

## ANTIMATTER

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Antimatter is a special kind of matter, which consists of antiparticles.

In the early 1950s. physics experienced a real shock. It was connected with the revelation that for each particle there is a an antiparticle - a similar particle, but with an opposite charge.

Antimatter has no color as electromagnetic radiation, the frequency of which we call the colour, in the case of antiparticles are neutral and colourless. To find antimatter scientists use special detectors.

Handling antimatter is extremely difficult as any contact with it creates an explosion.

Until today, scientists were only able to create tiny portions of antihydrogen in a giant accelerator. In pure vacuum such anti-atoms can exist forever.

In this case, how is it possible to handle such a sensitive substance? The only way is to pre-ionize the antimatter, transforming it into ion gas, and then securely locking it in the, so called, "magnetic bottle", where the magnetic field will not let it touch the walls.

The effectiveness of the atomic bomb, despite its terrible power, is only about 1%. Only a tiny fraction of the mass of uranium transfers into pure energy. But the bomb of antimatter, if it were possible to create one, would transform 100% of its mass into energy and therefore would be much more effective than the atomic bomb.

In fact nothing - except, of course, the prohibitively high price - prevents us from creating atoms of heavier antielements. In 2004, a few trillionth grams of antimatter cost \$ 20 million.

How can we use antimatter? We can build an antimatter engine. Antimatter is also perfect fuel. Because the reaction of 1 kilogram of matter and 1 kg of antimatter creates as much energy as during an explosion of 42 megatons of plastic explosives.

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