, 2mm ball, 4kg load
note 2:Modified Brinell hardness, using 100-kg load, 1/2 min.
note 3:Depends on specimen preparation.
note 4:% elongation on 5.65 (sq. root Area) gauge length

Conversions:

Resistivity of IACS / Elec. conductivity %IACS = Resistivity of alloy
ex: 1.72 x 100 / %IACS = micro ohm - cm