

## CHEMISTRY

### Premium Edit

Acetamidines are starting materials for ~~many heterocycles such as imidazoles, pyrimidines, and triazines entities~~, which in turn can be used to synthesize biochemically active ~~that find usage for~~ compounds ~~of biochemical activity manufacture~~. However, the free acetamide base ~~is~~ ~~hygroscopic, absorbs moisture from the atmosphere~~, decomposes at elevated temperatures, and is converted into acetamidinium carbonate ~~even upon short-term exposure when to stored in contact~~ ~~with air for short while~~ at room temperature. ~~Hence, so~~ acetamidinium salts are preferred alternatives to acetamides.

Many synthetic routes ~~for to~~ acetamidinium salts have been reviewed. Among the various acetamidinium salts available, acetamidinium chloride is the most commonly used ~~salt of acetamide~~, and ~~it is usually prepared by mixing acetonitrile with an alcohol in the presence of hydrogen chloride, followed by the addition of ammonia to obtain the desired salt intermediate imine ether after the mixing of acetonitrile and alcohol in the presence of hydrogen chloride~~. The main disadvantage of acetamidinium chloride is ~~that its release of the free base is released in methanol by the use of a methoxide~~, producing sodium chloride, which ~~cannot be completely removed because of its is partial solubility partly soluble~~ in methanol. This conversion is unfavourable ~~for in~~ certain syntheses, ~~and the complete removal is tedious~~.

Source: [Synthesis and properties of acetamidinium salts](#) by Jalový Zdeněk, Matyáš Robert, Ottis Jan, Růžička Aleš, Šimůnek Petr, Polášek Miroslav, used under [CC-BY 4.0](#)

**Comment [A1]:** I have included some common heterocycles here so that readers get a clearer idea of the variety of compounds that can be prepared from acetamides.

**Comment [A2]:** "Hygroscopic" is a more appropriate technical term that refers to the ability of a substance to absorb moisture from the atmosphere.

**Comment [A3]:** I have started a new paragraph here to indicate the change in topic.

**Comment [A4]:** If you are referring to chlorides specifically, please change this term accordingly and add the necessary citations. If you make that change, then the sentence will need to be moved to come after the next sentence. That is, the paragraph should first mention that acetamidinium chloride is the most commonly used, before talking about its synthetic routes. If you require assistance in making that revision, do let me know.

**Comment [A5]:** I have reordered the sequence of processes used in the synthesis for better clarity. I hope this change is correct. Also, you seem to be referencing the Pinner reaction. Consider specifying it here, if so.