

The scenario

Subject	Properties of organic compounds: hydrocarbons
Length	3,06 min.
Main objectives	Learning some properties of organic compounds
Detailed objectives	Observation of changes occurring during the reaction Learning about the properties of chlorinated hydrocarbons Learning about exchange reactions in solutions of inorganic salts
Structure and description of experiments:	
Introduction	Description: Unlike inorganic salts, organic compounds do not hydrolyze into ions. 1-chlorobutane does not react with silver nitrate(V) and does not form a precipitate, as is the case with a solution of table salt (sodium chloride). In a test tube containing sodium chloride, an ion exchange reaction takes place, and an insoluble white precipitate of silver chloride is formed. The chlorine atom in an organic compound is not detached in an aqueous environment.
Main subject	Description: Understanding the reactivity of organic compounds
Experiment	<p>Equipment: test tubes, Pasteur pipettes, spatula, water wash bottle.</p> <p>Reagents: 1-chlorobutane, silver nitrate(V) aqueous solution, sodium chloride aqueous solution</p> <p>Precautions: work with gloves and protective glasses!</p> <p>Description: Using a Pasteur pipette add about 1 ml of 1-chlorobutane and sodium chloride solution to two test tubes placed in a rack. Then add a few drops of AgNO₃ solution to both test tubes with 1-chlorobutane and sodium chloride solution.</p> <p>After completing the exercise, pour the solutions into the containers indicated by the teacher.</p> <p>Questions:</p> <ol style="list-style-type: none"> 1. Write down your observations of the transformations taking place in the test tubes 2. Why did the reaction not take place in the first test tube? <p>Conclusions: After mixing a solution of silver nitrate(V) with a solution containing chloride ions, a white-gray precipitate is released, darkening in the air. This is a characteristic reaction for detecting chloride ions. Organic compounds such as 1-chlorobutane do not dissociate and do not produce such ions, so the reaction does not take place in test tube No. 1.</p> <p>Level: Secondary School</p>