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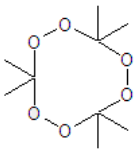
CTAP



TCAP (TriCycloAcetonePeroxide - a completely incorrect name, because it would indicate the presence of three rings in the compound, and there is only one - although the most accepted one in Poland), CTAP (Cyclo(TriAcetonetriPeroxide) - the correct name used abroad), CTATP (Cyclo(TriAcetoneTriPeroxide)) , acetone peroxide Peroxide (AP), TATP (TriAcetoneTriPeroxide - name used in the media), peroxyacetone, acetone hydrogen explosive.

Chemical properties

TCAP is formed in the nucleophilic addition reaction, in the reaction of hydrogen peroxide (perhydrol) and 2-propanone (acetone) in the presence of hydrogen ions (usually supplied by sulfur or salt) at a temperature below 12°C.

The formula of a close relative of CTAP - a compound called CDAP (cyclic dimeric acetone peroxide) or DADP (diacetonediperoxide) is shown in the right image. CDAP is a compound much more sensitive to impact and friction than CTAP. It is also more volatile and has less explosive power. DCAP is formed when the reaction mixture is above 12°C. That's why it's so important to maintain the right temperature.

Physical properties

TCAP has the form of colorless crystals with a melting point of approximately 30*C. This temperature is slightly lower than its excitation temperature, which is why it is sometimes melted (plastif by terrorists, an operation that often ends in the death of the person performing it (and that's a good thing). It is very sparingly soluble in water, partially soluble in acetone and other organic solvents . It sublimates very easily, which makes it difficult to store: e.g., you should not store Tacp in jars or any other containers with e.g. a threaded lid, because CTAP may sublimate onto the thread of the jar and detonate when opening due to friction. storing acetone peroxide by placing it in a photographic film cup covered with foil. An even better way is to refrain from producing it.

Explosive properties

CTAP is classified as MWI, i.e. initiating explosives. It goes from burning to detonation very easily in a closed container, i.e. it is an MWI with short momentum. Na p burns characteristically, creating a ball of fire. THIS MAN CANNOT BASICALLY BE ANESTHETIC TO MECHANICAL STIMULUS (water anesthetizes him very little, almost not at all). CTAP detonation P are as follows: for a density of 0.92 g/cm3 - 3750 m/s, 1.12 g/cm3 - 5300 m/s. It is worth noting that a small amount of TCAP poured loose burns without detonation.

Receiving

ATTENTION!!! CTAP is an explosive that is very sensitive to all types of impacts, friction and electrostatic discharges. It is not recommended to use it for detonating primers at all, but its synthesis should be treated as an experiment and a curiosity. There REALLY are many other better and not much more expensive or complicated MWIs that are many times safer to use than CTAP. Apart from the fact that it is a cheap material and the substrates for its synthesis are easily available, this compound has no advantages.

Reagents

- Acetone $(CH_3)_2WHAT$
- H hydrogen peroxide$_2ABOUT_2$
- H sulfuric acid$_2S.O_4$or hydrochloric HCl
- Sodium bicarbonate $NaHCO_3$
- Distilled water

- Table salt (sodium chloride) NaCl

Where to get it?
You can get acetone in a construction or paint store, and of course in a chemical store. Hydrogen peroxide is known as perhydrol - it is a 30% solution in water. M can be purchased in chemical and construction stores (Castorama, OBI). You can also use regular 3% hydrogen peroxide from the pharmacy, but you need to multiply the required amount by 10. Sulfuric acid in a chemical or as an electrolyte at a gas station. Sodium bicarbonate can be found in grocery stores as soda or baking soda. You can get distilled water from petrol or chemical stores. Please remember that the reagents used for the synthesis should be at least "pure". The purity of the reagents in this synthesis has a direct impact on the stability of the obtained compound, i.e. on its safety.

Equipment

- Two 250 ml baguette
- beakers
- Thermometer
- Litmus papers
- Funnel
- Filters
- Measuring cylinder
- 10ml syringe
- A cup after the movie
- Ice from the freezer
- Bowl or pot
- Refrigerator

When starting the synthesis, we measure 100 ml of acetone and 80 ml of perhydrol in a graduated cylinder (it does not have to be very precise). Pour both liquids into a 250 ml beaker and mix. The temperature in the beaker increases and we put it in the refrigerator to cool down. Meanwhile, prepare ice, a container for the cooling bath and salt. Then we prepare the dilute acid with 12 ml of concentrated sulfuric acid and 24 ml of water in a small beaker. If we use electrolyte, we simply take 36 ml. If we have concentrated hydrochloric acid, we dilute it with a volume of water. We remove the beaker from the refrigerator and place it in a cooling bath. When the temperature drops below 5°C, we add a few ml of the acid prepared in the solution to the syringe/dropper. Add the acid to the jar drop by drop, checking the temperature and stirring with a thermometer. Adding the acid takes about 15 minutes. After adding the acid, let the temperature drop to 0°C. Place the beaker in the refrigerator for 24 to 48 hours. To speed up the reaction, you can place it there on a magnetic stirrer. After this time, a white precipitate will accumulate at the bottom. The obtained CTAP is filtered, deacidified with a few percent solution of baking soda until neutral, washed several times with distilled water and dried on blotting paper or a clean newspaper. In this way, we prepare 60 g of CTAP minimally contaminated with sensitive DCAP. We divide it into portions of a maximum of 5 g and store it with water in separate cups after the film. Under no circumstances should we keep all the cups in one place, near flammable objects, especially other explosive ones.

Security
CTAP is extremely sensitive to basically everything. Before any operations with it, you must touch the unpainted part of the radiator or the pin in the electrical socket (to avoid it). It must not be dried in the sun. The best way to guarantee safety is not to synthesize this compound. A much better MWI is, for example, Tetr from the same reagents (plus tin chloride). Its preparationHERE.

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Corrections and synthesis
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Sources:
- http://www.geocities.com/thugsta785/APStoichiometry.html
- Experiences of colleagues on the Internet