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Home science laboratory. DIY Windell Oskay (Author),
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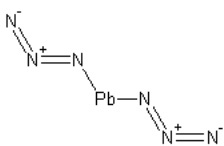
Lead azide

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It is classified as an initiating explosive. For home conditions, it is one of the best initiating explosives. It is difficult to ignite - the hardest of all MWIs - only when heated to 320°C - but a resistance wire or fuse will easily reach this temperature. The detonation velocity at a density of 4.6 g/cm³ is 5300 m/s. Poorly soluble in water. It is one of the strongest initiating explosives, 10mg stimulates PETN. Its main disadvantage is the price. Unfortunately, sodium azide is very expensive, which discourages many people from obtaining this compound, and luckily NaN₃ is becoming cheaper :). The other disadvantages are the toxicity of NaN₃(comparable to cyanides), and Pb(NO₃)₂, low sensitivity to flame and glass

to the formation of larger crystals, which negatively affects sensitivity. Let me just mention that PbN₆ itself is not toxic. A small amount of lead azide burns a characteristic azide crackle, which indicates the high speed of acceleration of this MWI. The synthesis is trivial and very fast. It is recommended to use dextrin when precipitating PbN₆ reduce the size of the crystals and therefore increase the stability, but then you have to use very dangerous drying methods to get rid of water from PbN₆. Without it he is very t flammable - misfires may occur. That's why I came up with a very interesting method that does not require the use of dextrin and at the same time produces a fine, stable precipitate.

Receiving

Reagents

- Sodium azide NaN₃
- Lead nitrate Pb(NO₃)₂
- Sodium carbonate Na₂CO₃
- Distilled water
- Methanol/denatured alcohol

Where to get it?

Sodium azide is expensive, but recently it has become increasingly cheaper, as is HClO₄, we will rather buy it only by mail order. It is not worth doing it yourself, although there are many interesting ones besides, with 1 g of NaN₃ you can make a whole lot of primers. You can buy lead nitrate or make it yourself. I recommend the first option because using lead nitrate does not contain lead origin, we may produce other azides that drastically increase the sensitivity. It is also useful to slightly increase the pH of the solution with Na₂CO₃, because H it is very poisonous (something like HCN). Its fumes make your eyes red (like a rabbit's). You should not use tap water because various impurities precipitate and the problem will fail. We get methanol in the chemical industry. Unfortunately, there are strict restrictions on it, but we can replace it with denatured alcohol.

Equipment

- Beaker
- Filter or filter
- Tripod
- Glass funnel
- Glass baguette
- Libra

The synthesis is trivial. First, we weigh 1g of NaN₃ and 3g Pb(NO₃)₂.

We prepare approximately 15% solutions of NaN_3 and $\text{Pb}(\text{NO}_3)_2$ in water. Add a little Na to the NaN_3 solution²WHAT³. Then we heat the solutions in a water bath to approximately 70°C. Mix
A snow-white precipitate of PbN_6 immediately precipitates.

We add some alcohol to it, I use methanol because it is pure, almost waterless and cheap ;), in order to decant the solution faster. Of course you can use denatured alcohol, and methanol is better.

Then the solution is filtered and washed with methanol. Then we gently squeeze the filter between the wipes. Gently pour the pre-dried lead azide onto the black film and moisten it with methanol.

Security

Remember that we work with very toxic reagents! Azides are as poisonous as cyanides! Even though we do not use dextrin in this recipe, we get a fine and static precipitate, we will use even more concentrated solutions and higher temperature. This is part of PbN_6 it can even pass through the filter because it will form a colloid :). Such azide will easily ignite with a fuse, but using kindling. A good amateur primer should consist of 300mg PETN and 30mg PbN_6 , using PbN_6 alone is stupid. I also do not recommend producing larger amounts of a 5g, because spontaneous detonation may occur. Lead nitrate cannot be contaminated even to a minimal extent with copper salts, because it produces copper azide, which is sensitive! Also remember about the pH during precipitation, it should be alkaline. Let me remind you that it is MWI, and it is also sensitive to friction, so you have to be careful. Methanol is very toxic, even small amounts of a few grams cause blindness.

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