

PROMETHIUM- Pm**61**

Atomic Number

**Prometheus**
(The God of fire)

CLUE: The name Promethium is derived from the word 'Prometheus' who is Roman God of fire. This picture shows Prometheus (God of fire) bearing a brooch on his chest and having number 6 on it. The fire torch held by him is in the shape of number 1. This picture shows that the atomic number of element promethium is 61.

Facts about Promethium

The name Promethium is derived from the Greek mythological figure **Prometheus** who stole fire from **Mount Olympus** to give it to mankind. Promethium is not found in nature and is produced artificially as a byproduct during nuclear fission of uranium. It is the only synthetic/man-made radioactive lanthanoid.

Type of Element : Inner-transition Metal (Artificial & Radioactive)

Atomic Number : 61

Electronic : 2, 8, 18, 23, 8, 2 or

Configuration $1s^2, 2s^2 2p^6, 3s^2 3p^6 3d^{10}, 4s^2 4p^6 4d^{10}, 5s^2 5p^6, 4f^6 6s^2$ or
 $[Xe]^{54} 4f^6 6s^2$

Atomic Mass : 145 g/mol

Group, block : Not Applicable, f-block

Period : 6

Oxidation States : +3

Isotopes : 2 (${}_{61}^{145}\text{Pm}$ and ${}_{61}^{147}\text{Pm}$)

Discovered by : A. Marinsky, Lawrence E. Glendenin and Charles D. Coryell in 1945



Promethium is a
Radioactive element

Uses of Promethium:

- Promethium is used as a source of beta particles.
- Promethium is also used in nuclear power batteries for space-crafts

Multiple Choice Question

Question 61: The electronic configuration of Pm^{3+} is;

- | | |
|--------------------------|--------------------------|
| a) $[Xe]^{54} 4f^6 6s^2$ | b) $[Xe]^{54} 4f^3 6s^1$ |
| c) $[Xe]^{54} 4f^2 6s^1$ | d) None of the above |