

A Combination Colloidal Stabilizer for Beer

Introduction

As beer ages haze forming proteins combine with reactive polyphenols called tannoids and form a haze. This progressively worsens as the beer ages. Traditional haze prevention relies on either removal of protein with a silica and/or removal of the tannoids with a polymer such as polyvinylpyrrolidone (PVPP).

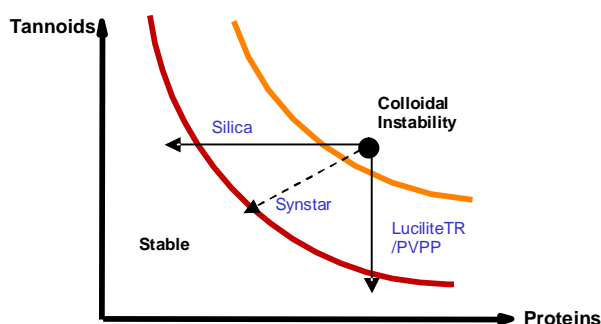
Synstar is a single application stabilizer designed to extend the colloidal stability of beer by the adsorption of both proteins and polyphenolic tannoid compounds found in beer. Synstar is a blend of a highly specific silica xerogel and polyvinylpyrrolidone bound to silica xerogel.

Synstar Advantages

- Effective Stabilization
 - Since Synstar controls both protein and polyphenols in one addition the results are more consistent and reliable giving longer shelf life. In addition Synstar has a lower affinity for catachin, (an important antioxidant in beer) than PVPP. As a consequence beers treated with Synstar have improved flavor stability over beers treated with PVPP.
- Economical in Use
 - Since both Polyphenols and proteins are controlled the total dose rate of product to obtain good stability is lower than if either fraction is controlled alone.
- Easy to handle
 - PVPP and xerogels are very dusty solids. Synstar is low dusting like hydrogels. However unlike silica hydrogel it may be used directly in DE filtration. Synstar may be applied in maturation, FV unitank, or into DE dosing prior to filtration.
- Service support
 - Brewers Supply Group working with our partners offers laboratory testing support to determine ideal product type, dose rates and mode of use.
- FDA Approved

Mechanism of Action

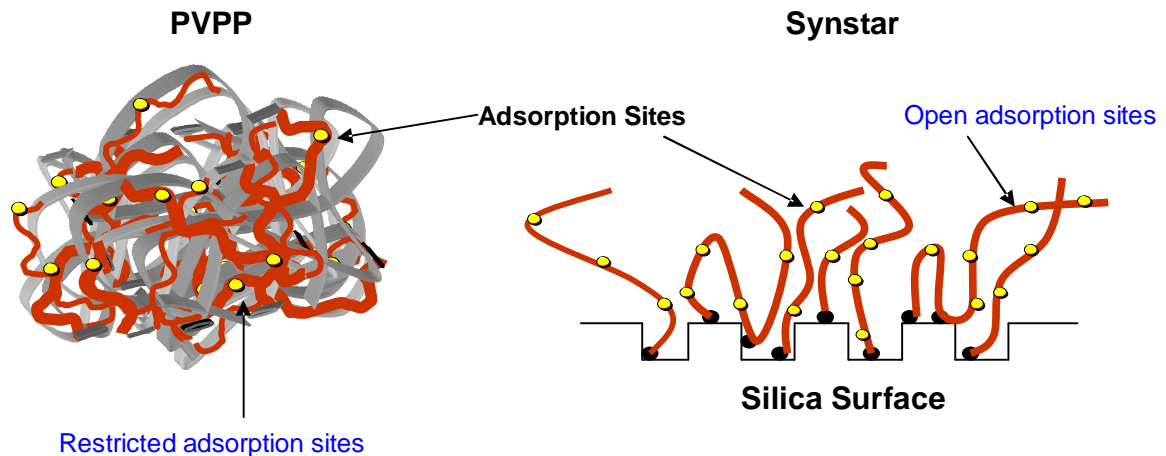
Synstar works by combining the protein adsorption properties of silica xerogels with the tannoid adsorption of PVP. Combined stabilization uses considerably less overall dosage of product whilst giving superior stabilization than treating for protein or tannoids only.



By measuring haze active proteins and tannoids we can ensure consistent performance time after time.

The tannoid removal fraction is based upon PVP bound to silica,

this results in less hindered adsorption sites and therefore more specific adsorption of higher molecular weight tannoids. In addition to greater specificity for the higher molecular weight tannoids the more open structure means less hydration time prior to use. Synstar may be dispersed in dosage water and immediately dosed into the beer.



Use & Dosage

Synstar may be used in Fermentation, Maturation vessels or dosed on route to the filter. Typical dose rate are 5-15 pounds per 100 Bbl (20-60 g/hl). The charge should be dispersed in water at approx 10% w/v slurry. Optimum dosage depends upon the concentration of dissolve haze active proteins and polyphenols and is best determined by laboratory analysis.

Availability & Storage

Synstar is available in two types, one for low tannoid beers, (Synstar Op3) and one for high tannoid beers, Systar Op5) and in two pack sizes 10 and 25 pounds. Typically highly hopped, all malt beers will require Synstar 5 whereas beers with low bitterness or sugar adjuncts will obtain satisfactory performance.