

### The scenario

<b>Subject</b>	<b>Separation operations/Adsorption</b>
<b>Length</b>	4:09
<b>Main objectives</b>	To show how adsorption process works
<b>Detailed objectives</b>	
<b>Structure and description of experiments:</b>	
<b>1. Introduction</b>	Description: The motivation to carry out this experiment is to show how the adsorption process works.
<b>2. Main subject</b>	Description: Why sometimes a body floats on the surface and other times it sinks. What does the magnitude of the buoyant force depend on? Investigating the possibility of floating bodies with a greater density than water on the surface of the liquid.
<b>Part 1</b>	
<b>Experiment 1 (0:42)</b>	<p><b>(0:40), Tools:</b> Activated carbon, crystal violet colorant, funnel, and filter paper</p> <p><b>Description:</b> In two beakers add water and a few drops of violet colorant.</p> <p>Then, in a beaker pour one of the solutions with the colorant. Then add activated charcoal and mix generously.</p> <p>Subsequently, with a funnel and filter paper, filter the mixture. As the mixture is filtered, the activated carbon is retained on the filter paper, and the water falls into the beaker. The water is transparent once it is filtered.</p> <p><b>Questions:</b> Why is the colorant not visible in the water once it is filtered? – activated carbon adsorption acts as an accumulation of a liquid onto the surface of the activated carbon and inert solid material.</p> <p>What is the adsorption process of activated carbon and colorant? – during the filtration through activated carbon, colorant adhere to the surface of these carbon granules or become trapped in the small pores of the activated carbon.</p> <p><b>Conclusions:</b> The adsorption is a method for removing dissolved organic substances.</p>
<b>3. Summary, evaluation and notes</b>	<b>Application:</b> Adsorption is a process used to remove diverse, dissolved contaminants from water, air, and gaseous streams.



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	<b>Level:</b> secondary school
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Co-funded by the  
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