

# SOLDER CONNECTION

UK: +44(0)1291 624 400

www.solderconnection.com

Ire: +353 (1) 842 1172

## Casting Alloys Chart

Casting Alloy	Melt Point (°C)	Operating Temp (°C)	Density	Application									Description
				Masters	Costume Jewellery	Giftware	Wargame Figures	Delicate Figures	Figurines	Car Kits	Locos Trams	Bulky Pieces	
GWN 1	220	265	7.39		✓	✓	✓	✓	✓				A Lead Free Pewter alloy which meets the criteria of BSEN611-1:1995, and BS5140:1974. GWN1 is easier to work with than "Pewter 92" but is slightly more expensive. GWN1 is Nickel free in accordance with E.U. Nickel Directive 94/27/EC.
TSC PureCast Pewter 92	245	285	7.27	✓	✓	✓	✓	✓	✓	✓			A high grade, lead free casting pewter alloy, which is rich in Tin and manufactured to the requirements of BSEN611-1:1995 (previously BS5140:1974). It is suitable for all highly detailed castings where good flow properties and polished finish are required. Pewter 92 is Nickel free in accordance with E.U. Nickel Directive 94/27/EC.
C90 (CT1)	228	280	7.5		✓	✓	✓	✓	✓	✓			A "Pewter" style alloy for use where a small amount of lead is permissible but larger casting bulk makes lead free Pewter difficult to use. A high cost alloy but very "User Friendly"
90/10 Master Metal	210	270	7.69	✓					✓	✓			A high grade Tin/Lead alloy specially designed for making masters. Exceptional flow and high definition are the main properties.
GWN 2	210	270	7.64		✓	✓	✓	✓	✓	✓	✓	✓	A high tin alloy for top quality jewellery manufacture. Its features are maximum flow and superb definition. Especially suitable for high class polishing and plating.
GWN 3	220	275	7.7		✓	✓							A lower cost version of GWN 2, with slightly higher lead content. Suitable for high quality modelling pieces where a polished finish is required.
GWN 75	220	290	8	✓	✓	✓	✓	✓	✓			✓	A complex alloy which can be used for economic large master manufacture and general high quality giftware. A budget version of GWN 2 and GWN 3.
TSC PureCast KA	185	245	8.99		✓	✓	✓	✓					Tin rich alloy widely used in the jewellery trade for fine delicate castings where good flow properties and detail are needed. Has a good shiny surface finish and is very malleable. Also particularly suitable for hand cast model figures.



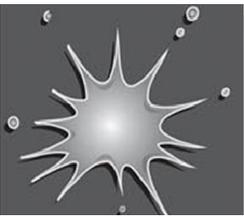
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Grade 425	205	260	9.38		✓	✓	✓		✓			✓	This alloy has been specially developed for the manufacture of large figures which are to be plated or painted. This alloy is comparatively hard and has good flow properties and a perfect surface finish.	
37/3/60	225	290	9.7				✓	✓					A variant of Grade 37% prepared specifically for figure casters. Its flow properties are superior but the alloy is harder. Particularly suitable for small figures having much detail.	
Grade 37/7	228	300	9.75	✓		✓			✓			✓	A more expensive version of grade 37 which is particularly good for bulky pieces.	
Grade 37%	228	300	9.75		✓	✓							Lead rich alloy again popular with Jewellery manufacturers. This alloy is suitable for castings of larger bulk where detail is more important than flow properties.	
GWN 35	205	255	9.7			✓	✓	✓	✓	✓	✓	✓	A Lead rich alloy giving low porosity and lower working temperatures. Suitable for bulky items of jewellery and figurines etc.	
34.5/34.5X	225	295	9.55									✓	✓	A very popular alloy for the manufacture of models kits eg. cars, locos, trams, etc., Gives a good surface finish on flat surfaces and excellent reproduction of detail, good flow properties exhibited but low malleability.
B1 Alloy	210	280	9.64			✓					✓	✓	Slightly more expensive than 34.5 this alloy gives surface detail far superior to other alloys. Excellent flow but low malleability, mainly used for castings with a large plain surface area.	
TSC PureCast 58/42 PbBi	168	220 - 230	10.7				✓	✓	✓				✓	This alloy gives good detail on castings of varying size. It has excellent flow properties, is quite malleable and can be plated. Surface finish will be free from porosity but with a matt grey colour.
60/40 - 65/35 - 70/30	168	220 - 230	10.7				✓	✓	✓				✓	These are cheaper variations of Grade 58/42 alloy. They contain more lead than and have consequently slightly higher melting temperature and reduced flow properties. However, our clients find that very satisfactory results are obtained at a considerable saving.
Grade L	243	308	10		✓	✓	✓	✓						Suitable for figures and jewellery components giving clear reproduction of detail and maximum malleability.



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Grade D	248	313	10.06		✓	✓	✓	✓	✓				Slightly less tin content than Grade 'L' but having commensurate characteristics of flow definition and malleability. This is popular with manufacturers of Wargame pieces and is an economical substitute for the above.
Grade LG	240	300 - 310	10.66				✓	✓					This is a specially developed alloy designed to give the best flow and definition commensurate with a low price. The alloy is malleable and can be plated. It is particularly useful in the manufacture of small figures and vehicles. Economy is the main feature of this material.
Grade 24	260	325	10.2		✓	✓		✓					Has a very good surface finish but low malleability. Ideal for the caster with economy in mind.
Grade 18.5	275	340	10.45		✓	✓				✓			A somewhat brittle alloy but useful for large castings where a large bulk of metal can be used. Good detail reproduction but relatively high operating temperature required.
Grade 4/12	255	325	10.62			✓							Very inexpensive alloy which will produce adequate detail. Very brittle however and not suited to castings of intricate design.
8Sb	290	340	10.9			✓				✓		✓	Very low grade and very cheap alloy especially for heavy large bulky items where cost is the main consideration.

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