

# *The Philosophers' Stone*

June 2006

## **There is no such thing as white gold!**

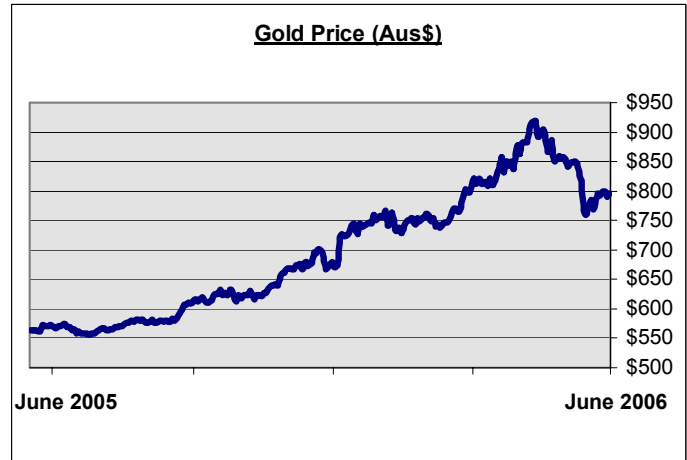
Gold is yellow. In fact all metals, with the exception of copper and gold, are silvery grey in colour.

When we speak of white gold we are referring to white gold alloys. The white colour is achieved by the choice of alloying metals, which bleach the yellow of pure gold. White gold is not platinum.

Nickel, palladium and platinum are strong bleachers of gold whilst silver and zinc are moderate in effect.

Historically two classes of white gold alloys have evolved, the nickel whites and the palladium whites. Good nickel whites tend to be hard and difficult to process. Good palladium whites tend to be soft, easy to process (apart from lost wax casting), have superior colour characteristics, however they are more expensive due to the price of palladium.

There is a demand for cheaper alternatives to the palladium whites. Nickel is one such alternative but has the major disadvantage of potential skin allergy problems. Many new patented alloys are coming onto the market, most of these rely on manganese additions as the principle whitener. Some are palladium free and others are low palladium alloys. They tend to be hard and difficult to process and compositions of such alloys are not published.



## **Why do White Golds turn yellowish?**

It is important to realise that even the best white gold alloy has a yellow brownish tint and thus it is common practise to rhodium plate white gold jewellery.

Rhodium is of the platinum family of metals and has a high reflectivity and good metallic white colour. The purpose of plating is to add lustre as well as prevent oxidation of some of the metals found in the alloys.

Typically white gold is plated with 0.05 to 0.5 micron layer of rhodium. When the rhodium plating wears through the colour of the actual white gold alloy can be seen. i.e. yellowish. The longevity of the plating is dependant primarily on the thickness of the plating.

In some instances, cheap diamond rings are made in low carat yellow gold alloys, usually as a one-piece casting. The head or diamond set portion of the ring is then rhodium plated to imitate a two-part ring. This is obviously a disaster as the rhodium wears off.

## **End of Financial Year**

We at PMT would like to take this opportunity to say thank you very much to all our customers for their valuable and loyal support over the past 12 months.

In this type of industry on-going support is a huge positive and has enabled us to demonstrate our commitment with a large investment in premises and equipment. We are the only operating refinery in Queensland.

We do appreciate that many of our clients are retailing in an increasingly competitive market for that discretionary spend and we would sincerely like to wish everyone every success for the next financial year.

Question: 'Aurophobia' is the fear of what?  
Answer: Gold – from the Latin...aurum  
...hope it's not contagious