



# BactiCare

For the suppression of unwanted microbial activity of Gram(+) bacteria (lactic acid bacteria and pediococci) in pitching yeast, on packaging lines, or directly in beer

## Product description

BactiCare is an enzyme produced from egg white protein. The lethal effect is realized by the destruction of the cell wall of the bacteria by decomposition of murein. Murein is the substance which supports the cell walls. BactiCare is a highly purified lysozyme preparation (systematic name: mucopeptide-N-acetylmuramoyl-hydrolase) with a low content of dust. Microbiological activities of Gram-positive bacteria (lactic-acid bacteria and pediococci) are suppressed by the application of BactiCare. Here can with an active substance concentration of min. 150 ppm and an effect reaction time of 5 - 10 days, the following killing rates be achieved:

Lactobacillus brevis:	100 %	Pediococcus inopinatus:	100 %
Lactobacillus brevisimilis:	100 %	Brettanomyces yeasts:	to 25 - 30 %

With an active substance concentration up to 500 ppm the killing rates with Lactobacillus lindneri can also be archived to: 100 % after 15 - 20 days.

Our trials showing that it is possible to preserve the beer against gram + beer spoilage bacteria. We have the best experience with the following volumes and concentration of the BactiCare.

We recommend to prepare a stock solution with BactiCare; 0.15 % per liter, means 1.5 g of the BactiCare powder, diluted in water (cold, can be sterilized before) and practical use is the preparation of the pitching or recovered yeast.

Taste, smell and head retention foam: All our tests showing, that there is no influence on taste and smell and we have no reaction with the high molecular proteins witch are sensitive for the head retention.

### Notice:

When BactiCare stock solution is in the yeast, there is no additional growing of the gram+ bacteria!

Please follow all federal, state, and local rules, and regulations when applying BactiCare.

### Labeling:

Due to the low levels of egg proteins present in the finished product labeling, when used as directed, is not required. USA: in 2007 TTB added lysozyme to the list of enzymatic activity materials authorized for use in wine production (27 CFR 24.246). In 2008 TTB co-included lysozyme as also appropriate for use in the production of beer up to 500 milligrams per liter. EU: Lysozyme is approved since 2012 in beers not receiving pasteurization or sterile filtration (EC reg. 471/2012). \*Alcohol & Tobacco Tax and Trade Bureau, U.S. Dept. of the Treasury.

## Dosage

For use in suppressing bacteria on packaging lines, dilute BactiCare in water to a 500 ppm solution and apply with a spray bottle. 500 ppm is 500 mg/L or 0.5 g/L or about 500 mg/US Quart.

When adding directly to pitching (recovered) yeast as a substitute for acid washing, a 150 ppm concentration is needed. To achieve this we recommend making a 1.5 % stock solution. A 1.5 % stock solution is 15 g BactiCare in 1 L of water or about 15 g of BactiCare in 1 US Quart of water. Add 1 Liter or 1 Quart stock solution per hL of pitching yeast (1.25 US Ounces to the gallon of yeast). Reaction time should be 3 days before re-pitching the yeast. The reaction time can be shortened by increasing the dosage.

When adding to beer to eliminate gram(+) beer spoilage bacteria a 150 ppm concentration is needed. To achieve this, we recommend premixing in water or beer 15 g of BactiCare for every hL of beer to be treated. (17.6 g of BactiCare for every Bbl of beer). Next blend the mixture into the beer. Please insure the blending is homogeneous.

When used as a packing material in centrifuges, canning or bottling equipment to suppress bacteria a 200 ppm concentration is recommended. 200 ppm is 20 g of BactiCare for every hL of water to be used as a packing material. (17.1 g of BactiCare for every Bbl of water).

For barrel aging programs where the flavors of gram(+) bacteria are unwanted the dosage of BactiCare will vary by barrel type, pH, and storage time. Generally the lower the pH and the longer the storage time, the higher the dosage of BactiCare needed. BactiCare, like all enzymes, will denature over time. For most beers 150 - 250 ppm should be sufficient.

## Storage

Prepared stock solution can be stored in the fridge (< 10 °C) for 3 - 4 weeks, without losing activity.

Store BactiCare cool and dry at a temperature below 8 °C. Use up opened packages within two months.



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