

# ***Belmont***

## **Soldering Alloys for Aluminum Joining**

Belmont offers a range of high-, medium-, and low-temperature soldering alloys to meet a variety of different needs for aluminum joining.

While aluminum and all the aluminum alloys can be soldered, alloying elements can have a considerable influence on their solderability. In addition, the soldering of aluminum differs from the soldering of copper, brass, steel, and most other common metals in a number of ways.

Feel free to call Belmont technical specialists for a discussion of alloy selection, proper surface preparation, and effective application techniques appropriate for your needs.

While data in the table on the reverse is based on the best available information, actual results may vary with design and other conditions. The data is provided only as an aid to product selection. Please inquire about the availability of soldering alloys not listed in the table.

### Comments on Table

#### Zinc-Aluminum Group

This group develops joints with high strength and good corrosion resistance. High solidus temperatures limit their use to applications where soldering temperatures in excess of about 700° (370°C) can be tolerated. The group is extensively used for cost-effective ultrasonic soldering of aluminum heat exchanger return bends, such as those in air conditioners.

#### Tin-Zinc Group

Widest usage for this group occurs where required soldering temperatures are lower than those offered by zinc-aluminum soldering alloys.

#### Cadmium-Zinc Group

The cadmium-zinc group is particularly useful in applications where service temperature is higher than that allowed with lower-melting alloys. Caution is advised during their use to avoid health hazards.

#### Tin-Lead-Zinc Group

Combines low melting range with good wetting action and corrosion resistance.

### **Belmont: *The Non Ferrous Specialists***

For maximum variety in non ferrous metals, alloys, formulations, and shapes.

Custom shapes and compositions available.



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## Zinc-Aluminum Group

Belmont Alloy Code	Composition (% weight)		Melting Temperature	
	Zn	Al	Solidus, °F (°C)	Liquidus, °F (°C)
8951	95	5	720 (382)	720 (382)
8982	98	2	720 (382)	757 (403)
8995	99	1	720 (382)	774 (412)

## Tin-Zinc Group

Belmont Alloy Code	Composition (% weight)		Melting Temperature	
	Sn	Zn	Solidus, °F (°C)	Liquidus, °F (°C)
7912	91	9	390 (199)	390 (199)
7802	80	20	390 (199)	518 (270)
7702	70	30	390 (199)	592 (311)
7601	60	40	390 (199)	645 (341)

## Cadmium-Zinc Group

Belmont Alloy Code	Composition (% weight)		Melting Temperature	
	Cd	Zn	Solidus, °F (°C)	Liquidus, °F (°C)
3601	60	40	509 (265)	635 (312)
3702	70	30	509 (265)	568 (298)
3830	82.5	17.5	509 (265)	509 (265)

## Tin-Lead-Zinc Group

Belmont Alloy Code	Composition (% weight)			Melting Temperature	
	Sn	Pb	Zn	Solidus, °F (°C)	Liquidus, °F (°C)
5636	34	63	3	340 (171)	490 (254)