

## PEPfix® IS THE CATALYST FOR CLARITY & STABILITY

At Stabifix our purpose is clear: in a world of constant change stability matters.

We look for ways to incorporate the latest technologies that drive effective and sustainable brewing efficiencies. After all, we too are brewers at heart.

Our product range is designed to complement and enhance the natural beer stabilisation and clarification effects of the brewing process itself. They are designed to do this in a highly targeted way. By exploring a novel approach to clarification and stabilisation we discovered PEPfix®.

PEPfix® is a prolyl oligopeptidase enzyme - also known as prolyl endopeptidase, a proline-specific endopeptidase - that hydrolyses internal peptide bonds, mainly at the carboxyl site, in proline-rich proteins involved in protein-polyphenol interactions to give an enhanced beer colloidal stability. When applied in combination with Stabifix silica gels the enzyme the colloidal stability of beer is significantly enhanced. This combined application allows for a marked reduction in enzyme dosage rates resulting in a considerably lower cost-in-use. An added application for PEPfix® is the production of gluten-reduced beer.

### CLEAR BENEFITS

- Highly selective - targets only haze-sensitive proteins
- Increases the colloidal stability of beer
- Does not impact beer quality parameters including foam, colour, and taste
- PEPfix® and Stabifix silica gels work in synergy to give cost-in-use benefits
- The combined products comply with crossflow membrane filtration
- Works well with all adjunct brewed beers
- Promotes longer beer shelf life
- Can be used to produce gluten-reduced beers

## APPLICATION & DOSAGE

PEPfix® selectively breaks down proline-rich haze-forming peptides and proteins during fermentation. PEPfix® is recommended to be dosed into cold pitching wort at the start of fermentation.

Like all enzymes PEPfix® interacts with its environment and is effective at an optimal pH 4.0 – 5.0 and temperature 60°C / 140°F.

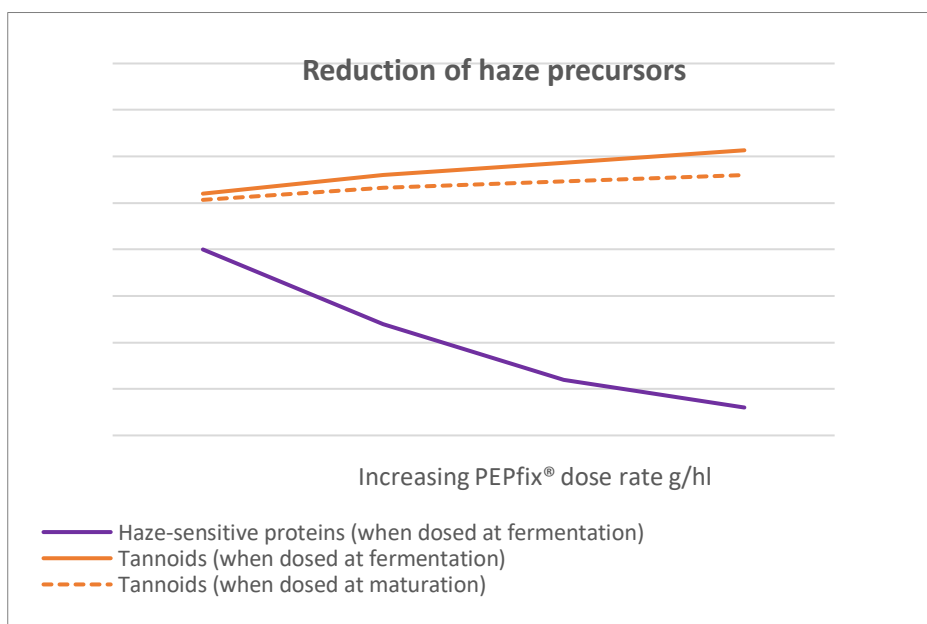
Therefore, it is suitable for use at the acidic pH of wort and beer and effective at standard fermentation temperatures.

PEPfix® dosage rate is very low and can be further reduced significantly when applied in combination with Stabifix silica gels and/or Stabifix FLOWfix®, an enzyme with combined glucanase and arabinoxylanase activity for effective wort separation and beer filtration.

*Product specification data is available in the Product Data Sheet (PDS) and safe handling guidelines are available in the Safety Data Sheet (SDS).*

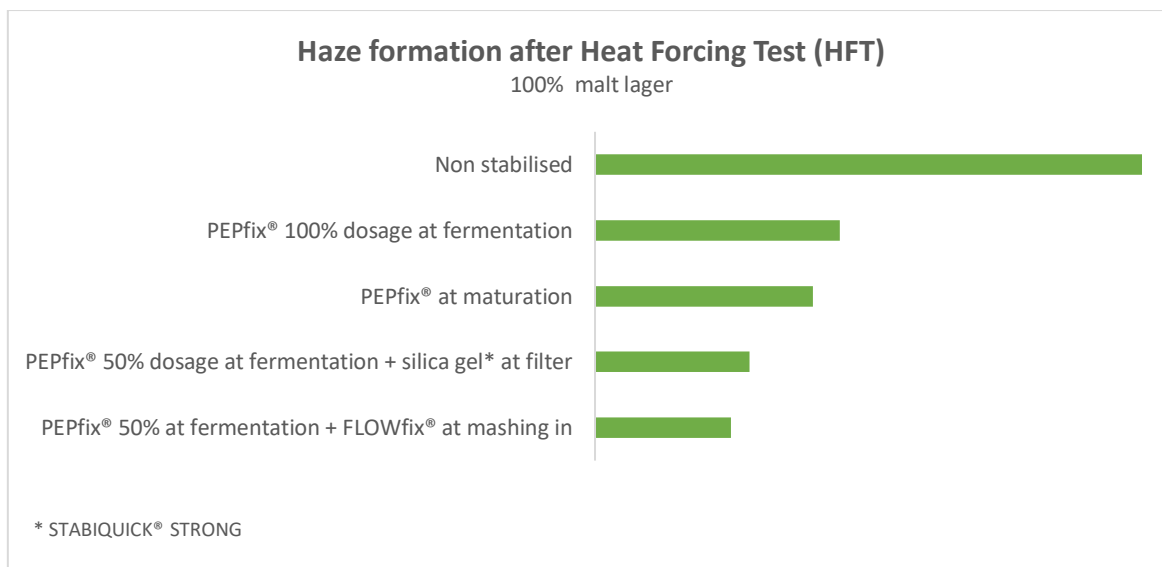
## PERFORMANCE

PEPfix® is only active on haze-sensitive proteins. Due to the interaction of haze precursors during the brewing process, any impact on haze-reactive polyphenols (tannoids) is dependent on the point of application, the use of other beer stabilisers, the dosage rate, the beer style and recipe, and the production processing conditions.



## ENHANCED SYNERGISTIC PERFORMANCE

Considering process parameters, PEPfix® can also be added at a later stage during fermentation or post-fermentation. Our studies have shown a marked improvement in haze reduction and colloidal stability when applying different dosing points. However, each application requires individual assessment to determine the enzyme's optimum performance.



Enzyme application is designed to impact the beer production process. How positive this impact is will depend on many variables including the enzyme type and its efficacy, the point of application, temperature (at fermentation compared to in maturation), the brewing recipe, and the brewing parameters. By exploring the correlations between Stabifix enzymes FLOWfix® and PEPfix® with silica gels we have been able to determine that combined applications allow for a significant reduction of the enzyme dosage rate. This synergistic approach in reducing haze and enhancing colloidal stability leads to greater cost-in-use benefits.

## STABIFIX ENZYMES

Stabifix enzymes are biologically active proteins that transform one substance into another. In other words, they break down (hydrolyse) complex structures. Enzymes catalyse and speed up biochemical reactions in a controlled and targeted way. Since the enzyme itself remains unchanged by the reaction, leaving it free to catalyse further reactions, enzymes are classified a food processing aid.

Beers treated with PEPfix are colloidally stable for over 12 months – meaning there are no changes in any of the relevant brewing quality parameters: foam, colour, taste, pH, alcohol (assuming all standard beer production and storage conditions).

**AT STABIFIX OUR AMBITION is to be future-ready**

- **Our focus is clear:** stabilisation and clarification is what we do
- **Technical know-how** and application expertise drive our inventiveness
- **Our innovations** pave new ways of looking at process and energy optimisation
- **As a supplier** our priority is product quality & safety, and you, our customer