Ruthenium (Ru)

Atomic number: 44

Atomic mass: 101.07

Description: The name is derived from ‘Ruthenia’, the Latin name for Russia.

Discovered by: Karl Karlovich Klaus in 1844.

Properties:

Melting point: 2606K Boiling point: 4420K

Density: 12.1 g/cm^3 State: Solid

Group: 8 Period: 5 Block: d

Electronic Configuration: [Kr] $4d^7 5s^1$

Isotopes: ^{101}Ru, ^{102}Ru, ^{104}Ru

Appearance: A shiny, silvery metal

Uses:

1) Many new uses are emerging for ruthenium. Most is used in electronic industry for chip resistors and electrical contacts.

2) Ruthenium oxide is used in chemical industry to coat the anodes of electrochemical cells for chlorine production. Ruthenium is also used in catalyst for ammonia and acetic acid production.

3) Ruthenium compounds can be used in solar cells, which turn light energy into electrical energy.

4) It is one of the most effective hardeners for platinum and palladium and is alloyed with these metals to make electrical contacts for severe wear resistance. It is used in some jewellery as an alloy with platinum.

Source: *www.rsc.org*