

Material Properties and Possible Applications

The alloys listed in the table below represent only a small selection of the alloys produced by Heraeus. We will be pleased to help you with your inquiries or special requirements.

Material	Melting point or range [° C]	Material properties	Possible applications
Pt	1769	High thermal and chemical stability. Platinum in various purities.	Laboratory apparatuses such as crucibles and dishes which are only exposed to low mechanical stresses.
Pt-DPH	1769	The finely dispersed oxide particles in platinum and platinum alloys significantly increase the mechanical strength and corrosion resistance.	Laboratory equipment and structural components which are subject to high mechanical stresses at high temperatures.
PtAu 95/5-DPH	1675 – 1745		
PtRh 90/10-DPH	1840 – 1870		
PtIr 97/3	1772 – 1773	The mechanical strength, thermal and corrosion resistance become greater with increasing iridium content. Platinum-iridium alloys suffer from increased weight loss in oxidising atmosphere.	Laboratory apparatuses or structural components which are exposed to severe mechanical, thermal and corrosive effects.
PtIr 90/10	1780 – 1800		
PtIr 80/20	1830 – 1855		
PtRh 90/10	1840 – 1870	The mechanical strength, thermal and corrosion resistance become greater with increasing rhodium content. An advantage of the platinum-rhodium alloys is that only a minimal weight loss occurs even in oxidising atmosphere.	Heavy-duty laboratory equipment, electrodes, glass fibre bushings and lining materials for components to contain molten glass.
PtRh 80/20	1870 – 1910		
PtAu 95/5	1675 – 1745	The gold content reduces the wetting by glass melts so that the glass can be easily removed after solidification without leaving any residues. The mechanical strength is also increased and the tendency to recrystallize is reduced.	These properties make PtAu 95/5 the preferred material for apparatus for the preparation of samples for X-ray fluorescence analysis (XRF).
AuPt 90/10	1120 – 1180	This gold alloy shows increased mechanical strength compared with pure gold and good resistance to phosphorus. Platinum based alloys are more susceptible to corrosion by phosphorus.	Dishes, e.g. for flour ignition, sugar ignition, etc.
Ag	961	Good conductivity, chemical stability (in particular, resistance to phosphorus).	Crucibles for reagents which corrode platinum alloys; contact materials.
Au	1063		
Ir	2447	Iridium is the preferred material for oxide melts because of its good corrosion resistance and high temperature stability in inert atmospheres.	Crucibles for crystal growing. Components which are subject to severe thermal conditions.