
CAPE PRECIOUS METALS

GUIDE TO WORKING WITH ALLOYS



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Alloy	Suitable for:	Alloy Composition	Colour	Melting Range / Casting Temp	Solders	Specific Gravity	Annealing Colour
9ct Y Bench	Bench work Rolling	37.6% AU (AG/CU/ZN)	Light Yellow	880 - 900°C Melting	9ct EE, E, M & H YELLOW	11.2	Dull Cherry Red

Hints, Tips & Uses:

- General purpose yellow gold alloy
- Good setting properties
- Due to the presence of zinc, this alloy may not perform in a satisfactory manner when enamelled
- Can be quenched for maximum ductility
- When melting, use a soft flame to avoid zinc burnout which will cause discolouration (red) and cracking



9ct Y Casting	Casting Only	37.6% AU (AG/CU/ZN/SI)	Pale Yellow	980 - 1020°C Casting	9ct E, M & H YELLOW	12.88	-
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Hints, Tips & Uses:

- Versatile casting alloy with good fluidity and form filling properties
- Due to the presence of zinc, this alloy may not perform in a satisfactory manner when enamelled
- If used for bench work, the metal cracks & becomes hard





9ct W Nickel	Bench work Casting Rolling	37.6% AU (AG/NI/CU/ZN)	Bright White	980 - 1040°C Melting	9ct M WHITE	13.78	Cherry Red
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Hints, Tips & Uses:

- Nickel content conforms to international standards and is magnetic
- Do not use for piercing components
- Excellent rolling properties and is good for bangles
- Boric acid flux should be used to keep the metal clean during the melting process. The molten metal should be mixed well with a stirring rod before pouring to assure a good mix. Remove the ingot from the mold and allow to air cool (which will soften the alloy) - don't quench. Soak in a hot pickling solution to remove surface oxides.



Alloy	Suitable for:	Alloy Composition	Colour	Melting Range / Casting Temp	Solders	Specific Gravity	Annealing Colour
9ct W 7% Palladium	Bench work Casting Rolling	37.6% AU (AG/PD/ZN)	Dull White	980 - 1050°C Melting	9ct E, M WHITE & 960	13.7	Dull Cherry Red
Hints, Tips & Uses: <ul style="list-style-type: none"> • Versatile metal alloy, more economical than 19% Palladium alloy • Use a softer flame than 19% Pd alloy • Rhodium plate for bright white colour • Casting temperature = 1020°C, Flask Temperature = 450-700°C 							
9ct W 10% Palladium	Bench work Casting Rolling	37.6% AU (AG/PD/CU/ZN)	-	1020°C Melting	9ct E, M WHITE	13.8	Cherry Red
9ct W 15% Palladium	Bench work Casting	37.6% AU (AG/PD/CU))	-	-	9ct E, M WHITE	14.1	-
9ct W 16% Palladium	Bench work Casting Rolling	37.6% AU (AG/PD)	-	1480°C Melting	9ct E, M WHITE	14.1	-
9ct W 19% Palladium	Bench work	37.6% AU (AG/PD/CU)	Grey / White	1050°C Melting	9ct E, M WHITE & 960	14.21	Dull Cherry Red
Hints, Tips & Uses: <ul style="list-style-type: none"> • Deoxidize thoroughly - use reducing flame to prevent blistering during annealing • Can rhodium plate for brilliant white finish 							

Alloy	Suitable for:	Alloy Composition	Colour	Melting Range / Casting Temp	Solders	Specific Gravity	Annealing Colour
9ct W Nickel Free	Casting Only	37.6% AU (AG/CU/ZN)	Straw White	1110°C Casting	9ct M WHITE	12.4	Cherry Red

Hints, Tips & Uses:

- Good casting properties • This alloy does not contain Nickel or Palladium • Rhodium plate for bright white colour
- Soft alloy, suitable for handwork & casting



9ct Red	Bench work Casting	37.6% AU (AG/CU))	Red	900 - 960°C Melting	9ct E, M & H RED	11.1	Cherry Red
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Hints, Tips & Uses:

- General purpose red gold alloy • Work hardens quickly due to high copper content • Use soft flame when annealing and roll gently • “Air cool” - no quenching • This alloy is age-hardenable








14ct Y Cast	Casting Only	58.4% AU (AG/CU/ZN/SI)	Pale Yellow	930 - 1020°C Melting	14 ct E,M & H YELLOW	14.3	-
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Hints, Tips & Uses:




- Specialist casting alloy
- Easy finish
- Good fluidity and form filling properties









Alloy	Suitable for:	Alloy Composition	Colour	Melting Range / Casting Temp	Solders	Specific Gravity	Annealing Colour
14ct Y Bench	Bench work Only	58.4% AU (AG/CU/ZN)	Bright Yellow	850 - 920°C Melting	14ct E,M & H YELLOW	14.3	Dark Red
<p>Hints, Tips & Uses:</p> <ul style="list-style-type: none"> • Soft metal that rolls well • Work hardens slowly • Do not melt too often or at too high a temperature: this will cause cracking & the metal to become red & brittle due to zinc burnout • Polishes well and has a good finish 							
14ct W 10% Palladium	Bench work Casting	58.4% AU (AG/PD)	-	1130°C Melting	-	15.80	Cherry Red
							
14ct W 18.5% Palladium	Bench work Only	58.4% AU (AG/PD)	Good White	1095 - 1150°C Melting	18ct E, M & H WHITE or 960	16.1	Cherry Red
<p>Hints, Tips & Uses:</p> <ul style="list-style-type: none"> • Excellent bench work metal. Anneal well & often • Soft alloy due to high palladium content • Can be used for centrifugal casting • Rhodium plating optional 							

Alloy	Suitable for:	Alloy Composition	Colour	Melting Range / Casting Temp	Solders	Specific Gravity	Annealing Colour
14ct W Nickel	Bench work Casting Rolling	58.4% AU (NI/CU/ZN)	White	1220°C Melting	18ct E,M WHITE or 960	14.89	Cherry Red
<p>Hints, Tips & Uses:</p> <ul style="list-style-type: none"> • Multi purpose Nickel alloy, which is magnetic • Always ensure Nickel is mixed thoroughly • Plasticity and workability is good for bench and rolling when the metal is annealed and allowed to cool slowly • The Nickel content conforms to International standards • Anneal and air cool slowly 							
14ct Red	Bench work Only	58.4% AU (AG/CU)	Red	920°C Melting	9ct or 18ct E,M RED	15.1	Red
<p>Hints, Tips & Uses:</p> <ul style="list-style-type: none"> • Anneal as little as possible and allow to air cool • This metal work hardens quickly • This metal is difficult to roll. 							
18ct Yellow	Bench work Casting Rolling	75.2% AU (AG/CU)	Light Yellow	960 - 990°C Melting	18ct E, M & H YELLOW	15.96	Dull Cherry Red
<p>Hints, Tips & Uses:</p> <ul style="list-style-type: none"> • General purpose yellow gold alloy. • Widely used by goldsmiths for all applications 							

Alloy	Suitable for:	Alloy Composition	Colour	Melting Range / Casting Temp	Solders	Specific Gravity	Annealing Colour
18ct R Bench	Bench work Casting	75.2% AU (AG/CU)	Red	890 - 895°C Melting	18ct E, M & H RED	15.9	Cherry Red
<p>Hints, Tips & Uses:</p> <ul style="list-style-type: none"> • Do not anneal often as cracking can occur. Can be annealed in furnace at 650°C - the time depends on the size of the piece • Alternatively, it may be heated to cherry red and quenched from a black heat for maximum ductility 							
18ct W Nickel	Bench work Casting Rolling	75.2% AU (CU/NI/ZN)	Grey / White	1050°C Melting	18ct E, M & H WHITE	15.9	Cherry Red
<p>Hints, Tips & Uses:</p> <ul style="list-style-type: none"> • General purpose white gold alloy • Cool metal slowly • This metal is magnetic • Good rolling properties and good for bangles 							
18ct W 10% Palladium	Bench work Casting	75.2% AU (AG/PD/CU)	White	950°C Melting	18ct E, M & H WHITE	16.2	Cherry Red
<p>Hints, Tips & Uses:</p> <ul style="list-style-type: none"> • Alloy should be quenched for maximum ductility • Casting Temperature = 1220°C • Must rhodium plate for brilliant white finish 							

Alloy	Suitable for:	Alloy Composition	Colour	Melting Range / Casting Temp	Solders	Specific Gravity	Annealing Colour
18ct W 12% Palladium	Bench work Casting	75.2% AU (AG/PD/CU)	White	960°C Melting	18ct E,M & H WHITE	16.2	Cherry Red
<p>Hints, Tips & Uses:</p> <ul style="list-style-type: none"> • Alloy should be quenched for maximum ductility • High casting temperature = 1340°C • Must rhodium plate for brilliant white finish • Age hardenable alloy – heat to 450°C for 90 minutes 							
18ct W 12.5% Palladium	Bench work Rolling	75.2% AU (AG/PD)	White	960°C Melting	18ct E, M & H WHITE	16.2	Cherry Red
<p>Hints, Tips & Uses:</p> <ul style="list-style-type: none"> • General purpose white gold alloy • Metal has good setting properties • Alloy should be quenched for maximum ductility • Must rhodium plate for brilliant white finish 							
18ct W 13% Palladium	Bench work Casting Rolling	75.2% AU (PD/IND/COP)	White	980°C Melting	18ct E, M & H WHITE	-	Red
<p>Hints, Tips & Uses:</p> <ul style="list-style-type: none"> • Melts and flows easily • Black once melted due to copper content • Rolls with a bit more resistance due to copper content • Polishes very easily 							

Alloy	Suitable for:	Alloy Composition	Colour	Melting Range / Casting Temp	Solders	Specific Gravity	Annealing Colour
18ct W 16% Palladium	Bench work Rolling	75.2% AU (AG/PD)	White	1150°C Melting	18ct E, M & H WHITE	16.3	Cherry Red
<p>Hints, Tips & Uses:</p> <ul style="list-style-type: none"> • General all purpose white alloy with high ductility • Softer alloy which is good for setting • Must rhodium plate for brilliant white finish 							
18ct W Platinum & Palladium	Bench work Rolling	75.2% AU (PT/PD)	Superior White	1200°C Melting	18ct E, M & H WHITE & 960	17.43	Dull Cherry Red
<p>Hints, Tips & Uses:</p> <ul style="list-style-type: none"> • No age hardening needed • Frequent annealing allows for good rolling • Excellent properties for tension setting • If used for casting, use Phosphate Bond investment powder and centrifugal casting system 							
22ct Y General Purpose	Bench work	91.67% AU (AG/CU)	Yellow	1052 – 1063°C Melting	18ct E, M & H YELLOW	18	Dull Red
<p>Hints, Tips & Uses:</p> <ul style="list-style-type: none"> • General all purpose yellow alloy • Softest alloy in gold-copper or silver series 							



Alloy	Suitable for:	Alloy Composition	Colour	Melting Range / Casting Temp	Solders	Specific Gravity	Annealing Colour
Palladium RU	Bench work Casting Rolling	95% PD (RU/CPM ALLOY)	White	1450 - 1500°C Melting	PD E & H, 1020 18ct H WHITE	11.7	Cherry Red
Hints, Tips & Uses:							
<ul style="list-style-type: none"> • White malleable light-weight metal that is easy to polish • This metal will not cause skin irritation • Do not rhodium plate this metal • Casting temperature = 1600°C, Flask temperature = 700-800°C 							
Platinum CU	Bench work Casting Rolling	95% PT (CU)	White	1740 - 1755°C Melting	1020, 1200 & 1400	20	Cherry Red
Hints, Tips & Uses:							
<ul style="list-style-type: none"> • General all purpose alloy • Medium to soft alloy 							
Platinum RU	Bench work Casting Rolling	95% PT (RU)	White	1780 - 1800°C Melting	1020, 1200, 1400 & 1600	20.7	Cherry Red
Hints, Tips & Uses:							
<ul style="list-style-type: none"> • General all purpose alloy • Universal alloy which can be cast, machined and used for bench 							

Alloy	Suitable for:	Alloy Composition	Colour	Melting Range / Casting Temp	Solders	Specific Gravity	Annealing Colour
Platinum AU	Bench work Casting Rolling	95% PT (AU)	White	1740-1755°C Melting	1020 & 1200	21.3	Cherry Red

Hints, Tips & Uses:

- General all purpose alloy
- Medium to soft alloy



Alloy	Suitable for:	Alloy Composition	Colour	Melting Range / Casting Temp	Solders	Specific Gravity	Annealing Colour
Argentium Silver	Bench work Casting Rolling	96% AG (CU, GERM, SIL)	Silver	905°C Melting	Argentium	10.40	-
<p>Hints, Tips & Uses:</p> <ul style="list-style-type: none"> • Superior Casting alloy • Must be allowed to cool slowly before quenching. Quench when the redness of metal is gone • Can be pickled to a minimum 							
Sterling Silver	Bench work Casting Rolling	92.5% AG (CU)	Silver White	968.3°C Melting	AGEE, AGE, AGM & AGH	10.41	Dark Red
<p>Hints, Tips & Uses:</p> <ul style="list-style-type: none"> • General all purpose alloy • Can be rhodium plated • Can be oxidised and enamelled 							
Tarnish Resistant Sterling Silver	Bench work Casting Rolling	92.5% AG (CPM ALLOY)	Bright Silver	968.3°C Melting	AGEE, AGE, AGM & AGH	10.52	Cherry Red
<p>Hints, Tips & Uses:</p> <ul style="list-style-type: none"> • Slightly harder than normal Sterling Silver • Medium to soft alloy • Cannot be oxidised or enamelled 							