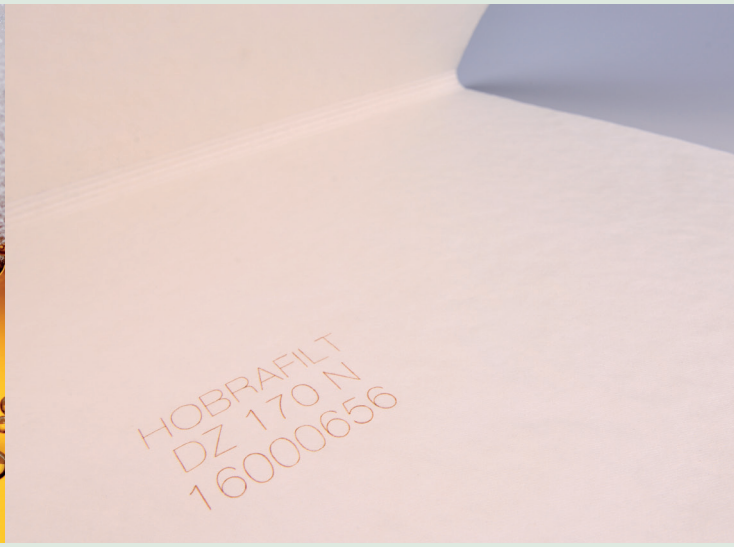
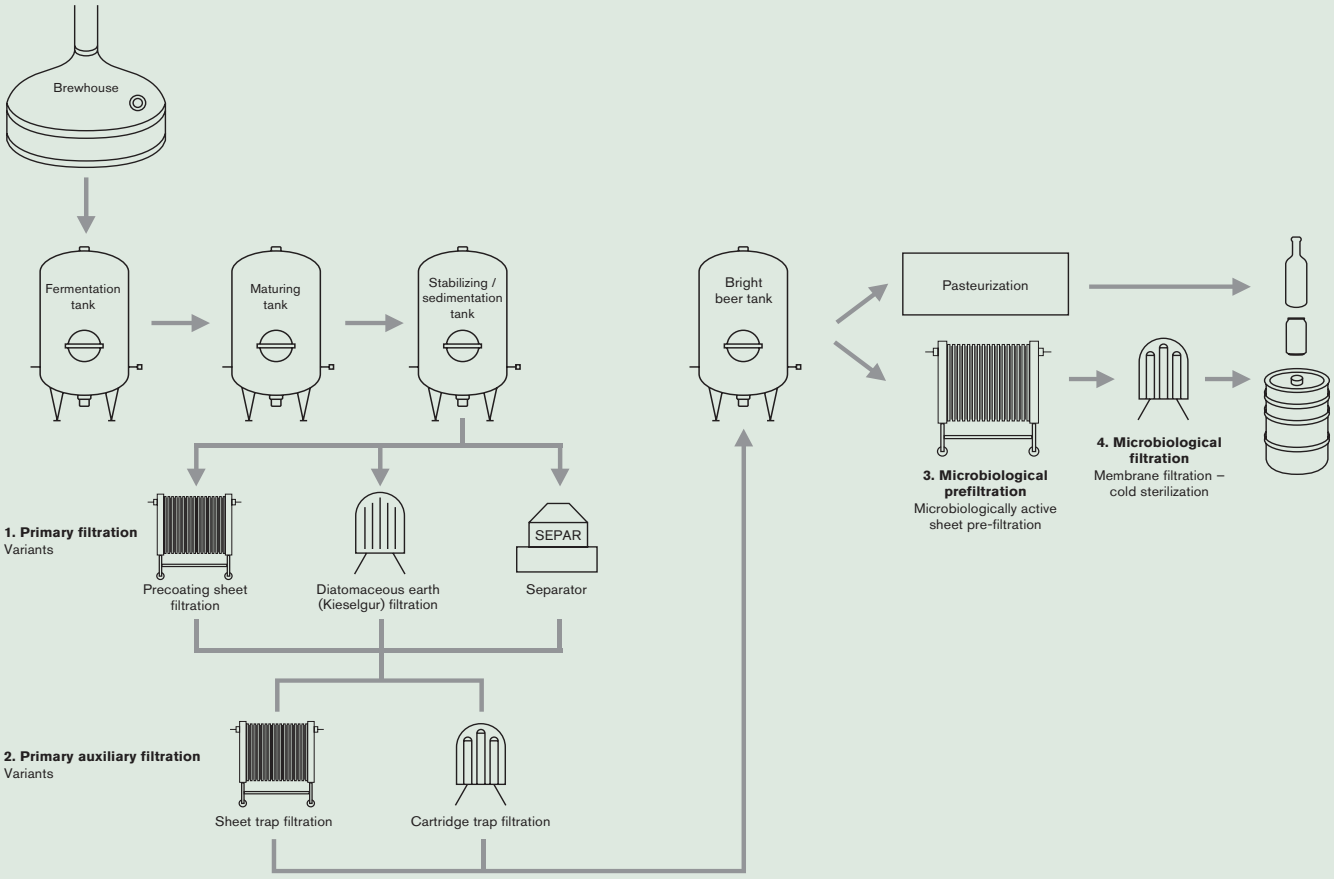
BEER FILTRATION / HOBRA advises

Filtration is an integral part of the brewing process. Whatever the brewery scale is, if the final product is to be clear, bright and above all stable, it is necessary to use the right and gentle filtration. Another integral part of filtration is careful sanitization. Thanks to its over 80-year tradition, HOBRA offers products suitable for basically all beer filtration stages and the plant sanitization.

Although the brewing industry is evolving and the processes and procedures adapt to new requirements, we can define the typical brewing process. Below you can find a simplified brewing process diagram focusing on stages where filtration or separation is applied.





Available Hobra products for specific filtration phases:

1. Primary filtration – diatomaceous earth (Kieselgur) filtration – HOBRA-diatomaceous earth (Kieselgur), Hobracol sheet filter, Hobrafilt DZ 170 N precoating filtersheet
2. Primary auxiliary filtration – Trap filtration – Candefilt – HPF filter cartridges, Candecol cartridge filter, Hobracol sheet filter, Hobrafilt S 60 N – S 20 N filtersheets
3. Microbiological pre-filtration – Hobracol sheet filter, Hobrafilt ST 7 N – ST 3 N filtersheets
4. Final microbiological filtration and cold stabilization – Candefilt filter cartridges and membranes (HMP, HMVX), Candecol cartridge filter
5. Water filtration – Candefilt filter cartridges and membranes (HPN, HPA, HSV, HMS)
6. Sanitization – Hobra-CIP sanitizing station, Candefilt filter cartridges (HMS, HSV)

Primary Filtration

Filtration with the use of Hobra diatomaceous earth (Kieselgur) is a well-tried, proven primary beer filtration technology, both with Hobracol precoating sheet filters and cartridge or disc diatomaceous earth (Kieselgur) filters. Good capacity performance and high efficiency at low operating costs are important factors. The aim is to eliminate yeasts and turbidity inducing compounds – protein precipitates, polyphenols and hop resins, from unfiltered beer after lagering. The initial beer turbidity corresponds to 60-120 EBC (corresponds to NTU) and the yeast count is around 0.5–3 mil per ml. We recommend you to use Hobrafilt® DZ 170 N precoating filter sheet in the double design, size ranging from 400x820 mm up to 1205x2420 mm.

Primary Auxiliary Filtration – Trap Filtration

It is the final beer purification after diatomaceous earth filtration, as almost all types of diatomaceous earth filters suffer from partial leakage of the diatomaceous earth. This diatomaceous earth must be removed from beer prior to fine sterile filtration. If cellulose powder is used instead of diatomaceous earth, the problem of filter medium´s leaking from filter persists. Candecol cartridge filters (housings) are suitable for efficient trap filtration. Among Candefilt® filter cartridges, suitable types include polypropylene pleated cartridges (HPF, HPN) or the glass fibre cartridge (HSV). In this case, the retention of the cartridges ranges between 10 – 1 micron, with respect to the specific requirement and beer condition.

An alternative of the efficient trap filtration is the use of Hobracol sheet filter and Hobrafilt S 60 N – S 10 N filtersheets (nominal retention rate of 6 – 0.8 microns).

Microbiological Pre-Filtration and Final Microbiological Beer Filtration – Cold Sterilization

Final microbiologically effective filtration before bottling removes yeasts and bacteria from beer and thus ensures its microbiological stability and durability. Compared to the frequently used shock pasteurization, this is a gentler beer stabilizing process, with better cost effectiveness and considerably better effect on the resulting beer taste. To achieve maximum cost effectiveness, the two-stage filtration is recommended.

1. Sterile microbiologically effective pre-filtration using Hobracol sheet filter on Hobrafilt ST 7 N – ST 3 N depth filtersheets (according to the type of beer). Filtersheets are supplied both in the double design and as single sheets, up to the maximum size of 1215x2425 mm, and have the nominal retention rate of 0.4 – 0.2 microns (a less efficient alternative consists in pre-filtration carried out on Candefilt HPN or HPF filter cartridges with the retention rate of 3 – 0.5 microns).

2. The second phase is the filtration through membrane (PES) cartridges Candefilt HMP or HMVX with the absolute retention rate of 0.8 – 0.45 microns. Its advantage is the possibility to test the membrane for integrity using the integrity test. This filtration step is carried out on Candecol cartridge filters or Candecol columns.

Filtration of Product Water and Technological Water

Water filtration is a no less important factor in the beer production, both as concerns product water and technological water for all manufacturing processes. The quality of input water varies and it is therefore necessary to filter the input water. We offer the two-stage filtration on Candecol cartridge filters or Candecol columns. The first stage is the pre-filtration of input water and removal of mechanical impurities, rust etc. using Candefilt HPN filter cartridges (alternatively HPA, HSV, HMS) with the retention rate starting from 2.5 – 1 micron. The second stage is the final microbiological filtration on Candefilt HMS membrane cartridges with the retention rate of 0.2 micron.

Sanitization

The sanitization of the entire manufacturing plant and individual apparatuses used for brewing is an important part of the whole beer production process. We offer the mobile Hobra-CIP sanitizing station in various versions depending on the requirement or direct on-site assessment.

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RELIABLE FILTRATION