## THE NOBEL PRIZE MEDALS

This year's Nobel Prizes will soon be awarded. Here we take a look at the composition of the medals awarded to the winners – as well as a fun bit of chemistry history involving the medals!

PRE-1980

Au

**APPROX. 96%** 

23 CARAT GOLD SOLID GOLD - NO COATING MASS: 200 GRAMS



POST-1980

Au

**APPROX. 75%** 

18 CARAT GOLD 24 CARAT GOLD COATING MASS: 175 GRAMS

## **NOBEL PRIZES & AQUA REGIA**

During the Second World War, when Germany invaded Denmark, the Nobel Prizes of physicists Max von Laue and James Franck were dissolved in aqua regia (a mix of nitric acid and hydrochloric acid) by the Hungarian chemist George de Hevesy. This prevented them being discovered, and the gold was later recovered from the solution and the medals recast.

**DISSOLVING GOLD IN AQUA REGIA** 

 $Au + 3 HNO_3 + 4 HCI \Rightarrow HAuCI_4 + 3 NO_2 + 3 H_2O$ 

**AQUA REGIA** 

CHLOROAURIC ACID

**RECOVERING GOLD FROM AQUA REGIA** 

3 NaHSO<sub>3</sub> + 2 HAuCl<sub>4</sub> + 3 H<sub>2</sub>O → 3 NaHSO<sub>4</sub> + 8 HCl + 2 Au

SODIUM BISULFITE

**ELEMENTAL GOLD** 



