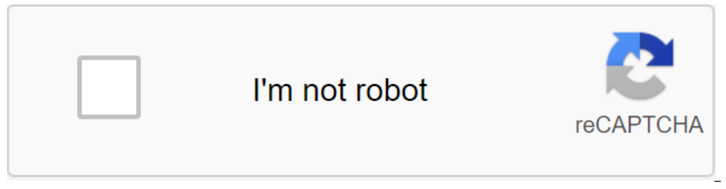

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Preparation of acetanilide from aniline and acetic acid using zn dust

Acetanilide is a white organic solid compound used mainly in organic synthesis. N-phenyacetamide, acetanylide and acetanyl are other names of this compound. It has been used in the past to treat fever and headaches and has been known as Antifebrin by its brand. Purpose: Prepare an organic compound of acetanilide from aniline, glacial acetic acid/acetic anhydride and zinc dust. Theory: Acetanilide is cooked from aniline when it reacts with acetic anhydride/glacial acetic acid in the presence of zinc dust. A mixture of anilin, glacial acetic acid, acetic anhydride and zinc dust reflux in the state of angidus, and then poured the mixture into the ice water to get acetic anhydride sediment. The raw sediment of aceidride is redistallized to obtain pure crystals of acetanilid. The chemical reaction is below. The zinc is used to prevent anilin oxidation during a chemical reaction. Acetanilide is medicinally important and is used as febriphus. Acetanylide feces also be prepared by acetylizing aniline with acetic anhydride in the presence of concentrated aldic acid. Dissolve the anilin in the salt acid and add the acetic anhydride to mix well. Pour the mixture onto sodium acetate in water. Acetanylide is formed, which can be separated and re-crystallized by ethyl alcohol. Other Names - N-Phenylacetamide, N-Phenylethanamide, Acetanyl Materials Required: Anilin Glacial Acetic Acid Acetic Acid Acetic Acid Acetic Anhydride zinc Dust Distilled Water Round Lower Flask Glass Pipetka Reflux Capaqueor Funnel Stirrer Bunsensurner Filter Electronic Balance Device Device: Procedure: Wash all devices with a distilled water Take a round lower flask, which add 10 ml of anilin and 20 ml of vinegar anhydride and glacial mixture of acetic acid and add zinc dust. Fix the reflux capacitor with a round lower flask. Heat the mixture gently for 15-20 minutes in an oil bath. Pour the hot mixture into a glass containing ice water with constant stirring. Stir the mixture vigorously to allow hydrolysis to excess vinegar anhydride. Once all the acetanilide is deposited collect and filtered into the funnel the buchner. The resulting sediment represents if a raw sample of acetanilide is called. In order to get clean crystal crystals crystallization must be carried out. Crystallization: Transfer the raw sample to a glass containing 20 ml of water and heat gently. If the solution is painted, add a small amount of activated carbon. Filter a hot solution with a funnel. Cool the mixture for 30 minutes, so that the white shiny crystals of acetanilide separates. Filter the crystals, wash them with water and dry them in folds of filter paper. Observations: The color of crystals Crystals Form Crystals Plate Shape Floating Point 114oC Results and Discussion: Exit of acetanilid is _____gm. Precautions: Do not inhale acetic anhydride fumes. Anhydride. to conduct experiments in a smoking chamber or near a window. Use a water capacitor to reflucs the reaction mixture. Dry the crystals of acetanilide before you find the weight and its melting point Continue to visit BYJU'S to learn more about the chemistry of the class 12 CBSE practical. Acetic anhydride and acetylchlorid are two acetylating agents. The zinc is added to prevent anilin oxidation during the reaction. Reduces color impurities present in the solution. A mixture of concentrated acids, such as nitric acid and sulphuric acid, is called a filathy mixture. The name IUPAC for acetanylide N-phenylacetamide acetanylide is used in the synthesis of penicillin and in other pharmaceuticals. It is also used as an antipyretic agent meaning a lower temperature agent. BACKGROUND: Acetanylide is synthesized from aniline, acetylating it with acetetic anhydride in the presence of glacial acetic acid. Anilin or phenylamine is the main amine and the main in nature. Acetic anhydride, anhydride acetic acid, acts here as a source of the group of azil. Anilin reacts with acetetic anhydride to form acetanylide nucleophilic substitution reaction and a reaction called acetylation. In this reaction, anilin acts as a nucleophilic and acylic (CH3CO-) group of acetic anhydride acts as an electrophile. Here, the hydrogen atom of the NH2 group is replaced by an akila group.1 The goal is to produce acetanylide from anilin. Reaction: Mechanism: Use: This is an antipyretic agent. REQUIREMENTS Chemicals: Acetic Acid / Anhydride Blend - 20 ml Anilin - 10 ml Device: Conical flask - 250 ml Reflux watercapacity set Buchner funnel Measuring cylinder Paper Filter PROCEDURE Add 20 ml blend of vinegar angi Glacial acetic acid (equal volumes) up to 10 ml (10.3 g) Fit the water condenser reflux into the flask and gently cook the mixture for 10 minutes. Acetanilid quickly crystallizes. Filter the outlet by pumping and wash the raw acetanilide well with water. Recrystallise from about 60 ml mixture of one volume of acetic acid and two volumes of water: filter colorless crystals at the pump, wash again thoroughly with water, drain and dry. Note: In addition, raw acetanilide may be recrystallised from boiling water, but in this case a much larger volume (about 300 ml) solvent will be needed. Calculation: Here the limiting reagent is aniline; hence, the yield should be calculated from the amount taken. Molecular Formula Anilin - C6H7N1 Molecular Formula Acetanilide - C8H9O1N1 Molecular Weight anilin - 93 g/mole Molecular Weight acetanilide - 135 g/mole Theoretical output: 1.g aniline form 135 g acetanilide therefore, 10.3 g (10 ml) (X) g acethanild X (135 d) 14.95 g Theoretical yield - 14.95 g Practical yield - ————- Yield (Practical yield)/ (Theoretical yield) - 100 COMM Acetanilid was synthesized, and interest yield was set .....% (M.p. 113); yield, 10 g.). REFERENCES Practical Organic Chemistry by Frederick George Mann and Bernard Charles Saunders Published by Longan Inc., Fourth Edition; Page 108. Acetanilide is an important organic compound that is widely used in the pharmaceutical industry. It is an odorless, white, hard or flaky compound. The method of its preparation is used to inform students with the synthesis of organic compounds in chemical laboratories. It is prepared by acetylation of aniline. The goal is to make acetanylide from aniline, glacial acetic acid (acettic anhydride) and zinc dust. Theory - When heated anilin reacts with acetetic anhydride in the presence of zinc dust and glacial acetyanide and gives acetanilide. Thus, the formed acetanilide is re-crystalized to get pure crystals. The purpose of using zinc dust is to prevent the oxidation of anilin during the reaction. The chemical reaction involved in the preparation of acetanylide is given below-Acetanilid also known as N-phenylacetamide, N-phenylethanamide and methanol. Requirements - Round lower flask 100 ml, wire gauze, tripod stand, burner, clamp, reflux capacitor, mixer, filter paper, glass, pipette, electronic balance, iron stand, measuring cylinder, anilin (20 ml), acetic anhydride and glacial vinegar acid mixture (40 ml), zinc dust. Procedure - Carefully rinse the entire device with distilled water before the experiment. Add 20 ml of anilin and 40 ml mixture of acetic anhydride and glacial acetic acid to the round lower flask of 100 ml. Continue stirring the reaction mixture. Now add the zinc dust to the flask. Fix the water reflux capacitor on a round lower flask containing a reaction mixture using clamps and iron to stand. Now fix the round bottom flask on the burner to heat the reaction mixture with a tripod stand, wire gauze and sand bath. Keep the mixture to heat for 30-40 minutes. Now pour the reactionary mixture of the round bottom flask into a glass containing ice water. Continue to stir the mixture. Once all acetanilild is deposited, filter the reaction mixture. Thus, the resulting crystals of acetanilide are raw or not clean, so the process of redistrification should be carried out. For recrystallization - Dissolve raw acetanylide in 50 ml of distilled water with a glass and stirrer. Add a little ethanol as well. Now heat this solution until it is clear and continue to stir it. After that you get almost as much as this - the image will be added soon. Now cool the solution and filter it out. Let the crystals dry. You will get crystals almost looking like this - the image will be added soon. If you want to get more pure crystals crystals then you can re-crystallize twice. Identify the melting point of the resulting crystals. Observation Table - Color of Crystals White Odorless Crystals Odorless Appearance Flaky Melting Point 115 CResult - Weight of acetanilid crystals derived _____g. Its melting point is 115 degrees Celsius. Precautions - Aniline is a carcinogenic compound, so it should be treated very carefully. Do not inhale the vapors of vinegar anhydride. Always dry the crystals before taking their weight and melting points to avoid error due to moisture. Continue to stir the reaction mixture during the experiment. Vigorous heating is necessary when the mixture is added to the ice water. It was an experiment to prepare acetanilides from aniline, if you want to know the procedures, theories of other experiments such as titrations, etc., and then register yourself on Vedantu or download Vedantu training app for class 6-10, IIT JEE and NEET. Nit. preparation of acetanilide from aniline and acetic acid using zn dust mechanism

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