

Neptunium (Np)

Element classification: Transuranic heavy metal

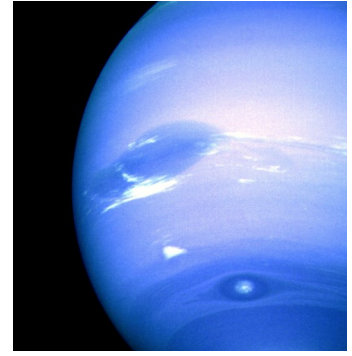
No. of isotopes: 20 (0 stable, 0 natural)

Typical elemental concentrations:

Soil (Japan): 100-110 kBq/m³

Lake sediment (Japan) 181-347kBq/m³

North Atlantic Surface water: 0.16-0.62 mBq/m³



Behaviour in the Environment

- ◆ Highly mobile, particularly in acidic environments
- ◆ Np (V) more soluble than Np (IV)
- ◆ Uptake in plants via roots strongly affected by soil pH
- ◆ Accumulation in liver and bone with a long residence time in the body

Neptunium

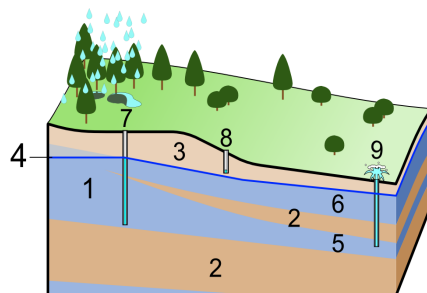
radioecology

Key sources

- ◆ Nuclear fuel reprocessing
- ◆ Atmospheric nuclear weapons tests
- ◆ Accidental release from nuclear reactors: Chernobyl

Why is it of interest?

- ◆ Long half-life
- ◆ High radiotoxicity
- ◆ Mobility through ground
- ◆ Radionuclide of high concern in the long-term for high-level nuclear waste repositories



For more information ...

[\$^{237}\text{Np}\$ Factsheet IRSN](#)

[\$^{237}\text{Np}\$ Health sheet IRSN](#)