

KOMPACTIKLEER C**1 DESCRIPTION**

Kompaktikleer C is a concentrated isinglass solution, that can be added either to cask conditioned or brewery conditioned beers, and which is generally diluted before use.

- ◆ A traditional and natural product
- ◆ Concentrated finings; considerably reduces costs
- ◆ Blended for use in both cask and brewery conditioned beers, where facilities for separate products are not available
- ◆ Ensures very tightly compacted cask or tank bottoms

2 STORAGE AND SHELF LIFE

- Store in cool conditions, away from direct sunlight
- Keep containers sealed when not in use

- Maximum storage temperature - 15°C
- Recommended storage temperature - 5 to 14°C
- Minimum storage temperature - 1°C
- Do not allow the product to freeze

- The shelf life at the recommended storage temperature is 8 weeks from date of manufacture
- The product may separate slightly on prolonged storage; remix before use

3 PACKAGING

**25 litre
Drum**

**200 litre
Drum**

**1000 litre
IBC**

4 USING THE PRODUCT**(a) How to dilute the product**

Kompaktikleer C can be added directly to beer, provided that the mixing regime is an effective one; in-line injection with a static mixer is recommended. Its high viscosity, particularly at lower temperatures, means that it is not recommended for addition directly to beer in e.g. vessels or casks without pre-dilution.

Usually, Kompaktikleer C is diluted with water before use, to make a ready-for-use solution. Take 1 part Kompaktikleer C, add 2 parts water and mix thoroughly. The water does not have to be deionised and should be at a temperature of between 5°C and 18°C, preferably between 10°C and 15°C. This ready-for-use solution can be stored in a closed vessel before use, enabling batches to be made up to cover a period of time.

(b) How much isinglass to add to cask conditioned beer

Most cask conditioned beers require additions of ready-for-use isinglass at rates between 2 pints and 4 pints per barrel. For the most commonly used containers, these addition rates are shown below:-

READY-FOR-USE ISINGLASS	9 gallon (Firkin)		18 gallon (Kilderkin)		36 gallon (Barrel)	
2 pints per barrel	½ pint	0.28 litres	1 pint	0.57 litres	2 pints	1.14 litres
3 pints per barrel	¾ pint	0.43 litres	1½ pints	0.85 litres	3 pints	1.70 litres
4 pints per barrel	1 pint	0.57 litres	2 pints	1.14 litres	4 pints	2.28 litres

(c) Where to add isinglass to cask conditioned beer

Ready-for-use isinglass can be added at one of several points. See also below *Using isinglass with auxiliary finings*:-

- **Into the beer main feeding the racking heads**

This method is combined with proportional metering to ensure the correct rate of addition. If the distance to the racking head is short, a static mixer should be used.

- **Into the cask as part of the racking process**

Ready-for-use isinglass is metered into the beer as it fills the cask. The turbulence of the filling process ensures good mixing.

- **Into the cask before the cask is filled**

The appropriate quantity of ready-for-use isinglass is put into the cask before filling. Mixing can be poor if the filling rate is slow and further agitation is then recommended.

- **Into the cask after it has been filled**

The least reliable method as mixing is then totally dependent on agitation or rolling of the cask after filling. With full casks and little headspace, effective mixing of the isinglass takes much more agitation than is generally realised.

(d) How much isinglass to add to brewery conditioned beer

Most beers will require an addition of ready-for-use isinglass at rates between 0.15% and 0.35% v/v. The exact rate will depend amongst other things upon whether or not kettle finings have been used in the brewhouse, the degree of yeast flocculation, the residence time on chill at the end of fermentation and the strength of the beer. An addition of 0.3% v/v is a good starting point for optimisation of the rate. For brewery conditioned beers, it is not necessary to achieve bright beer in the fining process; a haze value of ca. EBC 4 is usually sufficiently low to permit good filtration. Excessive additions of isinglass finings will not harm beer, but losses will increase due to large volumes of tank bottoms.

(e) Where to add isinglass to brewery conditioned beer

The ready-for-use isinglass solution is best added during the transfer of beer from Fermentation Vessel (FV) to Maturation Vessel (MV) or Conditioning Tank (CT):-

- **Into the beer main with proportional metering and static mixing**

The correct rate of finings addition is ensured by metering the beer flow rate. Good mixing is ensured by inserting into the main a static mixer element. A long run to the MV/CT with bends, can substitute for a mixer.

- **Into the beer main during the majority of the beer transfer**

About 10% of the beer to be transferred should be run and then the finings injected at such a rate to ensure it has all been added by the time 90% of the transfer has been completed. The remaining 10% of beer can then be transferred to flush through.

- **Into the MV/CT before the beer is transferred**

Mixing in this case will be good at the start, but will be significantly worse once the vessel has filled. If the transfer rate is slow and takes more than ca. 30 minutes, it is unlikely that all of the beer will be contacted by isinglass in its active form and the fining will be poor.

- **Into the MV/CT after it has been filled**

The least reliable method as mixing is then totally dependent on agitation or worse still, diffusion. Injection of the required amount of finings at the bottom of the tank followed by gas rousing can however be effective.

f) Using isinglass with auxiliary finings

With many cask conditioned beers, the best clarity is achieved by using an auxiliary fining product such as **Alginex**, **Cellabrite**, **Finings Adjunct** or **Superkleer** in combination with isinglass. These products enhance the action of the isinglass. It is not usually necessary to use auxiliary finings in brewery conditioned beers. Auxiliary finings can be added at one of several points:-

- **Into the fermentation vessel**

In order to avoid the difficulties of mixing auxiliary and isinglass finings in cask, the auxiliary can be added to the fermentation vessel. The addition should be made at the end of fermentation, just as the vessel goes onto chill. In most cases, the residual fermentation and convection currents on cooling are sufficient to mix the product. With larger vessels, it is recommended to recirculate the tank contents if possible or to rouse with CO₂ from the tank bottom.

- **Into the beer main feeding the racking heads**

This method is combined with proportional metering to ensure the correct rate of addition. Typically, the auxiliary is added first and a static mixer should be positioned between the addition point and the isinglass addition point downstream. If the distance to the racking head is short, another static mixer should be used after the isinglass.

- **Into the cask before it is filled**

The appropriate quantity of auxiliary is put into the cask before filling. If the filling rate is fast and turbulent, isinglass can then be added towards the end of the fill or after.

5 GUIDELINES FOR USE

DO

- Check that the product is within its shelf life before use
- Remember that isinglass solutions are temperature sensitive
- Carry out optimisation trials to determine the correct rate of use

DO NOT

- Mix auxiliary and isinglass finings before they are added to beer
- Add isinglass finings before auxiliary finings - it rarely works
- Add too much isinglass. Tank bottoms will be very loose with high beer losses

6 TECHNICAL SUPPORT

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

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

Telephone:- + 44 (0)115 978 5494

E-Mail:- laboratory@murphyandson.co.uk

7 SPECIFICATION

Composition	An acidified aqueous suspension of collagen derived from the swim bladder of certain fish; silica hydrogel and sodium metabisulphite
Appearance	A translucent viscous liquid with a suspension of white powder
Odour	Sulphur dioxide (SO ₂)
Specific Gravity (@ 20°C)	1.0
Viscosity (cP) (@ 10°C)	4200 at low shear; 1100 at high shear
<u>Analysis</u>	
Total Nitrogen (ppm)	1460 ± 70
Total Soluble Nitrogen	95 ± 5% of Total Nitrogen
Soluble Collagen	75% minimum of Total Nitrogen
Sulphur dioxide (ppm)	500 ± 50 *
pH	2.3 ± 0.1
Flavour	Does not adversely affect beer flavour
<u>Microbiological</u>	
Total Plate Count (cfu/ml)	< 1000
<u>Maximum Limits of Impurities</u>	
As (ppm)	3
Pb (ppm)	10
Cu (ppm)	50
Zn (ppm)	25
Cu + Zn (ppm)	50

* *The sulphur dioxide specification is that at the time of manufacture. Because of its volatile nature, the level at delivery may be less than this figure*

This product is classed as acceptable for use in food by the MAFF document 'Report on the Review of Additives and Processing Aids used in the Production of Beer' (FAC/REP/26).

Sulphur dioxide and sulphites at concentrations of more than 10 mg/kg or 10 mg/l expressed as SO₂ must be labelled as allergenic (**European Directive (2003/89/EC)**)

8 REFERENCE

Product	Kompactikleer C
Authorised by	C.J. Fleming
Issue No.	4.0

Product Code	KOM230C
Formulation	
Date	01/10/97