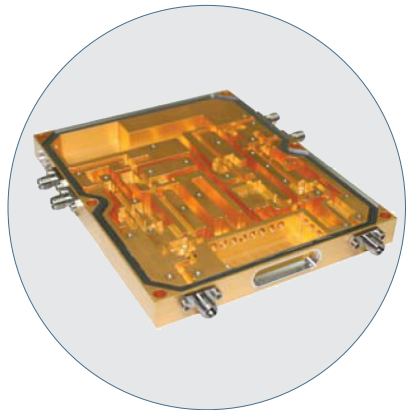


Common Alloys From HSG's Hi-Rel Alloys Division

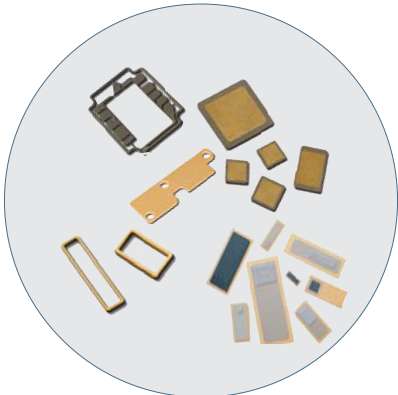
F Degrees Liquidus	F Solidus	F Eutectic or Melt Point	Composition	C Degrees Liquidus	C Solidus	C Eutectic or Melt Point	Density gm/cm	Density Troy Oz / In
244	244	x	52In,48Sn	118	118	x	7.3	3.85
268	244		52Sn, 48In	131	118		7.3	3.85
280	280	x	58Bi, 42Sn	138	138	x	8.56	4.51
289	289	x	97In, 3 Ag	143	143	x	7.38	3.89
		315	100 In			157	7.31	3.85
361	361	x	63 Sn, 37 Pb	183	183	x	8.4	4.43
365	345		60 In, 40 Pb	185	174		8.52	4.49
370	361		60 Sn, 40 Pb	188	183		8.5	4.48
408	356		50 In, 50 Pb	209	180		8.86	4.67
414	361		50 Sn, 50 Pb	212	183		8.87	4.67
415	361		90 Sn, 10 Pb	213	183		7.55	3.98
424	361		52 Pb, 48 Sn	218	183		8.95	4.72
430	430		96.5 Sn, 3.5 Ag	221	221		7.36	3.88
432	361		95 Sn, 5 Pb	222	183		7.42	3.91
437	383		60 Pb, 40 In	225	195		9.3	4.9
460	361		60 Pb, 40 Sn	238	183		9.28	4.89
536	536	x	80 Au, 20 Sn	280	280	x	14.51	7.64
		558	90 Pb, 5 Ag, 5 Sn			292	11	5.8
565	549		92.5 Pb, 5 Sn, 2.5 Ag	296	287		11.02	5.81
		572	92.5 Pb, 5 In, 2.5 Ag			300	11.02	5.81
597	558		95 Pb, 5 In	314	292		11.06	5.83
597	590		95Pb, 5Sn	314	310		11.06	5.83
612	590		98.5 Pb, 1.5 Sb	322	310		11.23	5.92
673	673	x	88Au/12Ge	356	356	x	14.67	7.73
		621	100 Pb			327	11.35	5.98
1436	1436	x	72 Ag, 28 Cu	780	780	x	10.01	5.27
		1762	100 Ag			961	10.5	5.53
		1945	100 Au			1063	19.3	10.17
		2826	100 Pd			1552	12.02	6.33



OTHER PRODUCTS & SERVICES:

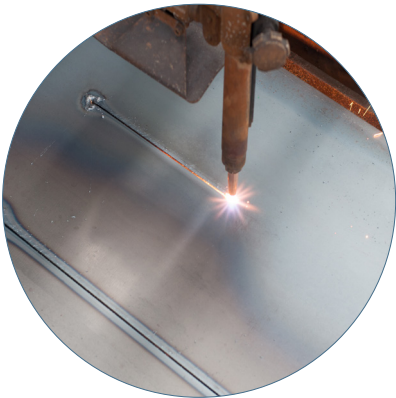
Hermetic Electronic Packaging

We bring customers' hermetic electronic package designs to life and use unique materials and manufacturing processes to help optimize for weight savings, footprint reduction, thermal transfer and more. Our precision machining capabilities allow us to meet very tight tolerances for Kovar, aluminum and titanium housings. We deliver the standard and custom packaging solutions that ensure the electronics within those devices are unaffected by whatever extreme environmental condition they operate in.



Enabling Components

There's more to a reliable hermetic package solution than a box and connectors and we manufacture components to ensure a module's long term viability. We produce: getters to prevent build-up of contaminants; solder preforms that aid in attaching electronic circuitry; ring frames that become integral side walls of a hermetic package; and custom thermal spreaders that ensure heat from a chip or substrate is efficiently dissipated. To top things off, we also manufacture package lids.



Laser and Integration Services

We provide high-speed laser welding, sealing and marking with consistent accuracy. Our laser welding expertise also extends to the manufacture of custom designed/build laser welding, cutting & sealing systems for customers who wish to bring those capabilities in house.

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