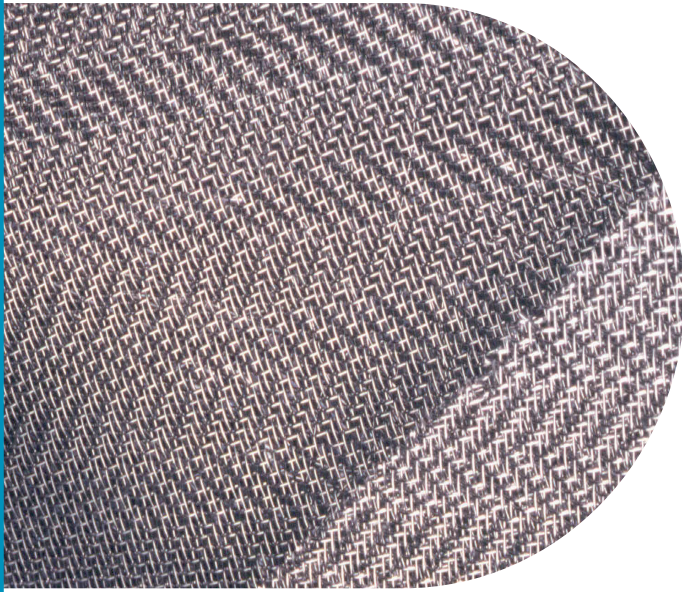


Platinum-rhodium gauze is used as a catalyst in making nitric acid for fertiliser



FROM PHARMA TO FARMER

Platinum is used in many ways, from cancer treatments to improving crop yields, making a real difference to our lives on a daily basis

Platinum-based antineoplastic drugs are today used to treat almost 50 per cent of all cancer patients, and 2018 marks the 40th anniversary since cisplatin - the first ever platinum-based anti-cancer drug - was approved by the USA's Food and Drug Administration.

Cisplatin, known as the 'penicillin' of cancer drugs, revolutionised the treatment of many cancer diagnoses, especially testicular, bladder, lung and stomach cancers.

Leading the fight against cancer

Platinum's cancer-fighting properties were discovered by accident in the 1960s.

Cisplatin works by forming a platinum complex inside a cancer cell which binds to DNA. In a process called 'cross-linking', the platinum damages the cell's DNA, causing the cell to die.

While new and improved formulations of cisplatin have emerged over the years since it was first licensed, it remains as critically important now as when it was first discovered.

Current research is looking at ways in which nanoparticles can be used in conjunction with

cisplatin to better target cancer cells, avoiding healthy tissue.

The forefront of food production

In addition to its medical applications, platinum's unique characteristics mean it has a vital role to play as agriculture rises to the challenge of meeting growing demand.

The United Nations Food and Agricultural Organisation projects that food and feed production will need to increase by 70 per cent by 2050 to meet the world's food needs.

Maintaining food production for the growing world population requires the ability to grow more food on current cropland, and fertiliser is key to achieving this.

Due to its catalytic properties, platinum has been used in the commercial production of nitric acid - a key component of fertiliser - since the early 20th century.

Around 90 per cent of nitrogen manufactured using platinum goes towards producing the 190m tonnes of fertiliser nutrients used each year.

Industrial applications one-fifth of demand

Industrial applications like cisplatin and nitric acid production account for around one-fifth of total platinum demand. This industrial demand segment (excluding platinum's use in automotive applications) is most strongly correlated, in the long term, to global economic growth.

As one of the rarest metals in the world, platinum is also sought after across other segments such as jewellery, and it is increasingly being owned as an investment asset.

FACT FILE



Platinum's unique properties mean it is in demand by industry.

Industrial demand (excluding autos) accounts for c. one-fifth of total platinum demand.



Platinum acts as a catalyst, increasing yields in chemical processes.

In 1901 platinum was first used in the production of nitric acid, a key ingredient in fertiliser.



Platinum drugs are now used in nearly 50% of all chemotherapy treatments.

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