

TECHNICAL INFORMATION SHEET

KOPPAKLEER TABLETS - KETTLE FININGS

Description

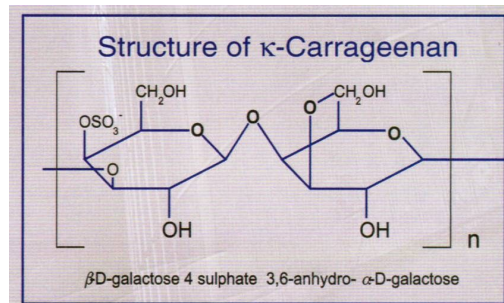
KOPPAKLEER TABLETS are a blend of naturally occurring brewery approved seaweed materials. Consistency of performance is provided by quality control checks of every batch for wort trub formation.

Benefits

- **Brilliant clarity of your cold wort** - Koppakleer achieve clarity by precipitating virtually all haze material from cold worts and giving extensive cold break formation
- **Reduced costs of beer processing** - Koppakleer reduce costs by removing fine proteinaceous particles, simplifying downstream fining, filtration and beer stabilisation
- **Energy savings from reduced boiling times** - Koppakleer will maintain their performance even in conditions of reduced boiling times
- **Consistent beer fining** - Koppakleer can clean up worts with variable particle content presenting a more consistent beer for racking
- **Prolonged beer shelf-life** - Koppakleer remove substantial quantities of proteinaceous haze-precursor material without affecting the retention

Principle

The active ingredient in KOPPAKLEER is a polysaccharide called carrageenan which is derived from seaweed. Carrageenan in solution is negatively charged, owing to the sulphate groups along the polysaccharide backbone. It is these charged sites which interact with wort proteins.



In solution at temperatures above 65°C, the carrageenan has a random coil structure. As the wort cools the carrageenan takes a much more compact and ordered helical structure which is thought to drag the protein particles together to form aggregates. The aggregates, having a larger particle radius, settle faster.

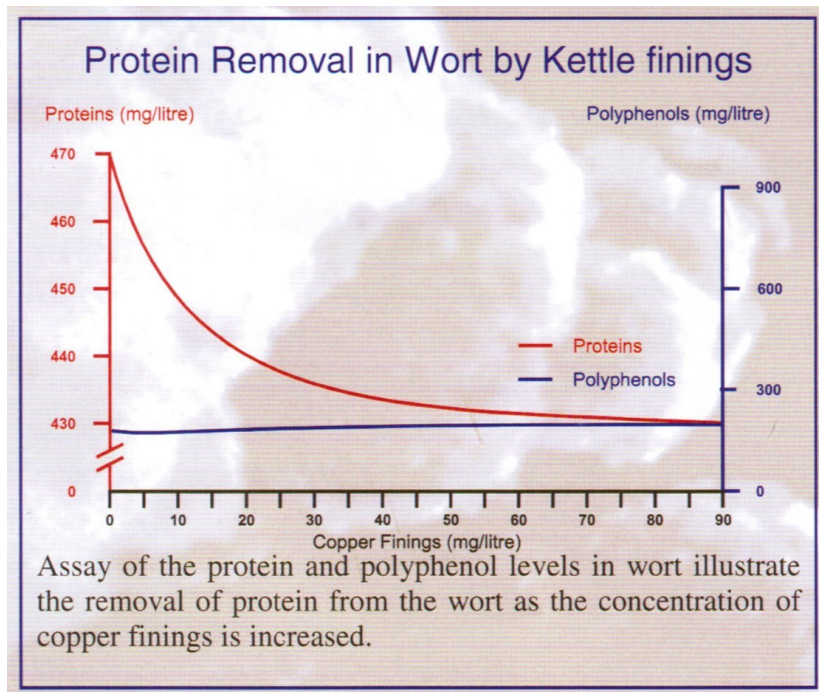
Kettle finings are added in the kettle only to allow the carrageenan to dissolve. Wort proteins react with carrageenan as the wort cools and settle as a cold break during fermentation to be removed along with the excess yeast.

The removal of particles and protein from wort has been demonstrated by microscopic examination of pre-filtered beers and protein assay.

Kettle Fining Rate / ppm	Mean NMP Level (x 10 ⁶)		
	> 10 μ m	2-10 μ m	< 2 μ m
13	0.6	7.6	3.4
25	0.1	0.5	0.5
30	0.02	0.06	0.11

As the levels of kettle finings increase, the fine particle counts in each of the size bands decrease. It should be noted that the particles below 2 microns are mostly responsible for blinding filter pores.

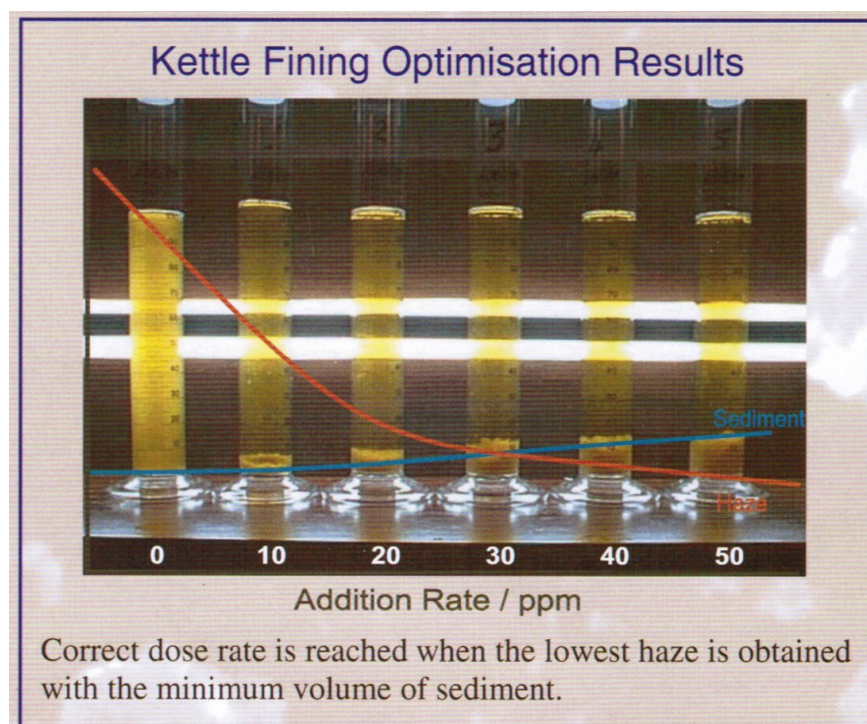
Since Kettle Finings remove both particulate and soluble protein, and soluble protein is a component of chill haze, it is unsurprising that the colloidal stability of kettle fined beers is enhanced.



Usage

Koppakleer Tablets may be added directly to wort.

Addition of the tablets to the hot wort can be made in the kettle or whirlpool. Precise timing and mechanism of addition is critical, and alternative applications should be discussed with your technical representative. Addition rates are best assessed in the first place with laboratory scale trials. Current rates are in the range of 10-80 ppm indicating the large differences in properties of worts from different breweries.



Guidelines for use

- Check that the product is within its shelf life before use
- Ensure that the product is dispersed into the wort and does not stick to the walls of the kettle or be drawn up the stack with the steam
- Carry out optimisation trials to determine the correct rate of use
- Read the Material Safety Data sheet prior to use
- DO NOT open the kettle to make the addition unless the boil has been temporarily turned off
- DO NOT add the product significantly earlier or later than the recommended time

Specification

COMPOSITION	Food grade Semi refined carrageenan, produced by alkali treatment of <i>Euchema cottonii</i> , specifically for use in brewing; and dispersants
APPEARANCE	Off white disperse completely in water at temperatures above 90C
<u>Analysis</u>	
Tablet weight (g)	2.4
<u>Maximum Limits of Impurities</u>	
As (ppm)	3
Pb (ppm)	40
<u>Microbiology</u>	
Total plate count	<5000 colonies per g
Yeasts & Moulds	<300 colonies per g
<i>E.coli</i>	Negative in 5 g
<i>Salmonella spp.</i>	Negative in 25 g

Regulations

The carrageenan (E407) in this product meet the definitions and requirements of carrageenan as set forth by the FAO/WHO and EU standards.

Storage & Shelf life

- Store in cool conditions away from direct sunlight
- Keep in original container
- Maximum storage temperature is 30°C
- Keep containers sealed when not in use
- Recommended storage temperature is 10°C - 15°C
- The shelf life at the recommended storage temperature is at least 2 years from the date of manufacture

Technical Support

For Health & Safety information on this product, please see the Safety Data Sheet (SDS)

For support and advice on the use of this product, please call or e-mail our Technical Support:-

Telephone:- + 44 (0)115 978 5494

techsupport@murphyandson.co.uk

For up to date information regarding, Kosher, Halal, Vegetarian, GMO status, or anything not mentioned on this tech sheet please email:-

compliance@murphyandson.co.uk or call +44 (0)115 978 5494

Reference

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