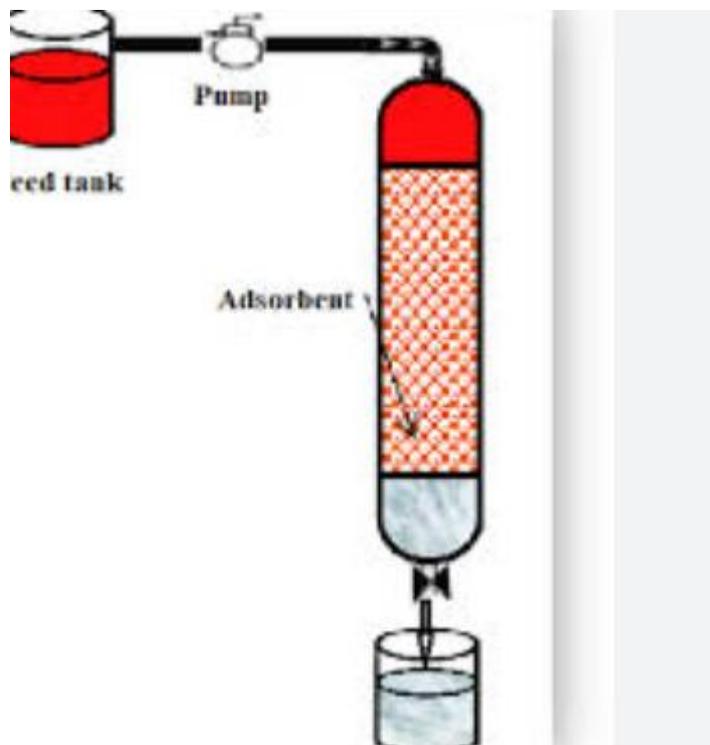


## Adsorption Studies

The phenomenon of adsorption is defined as the accumulation of molecules, atoms or ions from a fluid, which could be either a gas or liquid, onto the surface of a solid material. The concept is different from absorption in that the latter is based on the bulk penetration of material into the surface.

Adsorption studies investigate the process where solute molecules from a liquid or gas phase adhere to the surface of a solid material, known as the adsorbent, to remove or concentrate components from a stream. These studies often use batch techniques to examine parameters like contact time, adsorbent dosage, initial concentration and pH, analyzing the rate and equilibrium of the adsorption process. Results are modeled using isotherm and kinetic models to understand the process's efficiency and underlying mechanisms, aiding in the design of adsorption systems for applications such as water purification and heavy metal removal.



Adsorption (or adsorption studies) is an advanced serologic testing method used to separate warm autoantibodies from serum in order to appropriately identify underlying alloantibodies.

It is based on the accumulation of concentration at a surface and is the consequence of interactive forces of physical attractions between the porous solids surface and components molecules removed from the bulk phase. Thus, adsorption technology is considered a promising means to purify and separate gases and liquids.

Adsorption is present in many natural, physical, biological and chemical systems and is widely used in industrial applications such as heterogeneous catalysts, activated charcoal, capturing and using waste heat to provide cold water for air conditioning and other process requirements (adsorption chillers).

