



>>Entry Name: Francium

CAS Registry Number: 7440-73-5

Fr

Molecular Formula: Fr

Molecular Weight: 223.02

Accurate Mass: 223.019733

Percentage Composition: Fr 100.00%

General Statement: Atomic No. 87. Ground state electron config. [Rn]7s¹. Identified in 1939 by M. Perey. Only 1 naturally occurring isotope ²²³Fr known. Intensely radioactive and short lived. Occurs in traces in U ores

Source/Synthesis: Obt. from ²²⁷Ac by neutron bombardment of Ra

Melting Point: Mp 27°

Boiling Point: Bp 680°

>>Variant: Francium 210

CAS Registry Number: 17620-06-3

General Statement: Radioactive, *t*_{1/2} 3.2 min.

Source/Synthesis: Prod. from ²⁰³Tl (¹²C,5n), ²⁰⁵Tl (¹²C,7n), or ¹⁹⁷Au (¹⁶O,3n)

Other Data: *I* = +6; *μ* = +4.4 *μ*_N. Decays by α emission to ²⁰⁶At, or orbital electron capture to ²¹⁰Rn

>>Variant: Francium 211

CAS Registry Number: 17620-07-4

General Statement: Radioactive, *t*_{1/2} 3.10 min.

Source/Synthesis: Prod. from ²⁰³Tl (¹²C,4n), ²⁰⁵Tl (¹²C,6n), ¹⁹⁷Au (¹⁸O,4n), or ¹⁹⁷Au (¹⁶O,2n)

Other Data: *I* = - 9/2 ; *μ* = +4.0 *μ*_N. Decays by α emission to ²⁰⁷At, or orbital electron capture to ²¹¹Rn

>>Variant: Francium 212

CAS Registry Number: 15756-97-5

General Statement: Radioactive, *t*_{1/2} 20 min.

Source/Synthesis: Prod. from ²⁰⁵Tl (¹²C,5n), or by proton bombardment of Th

Other Data: *I* = +5; *μ* = +4.6 *μ*_N. Decays by α emission (43%) to ²⁰⁸At, or orbital electron capture (57%) to ²¹²Rn

>>Variant: Francium 221

CAS Registry Number: 15756-41-9

General Statement: Radioactive, *t*_{1/2} 4.8 min.

Source/Synthesis: Descendant of ²²⁹Th

Other Data: *I* = - 5/2 ; *μ* = +1.58 *μ*_N. Decays by α emission to ²¹⁷At

>>Variant: Francium 222

CAS Registry Number: 36840-25-2

General Statement: Radioactive, *t*_{1/2} 14.3 min.

Source/Synthesis: Prod. by proton bombardment of Th

Other Data: *I* = -2; *μ* = 0.63 *μ*_N. Decays by β⁽⁻⁾ emission (>99%) to ²²²Ra

>>Variant: Francium 223

CAS Registry Number: 15756-98-6

General Statement: Radioactive, *t*_{1/2} 21.8 min. Traces occur naturally

Other Data: *I* = + 3/2 ; *μ* = +1.17 *μ*_N. Decays by β⁽⁻⁾ emission to ²²³Ra

>>Variant: Francium 224

CAS Registry Number: 18696-67-8

General Statement: Radioactive, *t*_{1/2} 2.7 min.

Source/Synthesis: Prod. by proton bombardment of Th. Daughter of ²²⁴Rn

Other Data: *I* = -1; *μ* = +0.40 *μ*_N. Decays by β⁽⁻⁾ emission to ²²⁴Ra