

Selective filtration of high-quality spirits



Eaton's BECO® SELECT™ A depth filter sheets preserve premium ingredients in fine spirits and deliver consistent color, taste and aroma to distillers.

Eaton helps distillers of fine spirits preserve premium ingredients and deliver consistent color, taste and aroma while virtually eliminating haze-causing substances with BECO SELECT A depth filter sheets. This selective filtration is possible because of the high-quality raw materials used, ideal pore structure of the sheets, and low calcium, magnesium and iron ion content.

The product range consists of the fine **BECO SELECT A 20** depth filter sheet for filtration prior to bottling with high haze reduction and the medium-fine **BECO SELECT A 40** depth filter sheet for clarification and reduction of initial haze, as well as the high absorption of fusel oils.

Depth filter sheets from the BECO CPS range can be used additionally as a pre-filter for spirits with very high initial haze. The following features set these depth filter sheets apart from others:

- Preservation of value-added ingredients while selectively filtering out undesirable compounds (high adsorption capacity for long-chain fatty acid esters, minimum adsorption of short-chain beneficial acid esters)
- Low calcium and magnesium ion content
- High fusel and essential oil absorbing capacity
- Reliable separation of fine colloidal and coarsely dispersed haze-causing substances
- High dirt-holding capacity for separating crystalline precipitation (calcium haze, magnesium haze and others), metal haze and carbon particles
- Minimum color adsorption
- High overall performance

Application options

- Whisky
- Vodka
- Fruit brandies (Williams, stone fruit brandies, soft fruit brandies, etc.)
- Brandy
- Cognac
- Armagnac
- Gin/Genever
- Grappa, Marc
- Pisco
- Fruit and herbal liquors
- Rum
- Fruit, herbal and walnut spirits
- Calvados

Further details can be found in the Technical Information documents 1 A 2.1.3.2 and 1 A 2.1.6.3.14



Fatty acid esters

Particular importance is placed on preserving flavor during spirits filtration. Fatty acid esters play a significant role in the flavor of spirits. Short-chain fatty acid esters are highly desirable for aroma and taste. However, medium and long-chain fatty acid esters are haze-inducing, and long-chain fatty acid esters have been shown to be a prime cause of off-odors and off-tastes.

Therefore, the goal of filtration is the selective separation of haze producing long-chain fatty acid esters.

Figures 1 and 2 show examples of the reduction of fatty acid esters in various types of spirits after filtration with BECO SELECT A depth filter sheets. Both filter types only reduce short chain fatty acid esters to a minimal extent.

Quality-reducing medium and long-chain fatty acid esters are separated significantly.

Haze can be reduced at higher filtration temperatures therefore helping to promote preserving the flavor (Fig. 3) while reducing energy costs.

Calcium and magnesium ions

To avoid the possibility of crystalline precipitation and deposit, the release of calcium and magnesium ions should be minimized. The ultra-pure raw materials used in the unique production process of BECO SELECT A depth filter sheets guarantee the lowest possible ion release into spirits (Figs. 4 and 5).

Fatty acid esters in pomaceous based spirit during filtration with BECO SELECT A 40 depth filter sheets

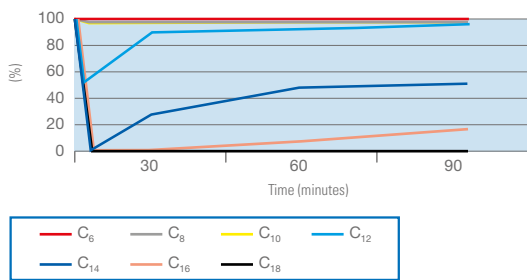


Figure 1

Fractional calcium extraction in 40% ethanol

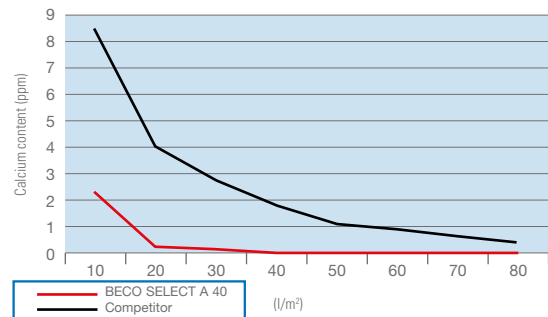


Figure 4

Fatty acid ester in whisky after filtration with BECO SELECT A 20 depth filter sheets

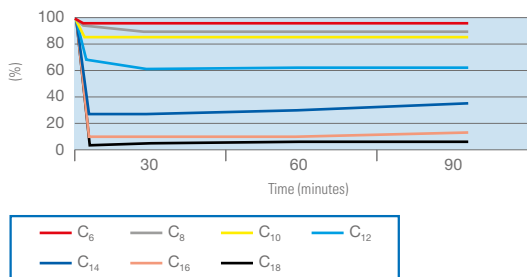


Figure 2

Fractional magnesium extraction in 40% ethanol

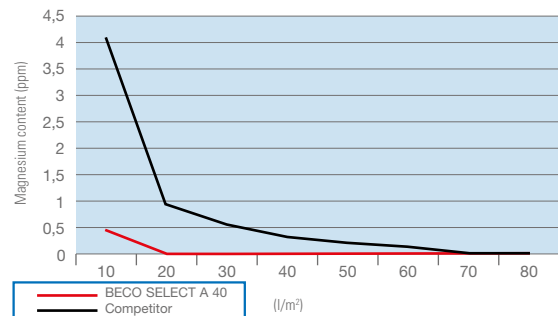


Figure 5

Haze reduction Williams filtration with BECO SELECT A 20 depth filter sheets (filtration temperature: 6.1 °C)

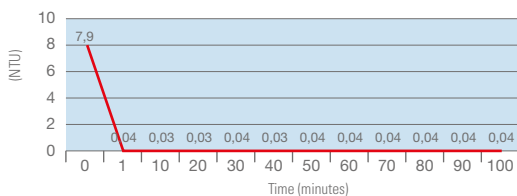


Figure 3

Use in enclosed filtration systems

As well as flat-sheet format, the BECO SELECT A depth filter sheets are available as BECODISC® stacked disc cartridges for use in BECO INTEGRA® DISC stacked disc cartridge housings.

The filtration of expensive spirits with enclosed BECO INTEGRA DISC stacked disc cartridge housings offers users the following advantages.

- No drip losses
- By using inert gas (e.g., nitrogen), almost all product can be recovered from the filter housings
- BECO INTEGRA DISC stacked disc cartridge housings take up little space
- Easy filter handling when assembling BECO INTEGRA DISC stacked disc cartridge housings
- Long service life and therefore highly economical

Further details can be found in the Technical Information documents 1 A 2.5.5.13 and 1 A 2.5.5.12



BECO COMPACT™ PLATE plate and frame filter with BECO SELECT A depth filter sheets



BECO INTEGRA DISC stacked disc cartridge housing with BECODISC stacked disc cartridges



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