



Liquid Coffee Concentrate

Freeze concentration
of Coffee Extract

Application

Innovation in GEA freeze concentration technology has resulted in a new generation low cost IceCon® systems.

All kinds of coffee extracts regardless the type of beans, roasting- or extraction method can be processed with this technology.

Why liquid coffee concentrate?

- Reduction of transportation cost, packaging cost and storage cost
- New product development
- New market opportunities - export
- High quality concentrate as ingredient, for canned coffee or for dispenser systems
- Opportunities in institutional markets

Features

- Total retention of original product characteristics
- Quality in = quality out
- Simple, flexible and efficient operation
- No intermediate cleaning needed
- Low production cost

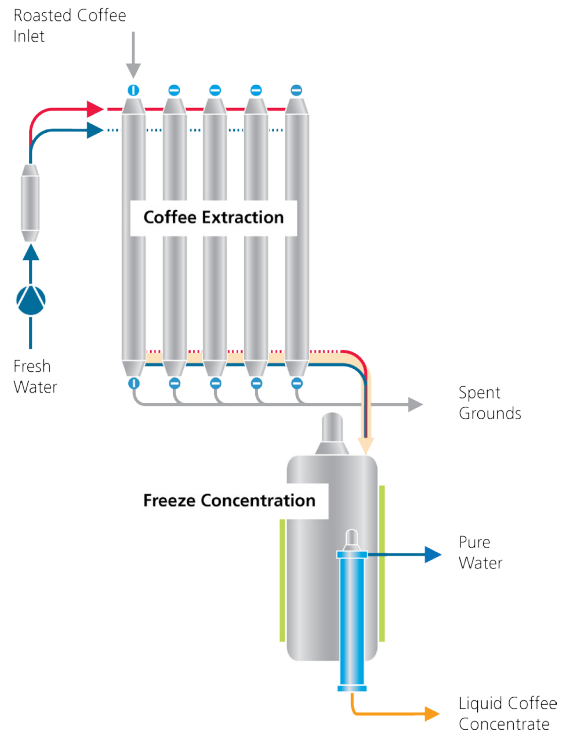
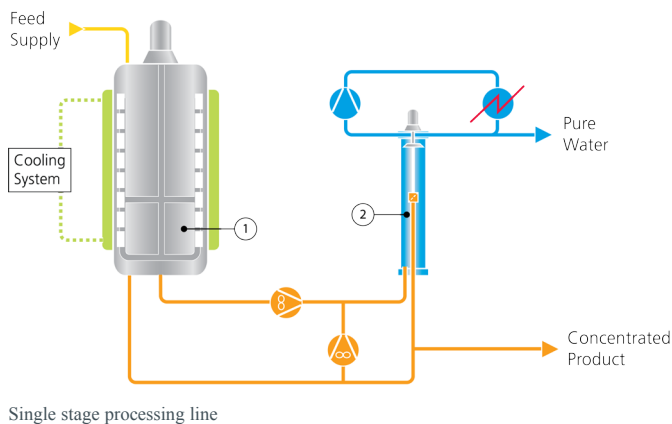
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Freeze Concentration of Coffee Extract

Liquid Coffee Extract

Split or dual extraction provides a high quality aromatic extract ideal for further processing in a freeze concentration system. The second draw can be concentrated using conventional methods or optionally freeze concentrated (similar to full extraction).

Freeze concentration provides an economical coffee concentrate that makes it feasible to use top quality coffee extract for products like “canned coffee” and coffee ingredients.



Process description

Freeze concentration is the removal of pure water in the form of ice crystals at sub-zero temperatures. IceCon® is the latest innovation of freeze concentration design. The diagram shows the complete process in its simplest form. This single stage process consists of one crystallizer and one wash column. The crystallizer is a vessel with a cooling jacket. The inner wall of the vessel is scraped. The outer wall is cooled by a circulating refrigerant. Ice production and crystal growth take place inside the crystallizer. By creating residence time ice crystals grow, creating an optimal crystal size distribution for efficient separation. In the wash column, the concentrated liquid is separated efficiently from the ice crystals. A compressed ice crystal bed is washed with melted ice to remove all traces of concentrated liquid. Freeze concentration ensures that all original product characteristics remain in the concentrate.

On-site demonstration of this technology is possible in various configurations using GEA pilot plants. For more information regarding this technology and your specific configuration requirements, please contact us or get in touch with your local GEA contact on gea.com via the Application Food - Coffee & Tea.

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