

lowers T_c drastically. If this "magnetism" could be switched off, T_c probably would go up to approximately 1 K.

As a conclusion we would like to remark that improved experimental techniques, better sample preparative methods together with the intrinsic properties of rhodium permitted us to gain new insights into the world of superconductivity near absolute zero.

References

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Improved Platinum Investment Castings

The interest in platinum as a jewellery material that was regenerated in the United Kingdom by the introduction of the Hallmarking Act of 1973 stimulated efforts by investment casters to improve the quality of their products by the use of modern technology. Early work by Johnson Matthey to develop the most suitable platinum alloys has been reported here previously (G. Ainsley, A. A. Bourne and R. W. E. Rushforth, *Platinum Metals Rev.*, 1978, **22**, (3), 78-87). Depending on the application,

two alloys are recommended, 4.5 per cent cobalt-platinum with an as-cast hardness of 135 Hv, and where a soft alloy is required 4.5 per cent palladium-platinum (as-cast Hv = 65).

Of course, the high melting point of platinum imposes severe conditions on all materials involved in the investment casting process, so more recently alternative refractory materials and plant have been evaluated. Careful utilisation of the most suitable refractories has produced an investment which is resistant to the high temperatures involved and also a crucible with an extended working life. As a result it is now normal practice to produce investment trees containing up to 60 ring shanks or 150 settings and weighing up to 1 kg, a ten-fold increase on previous capabilities. Simultaneously the use of the improved investment material has led to a dramatic improvement in the surface quality of the castings, and so the task of the manufacturing jeweller producing the finished article has been made significantly easier.

The tree illustrated here consists of a small selection of the many patterns that are cast in platinum for the manufacturing jeweller. These include fine and delicate settings weighing under 1 gram, complicated dress rings and signet rings weighing over 30 grams. Now, within the limiting parameters of the investment casting process, any item of jewellery or allied products can be cast successfully in platinum.

G. A.

