



PROCESS STEPS

Four process steps, one goal: clean products.

Solids separation – the first step in filtration



The solids separation, meaning the separation of the suspension into solids and liquid, is the first process step of a filtration. The separation is carried out by a cake-forming filtration using a filter medium.

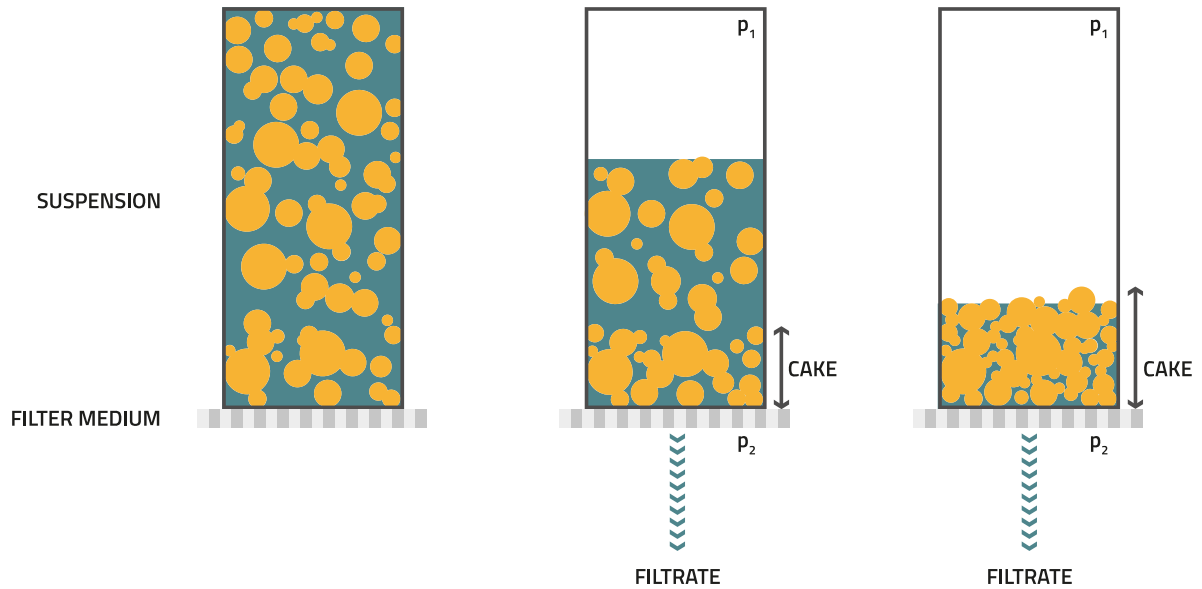
Driving force is a pressure difference p . While the liquid phase (mother liquor) flows through the filter medium and drains off as filtrate, the solid is retained by the filter medium and forms a filter cake. As few particles as possible should get into the filtrate. Depending on the process, either the mother liquor or the filter cake is the valuable product to be recovered.

The success of solids separation depends on product parameters, process parameters as well as apparatus parameters. Essential influencing factors are the properties of the particles, such as particle size, particle shape and particle distribution, the solids concentration of the suspension, the available driving pressure gradient p and the filter medium.

The finer the particles, the higher the flow resistance of the formed filter cake and the higher the required pressure differences p to separate the solids. With very fine particles, the available pressure difference p of vacuum filters of approx. 0.8 bar is often insufficient to overcome the flow resistance. For such suspensions, continuous pressure filters are used.

Whether a product can be processed on continuous rotary filters depends essentially on the formed filter cake being removable from the filter cloth. Filter cakes with special properties also require appropriate methods for cake removal.





FILTRATION PRESSURE DIFFERENCE: $\Delta p = p_1 - p_2$ $p_1 > p_2$

