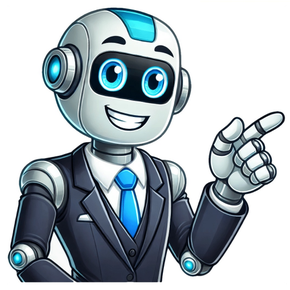
I'm human



# What happens when acetone reacts with hydroxylamine

Oximes are organic compounds belonging to the class of imines, with a general formula of R1R2C=N O H, where R1 is the side-chain and R2 is hydrogen. They form through the reaction of hydroxylamine with aldehydes or ketones, resulting in the elimination of water molecules. Oximes generally exhibit a mixture of geometric isomers and can be dehydrated to form nitriles. The oxime compound is used as a skinning agent due to its ability to reduce toxicity. Additionally, it serves as a de-oxidant or corrosion inhibitor in the synthesis of other organic compounds like cobalt and ketones. An oxime is a functional group composed of a hydroxyl group bonded to the nitrogen atom of an imine. This group can be derived from aldehydes (aldoximes) or ketones (ketoximes). Oximes are formed through the reaction of aldehydes or ketones with hydroxylamine. Hydroxylamine, on the other hand, is a polar compound that dissolves in water and has various applications. It serves as a reducing agent in photography, synthetic and analytical chemistry, and is used to purify aldehydes and ketones. Hydroxylamine also acts as an antioxidant for fatty acids and soaps, and as a dehairing agent for hides. In the presence of lithium aluminum hydride or catalytic hydrogenation, oximes can be reduced to primary amines. However, hydroxylamine is moderately toxic to humans, animals, and even plants, although its toxicity only becomes apparent at high concentrations. The Beckmann rearrangement of several ketones and aldehydes was performed in good yields using zinc oxide without additional organic solvents. Additionally, a phosphine-mediated reductive acylation of oximes was used to synthesize enamides from ketones with excellent purity. A variety of oximes can be synthesized from alcohols, alkyl halides, or alkyl sulfonates without the need for external oxidants. Researchers have also developed a method to produce nitrones and oximes in good yields by reacting N-alkylhydroxylamines and aqueous hydroxylamine with monosubstituted allenes. This process is supported by DFT calculations, which suggest a concerted, five-membered Cope-type hydroamination mechanism. Additionally, a metal-free method for the aerobic oxidation of primary benzylamines to oximes has been discovered, utilizing N,N′,N″-trihydroxyisocyanuric acid as a catalyst and water as a solvent. This approach is not only efficient but also environmentally friendly, using air as an oxidant and tolerating a wide range of substrates. Other notable reactions include the use of IBX to generate imines from secondary amines, oxidative aromatization of nitrogen heterocycles, and cleavage of dithianes. Moreover, a convenient method for synthesizing optically active aldoximes and nitriles from chiral nitroalkanes has been developed. Recent advances have also enabled the photoisomerization of aryl oximes to produce Z isomers via visible-light-mediated energy transfer catalysis, which can be followed by a Beckmann rearrangement to migrate alkyl groups preferentially over aryl groups.

What happens when acetaldehyde reacts with hydroxylamine.  How does acetone reacts with hydroxylamine.  What happens when acetone reacts with hydrazine.  How acetone reacts with hydroxylamine.  What happens when acetone is treated with hydroxylamine.