






## White Labs Fermentation Enzymes

Made with Brewers Clarex™ by **DSM** 

### Safety and Handling

Please refer to the Materials Safety Data Sheet available on request

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## APPLICATION DATA SHEET

# CLARITY-FERM

**A highly specific endo-protease to prevent chill haze in beer**

### PRODUCT DESCRIPTION

CLARITY-FERM is a product containing a highly specific endo-protease which only cleaves polypeptides at the carboxyl end of the amino acid proline. It is standardized at a minimum of 1 PPU per gram.

### FUNCTION

Chill haze in beer results from the precipitation of complexed polyphenols and proteins during cold storage. The nature of this precipitation has been shown to be the result of hydrogen bonding between the polyphenols and the proline-rich fraction of particular polypeptides. This haze develops over time and, initially, is reversible (haze disappears when the temperature of the beer increases). As the hydrogen bonding becomes stronger this chill haze can become permanent.

CLARITY-FERM will prevent the precipitation of complexed polyphenols and proteins by hydrolyzing the sensitive (haze-active) polypeptides in the region where such hydrogen bonding occurs. The specificity of the enzyme ensures that no other beer parameters are affected.

### APPLICATION

CLARITY-FERM can be used with all kinds of malts and other raw materials.

CLARITY-FERM is added to cooled wort at the beginning of fermentation.

The required dose rate is determined by:

- The percentage of barley malt, raw barley and/or wheat of the total grist composition;
- The specific gravity (Plato) of the wort at the beginning of fermentation;
- The shelf-life required (months).

Note: There is no requirement to treat any adjuncts derived from maize grits or rice with CLARITY-FERM.

### Recommended Dose Rates of CLARITY-FERM\*

	Shelf-Life Requirement	
<u>Raw Material (by extract)</u>	<u>6 – 9 months</u>	<u>9 - 12 months</u>
100% malted barley	6 – 10 g/Hl	10 – 15 g/Hl
60% malted barley	3 – 6 g/Hl	6 – 9 g/Hl

\*Recommended dose rates based on a 12°P wort