

Weapons improvements via tritium and lithium-6

1) <https://www.britannica.com/technology/nuclear-weapon/The-first-hydrogen-bombs#ref1080681>, - **and** -
2) <https://www.bing.com/videos/search?q=beta+decay&&view=detail&mid=A3107AC82BAD647B3FAFA3107AC82BAD647B3FAF&&FORM=VDRVRV>
and 3) <https://www.nytimes.com/1988/10/09/us/tritium-s-role-in-powering-a-bomb.html>,

Tritium, a radioactive form of hydrogen, is a vital and perishable ingredient of nuclear bombs. Unlike plutonium, which lasts for tens of thousands of years, tritium transforms itself into a form of helium at a rate of about 5.5 percent a year. **Therefore, it must be replaced periodically.** A few grams of tritium inside a bomb help to produce a more efficient chain reaction - the same destructive energy from less fuel. This translates into smaller, lighter warheads. **Tritium gas** is made in reactors when a neutron bombards the nucleus of lithium-6, which consists of three protons and three neutrons. When the neutron is added, the lithium atom throws off two neutrons and two protons, the nucleus of a helium atom. The remaining proton and two neutrons become tritium.

Atoms splitting in a chain reaction give bombs explosive force. When this fission in the trigger is fueled by uranium or plutonium alone, the number of neutrons freed to continue the chain is doubled with each generation of the reaction. Although the explosive force is reached in microseconds, the chain reaction can sometimes result in an explosion before the fuel is spent.

The more effective trigger begins with a fission bomb explosion that ignites a tritium-deuterium fusion reaction. The fusion, in turn, emits stable helium and a higher-energy neutron that strikes other nuclei sending off more neutrons each time. This greatly increases the rate of the reaction and allows the same amount of fuel to produce more energy more quickly.

A weapon used solid lithium deuteride rather than liquid deuterium and produced a yield of 15 megatons, **1,000 times as large as** the [Hiroshima](#) bomb. Here the principal thermonuclear reaction was the fusion of deuterium and [tritium](#). The tritium was produced in the weapon itself by neutron bombardment of the lithium-6 isotope in the course of the fusion reaction. It is thought the corrosive gas is now small part of a weapon.

HN Comment: The multiplication of force to produce EMP via tritium gas does not seem to appear in any of the Terry Chapman equations.