

atomic mass of all members

of this series is given by the general formula $4n+3$, where n is an integer.

[4] The $(4n+1)$ or Neptunium series begins with $^{237}_{91}\text{Pu}$

and finishes with $^{209}_{83}\text{Bi}$ (stable). The atomic mass of all members of this series is given by the general formula $4n+1$ where n is integer.

The first three series are natural series while fourth series is known as artificial series. The first three series are given in the following tables. Their general characteristics are as follows.

(i) All the series are named after the member of longest half life period.

(ii) An isotope in one series does not decay to a particular isotope

(iii) The end product in all the series is an isotope of lead eg $^{208}_{82}\text{Pb}$, $^{206}_{82}\text{Pb}$ and $^{207}_{82}\text{Pb}$

Thorium Series.

Name of elements	Symbol	At No (Z)	Mass No (A)	Emitted Radiations	Half life
Thorium	Th	90	232	α	1.3×10^{10} yrs
Radium	Ra	88	226	β	6.7 yrs
Actinium	Ac	89	228	β	6.2 hrs

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				1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
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