

Customized Membrane Solutions for Filtration of Wine



 **CUT**
Membrane Technology

www.cut-membrane.com
www.wine-filtration.com

Filtration processes - a central subject in wine production



Wine production is a science of its own and fills entire libraries. The subject is even taught at universities and colleges. It is therefore hardly surprising that not only the work in the vineyard is very important, but wine quality also depends quite considerably on the wine production.

With the export of wines to ever more distant countries, the market is calling for stable, clean wines that are free of ingredients that can trigger secondary fermentation (e.g. through the retention of yeasts) or other unintentional processes. But also wine drinkers who prefer youthful fresh and fruity wines place great emphasis on an absolutely clear, brilliant colour without deposit formation on the bottom of the bottle.

Previously wines were filtered with sieves and cloths. Today complex membrane filters are used for the safe removal of trub particles and microorganisms (Clarification filtration).

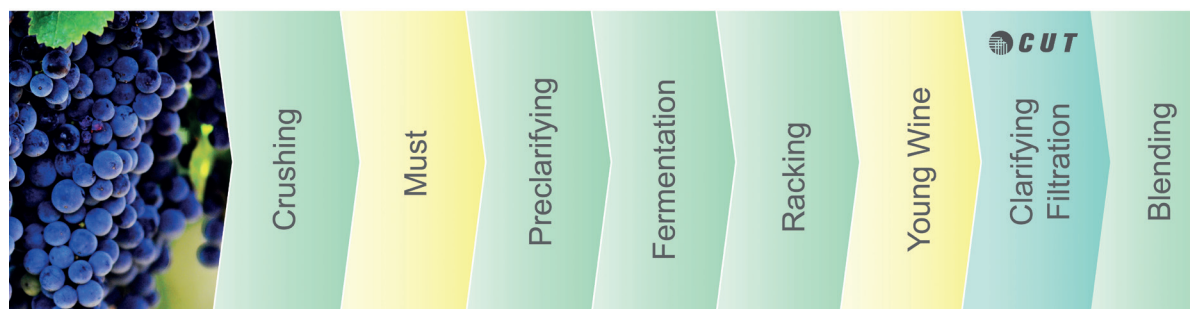
This kind of filtration is called cross flow or tangential flow filtration. In the process, the medium to be filtered is pressed through well-defined pores of a membrane by means of pressure. In this, high overflow velocity in the membrane module prevents clogging of the pores through the fact that the solids present in the medium are kept in circulation. During the filtration process, the concentration of the retained solids within the system rises to what can lead to blocking of the pores

with different membrane models. Blocking also appears through formation of a gel layer. For the filtration of wine, an especially developed hollow fibre module with membranes has been proven to counteract blocking.

Because the finest suspended particles (e.g. phenols, proteins, etc.) are still present even after filtration, in addition the wine is clarified. The oldest means for this are freshly opened egg whites, since these immediately bind these tiny clouded particles and thus prevent post-clouding of the wine occurring. Then remaining turbid materials can be adsorbed by means of alternative expedients such as bentonite, gelatin or activated carbon. The subsequent Clarification filtration removes so-called fining trub, as well as the yeast, thereby preventing secondary fermentation.

Another process step before bottle filling is the pre-filtration of the cutting waste (Preliminary filtration) that is ready for bottling. This filtration step is used for the safe removal of particles and microorganisms that can avoid secondary fermentation and exclude the activities of microorganisms.

These different filtration processes are used not only for the microbiological stability of the wine, but also have a positive influence on the quality and optics of the wine.



C-CUT Capillary modules for wine filtration

With the C-CUT capillary module, a high-quality micro-filtration module was developed especially for wine filtration.

The C-CUT Core hollow fiber series provides a high filtrate performance and a safe use in the application. Through the high chemical, mechanical and thermal resistance, there is the possibility of chemical and mechanical cleaning including backflushings. The necessary material Declarations of Conformity for the food industry (FDA) support the quality assurance in your filtration process.

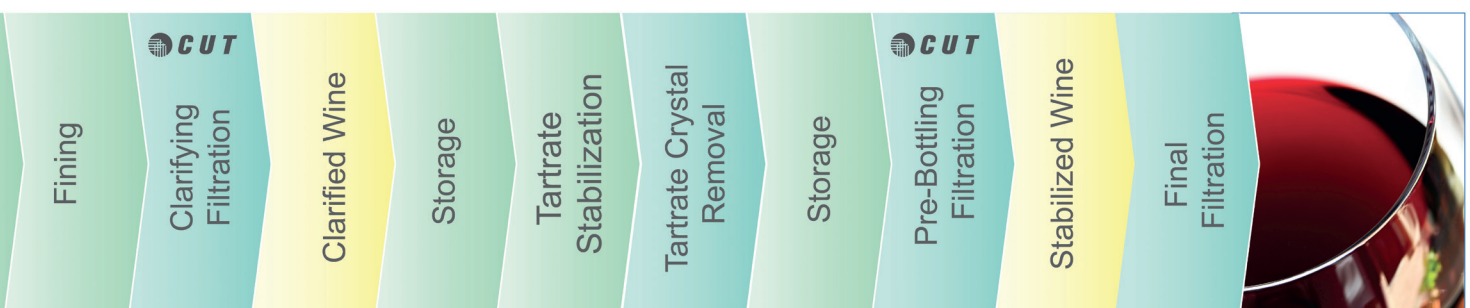
Advantages of the new C-CUT Core module concept



- high filtrate performance
- easy flushing / cleaning
- smooth surfaces
- high-pressure backflush
- high mechanical stability
- high packing density
- no adsorptive effect
- "Made in Germany"

Customer benefits

- Cores are interchangeable for different applications
- no filtration aid required
- simple and safe operation
- maximum preservation of the sensory characteristics of the wine through selection of high quality components
- highest reliability in the filtration
- consistent filtration quality
- small residual amounts due to high concentration
- low space requirements
- long service life
- extremely high filtrate performance results in very short dwell times of the wine in the module with low energy consumption and cleaning time
- worldwide availability



Individuality and a high degree of flexibility

As a highly specialised enterprise with the production location in Erkrath/Germany, CUT Membrane Technology has high expertise in the use and production of membrane modules for wine filtration. CUT supports its customers in the application if requested, and also with cleaning instructions and pilot trials at the CUT facilities or your location on site.



C-CUT wine module as a Core-type with stainless steel housing.



If years of experience are considered for red wine as well as for white wine production, and modules are used that allow a gentle treatment of the wine

and do not stress the wine, then our experience shows that there will be no impairment of flavor or quality of the wine by the use of filtration products.

C-CUT Core Microfiltration Module

C-CUT Core MF 020-015 MI 1 63-1 200*

Technical Data

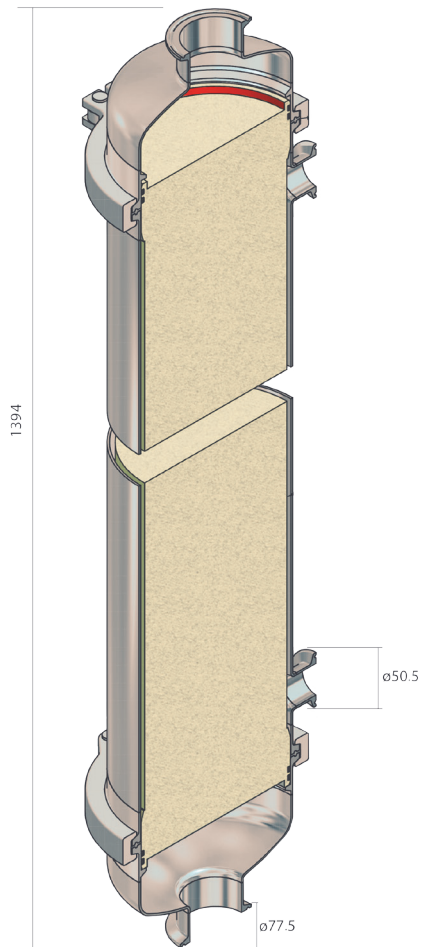
Hollow fiber diameter	[mm]	1.5
Membrane area	[m ²]	13
No. of Membranes		2360
Weight (dry)	[kg]	12
Membrane material ¹		PES
Housing material		Stainless steel
Encapsulation		Polyurethane
Temperature range	[°C]	5.0 - 60.0
pH-Range (Filtration)		2.0 - 12.0
pH-Range (Cleaning)		2.0 - 12.0
Pore size	[µm]	0.2

¹ Data sheet available upon request

Connections and sealings

Feed connector	Tri-Clamp
Permeate connector	Tri-Clamp
Sealing	EPDM

* Alternative membrane areas and module sizes are available upon request.



CUT Membrane Technology was founded in April, 2004 and produces a variety of innovative tubular and hollow fiber based filtration modules at the site in Erkrath near Dusseldorf.

If you are interested in a customized process solution for your specific needs please do not hesitate to contact us.

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