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# 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 permissable 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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