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## Platinum-Iridium Alloys in Jewelry

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# WHAT IS PT950/IR50?

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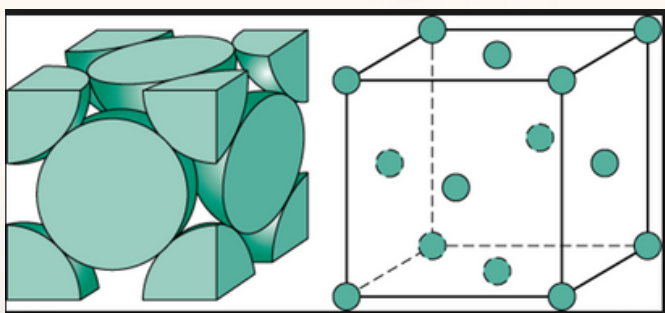
Platinum (Pt), derived from the Spanish Platina "silver", is a widely used alloy used in the manufacturing of jewelry. Iridium is combined with pure platinum to increase the alloy's strength and hardness. Pt950/Ir is 95% platinum and only 5% iridium yet, this alloy is wanted for its soft and fragile gem setting. Pure platinum is hardly used due to its low hardness of approximately 40 Vivkers; therefore, these precious metals are crafted to have an arrangement of unique characteristics such as scratch resistance, tarnish resistance, color, etc.



## PURE PLATINUM BARS

### PROPERTIES:

- High melting point
- Corrosion resistance and chemical resistant
- Malleable and ductile
- High tensile strength
- Malleable and ductile
- Heavy
- Conductor of electricity and heat



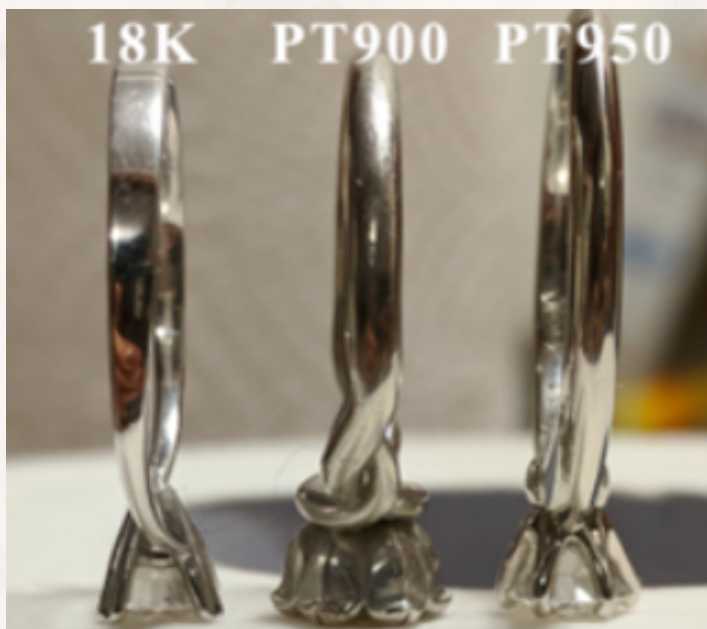
Face-centered-cubic

### STRUCTURE:

- Face-centered-cubic (FCC) crystal structure
- High resistance to surface scratching due to increased hardness.
- Grain sizes and surface roughness in Pt950/Ir can be analyzed as a function of the film thickness. The smaller the grain size, the high resistance to becomes.

### MATERIAL PROCESSING:

- Fabrication
- Die Striking
- Annealing



Comparing 18k, Pt900/Ir, and Pt950/Ir surface

### PERFORMANCE AND APPLICATIONS:

Applications include manufacturing jewelry, dental fillings, computer hard drives, spark plugs in vehicle, etc.

