CHEMISTRY

Advanced Edit

Acetamidines are the starting materials of many compounds~~entities,~~ that in turn can be used to prepare ~~find usage for~~ compounds with~~of~~ biochemical activity ~~manufacture~~. However, the free acetamidine base absorbs moisture from the atmosphere, decomposes at elevated temperatures, and is converted into acetamidinium carbonate when stored in contact with air for a short ~~while~~ period of time at room temperature. Hence,~~So~~ acetamidinium salts are preferred alternatives to acetamidines. Many synthetic routes to~~for~~ acetamidinium salts have been reviewed. Among the various acetamidinium salts available, acetamidinium chloride is the most commonly used salt of acetamidine~~;, and~~ it is prepared by mixing acetonitrile with an alcohol in the presence of hydrogen chloride, followed by the addition of ammonia to the 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 when the salt is dissolved ~~in methanol~~ in the presence of a methoxide, producing sodium chloride, which is partly soluble in methanol. This conversion is unfavourable in certain syntheses, ~~and~~ because the complete removal of sodium chloride is tedious.

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 acetamidine 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 acetamidines.

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 acetamidine.~~~~, 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~~.

Comment [A1]: If you are referring to chlorides specifically, please change this term accordingly.

Comment [A2]: I have reordered the sequence of processes used in the synthesis for better clarity. I hope the change is correct.

Comment [A3]: I have included some common heterocycles here so that readers get a clearer idea of the variety of compounds that can be prepared from acetamidines.

Comment [A4]: "Hygroscopic" is a more appropriate technical term that refers to the ability of a substance to absorb moisture from the atmosphere.

Comment [A5]: I have started a new paragraph here to indicate the change in topic.

Comment [A6]: 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 [A7]: 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.