

Evaporator



Tubular falling film evaporator system for the production of concentrated fruit juices and aroma essences

- Single pass design for maximal product yields
- Energy efficient multi stage system
- Integrated, independently controlled pasteurizer
- Sophisticated liquid distribution for long cleaning intervals
- Optimized CIP with high performance spray nozzles



Application

The Bucher Unipektin falling vacuum film evaporators are designed for the production of high quality juice concentrates and aroma essences. They typically combine the process steps pasteurization, aroma stripping and concentration in one system. Short processing time, low heat impact and sophisticated hygienic design predestinate the evaporators for the concentration of all kinds of fruit juices, i.e. from apples, pears, berries, grapes and stone fruits. Due to the uniquely designed liquid distributors they can handle juices with high suspended solids contents and with tartrate.

Design and functionality

The evaporators are typically multi staged systems. The energy efficiency can further be improved by implementing mechanical or thermal vapour recompressors. In the evaporators that feed liquid is preheated with concentrated product and

condensed vapours in various heat exchangers for maximum energy efficiency. Before entering the first evaporation column the product can be pasteurized with controlled temperature for microbiological and physicochemical stabilization. The liquid is evenly distributed in the column head to ensure optimum wetting of the inner wall surfaces of all evaporation tubes. The tubes are heated from the outside with steam or recompressed vapours. The developing product vapours push the liquid in a thin layer alongside the tube walls towards the separation chamber at the bottom of the column. Due to the applied pressure gradient the preconcentrated product can be further concentrated in the next effects with the vapours from the previous effect. Optionally the first vapours are fed to an aroma column where they are condensed and refined to yield a concentrated aroma essence.

Technical data

Type	Vacuum tubular falling film evaporator
Number of effects	1 to 7
Evaporation capacity	10 to 110 t/h
Vapour recompression	mechanical or thermal (optional)
Aroma recovery	multi plate rectification column (optional)

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Products and Services

Process technology for fruit and vegetable processing to juices, concentrates and puree production, for brewing solutions, for filtration, for milk powder production, for the vacuum drying of liquid and solid products, for freeze drying of coffee, tea, fruits, vegetable, etc. Technology for municipal and industrial sludge dewatering and drinking water filtration

Products

Fruit reception lines, mills, mash heaters, hydraulic presses, membrane filtration equipment, cold block equipment, adsorber, ion exchanger, evaporators and aroma plants, pasteurizers, CIP systems, vacuum and freeze drying cabinets and belt dryer, zeolite adsorber, complete processing lines

Services

Process development and project engineering; assembly and commissioning; technical support; original spare parts; inspection; service contracts; retrofits; training; service and maintenance; NetService