

For Your Information

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 - *Date:* Sun, 18 Sep 2005 19:05:35 GMT
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Chris.

Thorium can be made into a fissile material by neutron irradiation. This new element, I think it is Uranium 233 can be used as a fissile material.

Plutonium in a pile rather than in a bomb can be used to supply thermal neutrons if a moderator is used. Plutonium is created from Neutron irradiation in a Uranium Pile by thermal neutrons using a graphite moderator.

Uranium 238 (non fissile) > Plutonium 239 (fissile) by neutron absorption. Thorium 232 (non Fissile) > Uranium 233 (fissile) by neutron absorption. So India's invention is possible and probably true. Naturally occurring Uranium contains isotopes 235 and 238 in significant quantities. The U isotope 235 will break into two approximately equal parts if struck by a fast neutron and by itself with a significant half life. When this happens about three fast neutrons are released. These three fast neutrons will collide with another U235 or be lost to the system It appears that isotopes with even numbers are more stable than odd numbers, this has to do with pairing of fermions.

If pure U 235 is in a chunk there will be a spontaneous disintegration rate. If the neutrons on average escape before hitting a U235 then there will be no explosion.

If the U235 is in the form of a sphere there will be a mean free path of any neutron starting somewhere inside and if that mean free path is smaller than the radius of the sphere there will be an uncontrolled chain reaction building up exponentially in about 100 mSec until all the U235 has been split. The energy released is the difference in atomic mass of the U235 and the sum of the two atomic masses created. This may be found from tables, but the split is not the same each time and there is a spread of products.

The mass of this little sphere of Uranium 235 that is just enough to detonate is called the critical mass and the mass of a slightly smaller amount that is stable is called a sub-critical mass. There is also a critical density since the chance of a neutron hitting a U235 is greater if the atoms are closer together, so one way of causing a nuclear explosion is to compress the subcritical mass to above the critical density at the mass.

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This is done by surrounding the small subcritical sphere of U 235 with a spherical shell of TNT high explosive and detonating it.

The chance of a neutron causing a disintegration in a U235 nucleus is called the cross section and you find this by measurement. Get some pure U235 foil and a uranium pile and measure the spontaneous disintegration rate then bang a beam of fast neutrons at it at a known rate and measure the number of extra disintegrations. This gives you the rate per neutron. If you know the atomic density and the weight and density of the foil, you can then calculate the mean free path and then the critical mass.

This can be done for plutonium 239 and Uranium 233.

Once you have made the measurements and you have a source of your fissile material the calculation is a five line triviality (I have forgotten how exactly) and you can then manufacture these beastly atom bombs.

Some manufacturers use a hollow sphere of fissile material foil as the explosion is more reliable and you can use slightly more material.

A hydrogen bomb is one of those nasty things with a lithium hydride shell around it. This will ignite with the heat of the atom bomb and enhance the explosive effect.

Some even nastier bombs have a U238 shell round that, this is transformed into Plutonium 239 which then undergoes fission and further enhances the explosion.

An even nastier nasty bomb has cobalt oxide packed around that and this becomes cobalt -60 by neutron irradiation and will kill everything in the area (100 KM) for 3 thousand years or so.

There is no upper limit to hydrogen bombs and yields of over 500 Mtonnes are destabilising to the ecology of the planet, a bomb of 2000 MT would probably put an end to life on earth.

This is all public knowledge and I do not know any figures except that the critical mass of Uranium 235 is about 5 g. A bomb the size of a hand grenade could devastate a city the size of London and a briefcase sized bomb could wipe out the south of England.

500 MT bomb is like a small gas canister about 3 feet high and two feet in diameter. This will do very serious damage to the world ecosystem.

I understand there are many such weapons in existence as they are comparatively cheap.

Let us use our democratic powers to stop their production and destroy any in existence.

If you are a bomb technician find a way of disabling your weapon. Remove

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the fissile material and replace it by inactive lead.

Be vigilant, it takes a large scale industrial plant to make the bomb material and it will probably be noisy. The ultra centrifuges are big, cylindrical chunks of heavy machinery and use electricity, but the bomb making itself is small scale cottage industry. The materials are mostly alpha emitters so only slightly radioactive. Fluorine and argon are involved in large quantities.

Use every means to remove this threat to humanities existence.

Chris.

"Euclid Uranium" <euclid@xxxxxxxxxxxxxxxx> wrote in message
news:K05OL88U38611.8471527778@xxxxxxxxxxxxxxxx
> "Chris" <nimbo@(no-spam)ukonline.co.uk> wrote:
>
>> The calculation is simple work out the atomic wieght of uranium (235) and
>> the atomic weight of barium (137.33) and Strontium 87.62 Sum (224.95). So
>> if
>> Uranium 92 splits into barium 56 and Strontium 38 (sum 94) (two electrons
>> emitted)
>> So for one mole of Uranium 235 grams $10.05/1000 \times (3 \text{ E } 8)^2 (mc^2)$ 9.45
>> E
>> 14 Joules so 10 g will give 4 E 13 Joules. That is quite a lot of energy.
>> My house uses 2 KW each day that is 2 E 3 W over 12 hours this is 8.64 E
>> 6
>> Joules so I would get enough energy from 10 g of uranium for 1268
>
Nonesense Deleted

• *Follow-Ups:*

◆ ***Re: For Your Information***

◇ *From:* daestrom

◆ ***Re: For Your Information***

◇ *From:* Tim Keating

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