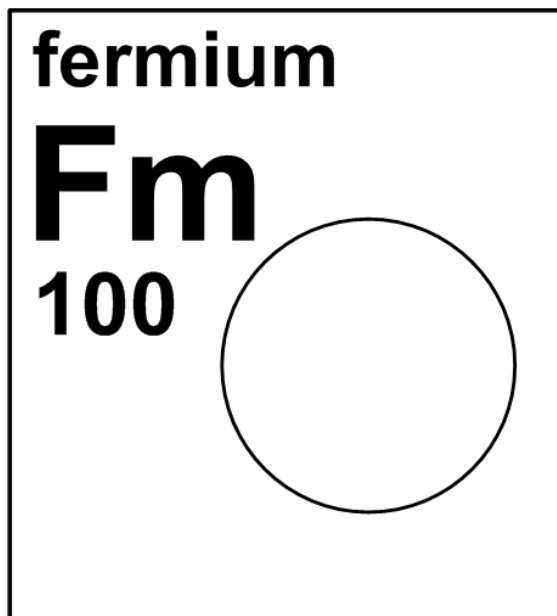




4.100 fermium



Stable isotope	Relative atomic mass	Mole fraction
(none)		

Half-life of radioactive isotope

Less than 1 hour 
 Between 1 hour and 1 year 

²⁴¹ Fm	²⁴² Fm	²⁴³ Fm	²⁴⁴ Fm	²⁴⁵ Fm	²⁴⁶ Fm	²⁴⁷ Fm	²⁴⁸ Fm	²⁴⁹ Fm	²⁵⁰ Fm
²⁵¹ Fm	²⁵² Fm	²⁵³ Fm	²⁵⁴ Fm	²⁵⁵ Fm	²⁵⁶ Fm	²⁵⁷ Fm	²⁵⁸ Fm	²⁵⁹ Fm	²⁶⁰ Fm

Fermium does not occur naturally in the Earth's crust. It was first identified in December 1952 by American scientists from the Argonne National Laboratory near Chicago, Illinois, the Los Alamos National Laboratory in Los Alamos, New Mexico, and The University of California Laboratory in Berkeley, California in the debris of thermonuclear weapons (Figure 4.100.1). The **element** was named for Enrico Fermi, who built the first man-made nuclear reactor. ²⁵⁵Fm (with a **half-life** of 20 hours) was the first fermium **isotope** identified. Fermium is the heaviest element that can be formed by **neutron** bombardment of lighter elements and is thus the heaviest element that can be synthesized in macroscopic quantities [629, 630].

Fermium is of interest in particle physics research, but it has no commercial applications. ²⁵³Fm was one of the **decay products** used to confirm synthesis of copernicium in a particle accelerator experiment [631].



Fig. 4.100.1: The first successful hydrogen bomb test (Ivy-Mike) in 1952 produced ^{255}Fm , which was the first fermium isotope detected. [632]