



## Vinegar Infos

### The Fining of Vinegar by FRIBENTON

Vinegar filtration nowadays is usually the task of Frings Crossflow Filters. The reasons are evident: labor saving, minimum loss of vinegar, no filter mass or clouding substances caused by fining which need to be disposed of.

However, many customers still wish to fine some of their vinegars by means of Fribenton, whether to facilitate cross-flow-filtration or to increase the vinegar stability during storage. The colloids and the vinegar bacteria contained in the vinegar both produce certain electric energies which prevent the clouding substances from settling within a reasonable period of time. Fribenton is a kind of bentonite especially treated for the fining of vinegar. It is capable of neutralizing the mentioned electric energies; owing to the large surface of its particles, it binds all clouding substances and settles with them on the bottom of the vat. Fribenton is suitable for fining all kinds of vinegars: wine vinegar, specialty vinegars and alcohol vinegar.

#### Determination of the Necessary Quantity of Fribenton

As the content of colloidal clouding substances in vinegars differs, it is advisable to find out the quantity of Fribenton necessary for good clarification through tests on a small scale. Prepare a small quantity of Fribenton solution in the ratio of 1:20, i.e. 1 g Fribenton per 20 ml of hot water (approx. 70° C), stir well, and allow the solution to stand for 4 to 6 hours while stirring repeatedly until it is homogeneous and free of lumps. Introduce into numbered, slender 200 ml beakers 100 ml each of the vinegar to be fined, and add a precisely measured quantity of Fribenton solution (see table) by means of the pipette (stir or turn the flask while adding the solution, **but do not shake**). The point of the pipette should be down in the liquid to avoid the formation of Fribenton floccules which would diminish or totally negate the effect of Fribenton.

Continue to stir for about 2 minutes.

After a few hours you will be able to judge the fining effect. If you wish to determine the degree of efficiency even further, you may start a second test series (e.g. sample No. 3 is still turbid, while sample No. 4 is clear: second test with 1.5 - 1.6 ... 2.0 ml).

For the fining of a large vinegar volume, use Fribenton in a quantity which is just sufficient for obtaining

Sample Preparation	Addition of solution (ml) (Fribenton 1:20)	Corresponding Kg/1000 l Essig
1	0,5	0,25
2	1,0	0,50
3	1,5	0,75
4	2,0	1,00
5	3,0	1,50
6	4,0	2,00
7	5,0	2,50
8	6,0	3,00

a very clear vinegar.

#### Fining of Large Quantities with Fribenton

Dissolve the determined quantity of Fribenton - ratio 1:20 - in hot water (**never vinegar**) of approx. 70° C, stored in a container with agitator. The mixture should be prepared at least 6 hours before its use, if possible even earlier. Operate the agitator until you obtain a homogeneous, lump-free emulsion.

The fining should be made in a vat as high as possible. A good mixing is decisive for the effect of any clarification. To mix contents of the vat, use the Frings Mixing Group (see prospectus) which can handle even large vats of 15000 to 80000 litres (4000 to 21000 gals) within 10 to 20 minutes. Start the mixing group and allow the Fribenton solution to flow slowly towards the vat bottom through a plastic tube equipped with a funnel. The mixing process should not be interrupted. As soon as all the Fribenton has been used up, go on mixing for 5 to 10 minutes, according to the size of the vat.

The Fribenton slowly settles together with the clouding substances, and the clear vinegar can be drawn off through the valve at the top after one or several days. The longer the storage of the vinegar fined with Fribenton, the smaller the volume of the deposit. As the latter still contains vinegar, it is recommended to filter it through a cloth before cleaning the vat thoroughly.

Jonas-Cahn-Str. 9  
D-53115 BonnPhone: +49 22 8 98 33-0  
Fax: +49 22 8 98 33-195eMail: [marketing@frings.com](mailto:marketing@frings.com)  
Internet: [www.frings.com](http://www.frings.com)

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Vinegars to be fined with Fribenton should have been stored for a while before fining. Alcohol or white vinegar should be stored for 6 days, wine, cider, and other fruit vinegars for at least two weeks. A longer storage of the vinegar reduces the Fribenton quantity which is needed for fining.

#### Important Hints

- We strongly advise against the mixing formerly recommended by means of a pump when the Fribenton suspension is added simultaneously, as usually neither a good mixing nor a fine and timely distribution of the Fribenton suspension within an acceptable period are guaranteed, and the results of clarification therefore remain either unsatisfactory, or the consumption of Fribenton is too high.
- The fining with Fribenton only separates the colloidal clouding substances which are extremely difficult to remove. It does not eliminate excessive metals (iron, copper) or tannin; where considerable quantities of such substances are present; these have to be separated by special measures.
- In rare cases a treatment of fruit vinegars according to a combined fining method may become necessary, as for instance gelatine plus Fribenton, or isinglass plus Fribenton: first the fining with gelatine or isinglass, then, after some hours, the fining with Fribenton.
- Vinegar which needs to be fined shortly after its discharge from the fermenter should be sulfurized 2 days before fining by means of 10 grams of potassium bisulphite (= approx. 5 g SO<sub>2</sub>) per 100 litres of vinegar. The local regulations for the sulfurization of vinegar must be observed.