

Enzyme Treatment

SIHAZYM™ Lyso



Lysozyme – Extract from Chicken Egg Protein

SIHAZYM Lyso enzyme from Eaton's Begerow Product Line is a natural lysozyme extracted protein from chicken egg for controlling the lactic acid bacteria population. SIHAZYM Lyso enzyme attacks the cell wall of gram-positive bacteria such as *pediococci*, *lactobacilli*, and *oenococci*, causing the cell to burst and die. SIHAZYM Lyso enzyme not attacks gram-negative bacteria such as *acetobacter* (acetic acid bacteria) and yeasts and molds.

Control over the development of lactic acid bacteria is an important step during the different vinification stages. Growth and multiplication of spontaneous flora such as *pediococci* and some *lactobacilli* is particularly critical in red wines with high pH values. For higher pH values, the anti-microbial effect of the added sulfur is significantly lower. Appropriate control of the bacterial flora is therefore more difficult to achieve. Uncontrolled growth of bacteria leads to spontaneous malolactic fermentation (MF), which usually already starts during or towards the end of the alcoholic fermentation. Uncontrolled bacterial growth often results in increased formation of volatile acid and off-flavor. The conditions for the multiplication and the growth of spontaneous bacterial flora is promoted by good availability of sugar and nutrients, which in turn can lead to extreme problems during the re-fermentation of wines that have become stuck.

SIHAZYM Lyso enzyme is a natural alternative to the application of high SO₂ dosages for controlling undesirable lactic acid bacteria. SIHAZYM Lyso enzyme does not attack the yeast cells, i.e. there is no interaction between the cells. The concentration of SIHAZYM Lyso enzyme for suppressing/controlling lactic acid bacteria depends on the pH value.

Application

SIHAZYM Lyso enzyme is preferably diluted with lukewarm tap water as a 10% dilution without strong stirring, which can affect the enzymatic activity.

Timing of the Application and Dosage

For mash applications, Eaton recommends SIHAZYM Lyso enzyme for controlling and suppressing spontaneous bacterial flora.

The aim is to prevent malolactic fermentation during the alcoholic fermentation through spontaneous gram-positive bacteria. SIHAZYM Lyso enzyme can be added directly after settling/clarification or must racking (white wine), or after destemming of red wine grapes.

pH < 3.5: 0.83 – 1.25 lb/gal (10 – 15 g/hl)
pH > 3.5: 1.25 – 1.67 lb/gal (15 – 20 g/hl)

During alcoholic fermentation, the addition of Eaton recommends SIHAZYM Lyso enzyme if the fermentation is very slow or has become stuck. In this case, the addition of SIHAZYM Lyso enzyme serves to suppress lactic acid bacteria, which may lead to the formation of volatile acid or off-flavor, and are in direct competition for nutrients with the yeasts.

Recommended dosage for red and white wine:

pH < 3.5: 1.25 lb/gal (15 g/hl)
pH > 3.5: 1.67 – 2.5 lb/gal (20 – 30 g/hl)

After the alcoholic fermentation, the addition of Eaton recommends SIHAZYM Lyso enzyme in combination with a SO₂ dosage for controlling the development of lactic acid bacteria during storage of wine.

Recommended dosage for red or white wine:

2.09 – 2.5 lb/gal (25 – 30 g/hl, depending on pH value and SO₂ concentration)

Special Notes

SIHAZYM Lyso enzyme contains lysozyme (egg product) and will require mandatory declaration effective June 1, 2009 (Directive 2000/13/EC of the European Parliament and of the Council of Mar 20, 2000 on the approximation of the laws of the Member States relating to the labeling and presentation of food products).

The maximum quantity within the EU is 4.17 lb/gal (50 g/hl). Note that SIHAZYM Lyso enzyme is a protein substance, and that joint contact with bentonite, tannins, and chips should be avoided. It is important that wines that have been treated with SIHAZYM Lyso enzyme are sulfured and filtered. Prior to bottling, SIHAZYM Lyso enzyme should be removed with bentonite, in order to prevent possible protein haze on the bottle. If meta tartaric acid is used for tartrate stabilization, this may lead to protein haze after the application of SIHAZYM Lyso enzyme, notwithstanding bentonite fining.

Safety and Purity

The product is a white, crystalline fine granulate.

Further safety information can be found in the relevant Material Safety Data Sheet, which can be downloaded from our website.

Storage

The product should be stored dry at 68 °F (20 °C). In the unopened original packaging, it has a durability of two years.

Delivery Information

SIHAZYM Lyso enzyme is sold under article no. 95.237.005 and is available in the following package size:

1.1 lb (500 g) PE bottle

HS Customs Tariff: 3507 90 90

Certified Quality

During the production process, SIHAZYM Lyso enzyme is constantly monitored to ensure consistently high quality. These inspections cover technical function criteria as well as conformance with the relevant laws governing the production and sale of foodstuffs. Strict controls are carried out immediately before and during final packaging.

SIHAZYM Lyso conforms to the purity regulations of the International OIV Code for wine treatment products and to the regulations of the German Wine Ordinance.

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For more information, please e-mail us at filtration@eaton.com or visit us online at eaton.com/filtration for a complete list of Eaton's filtration products.

Not all products in Eaton's Begerow Product Line are available in all regions. Please contact your local Eaton office to determine availability.

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