

# TECHNICAL INFORMATION SHEET: ALLKLEER C—ISINGLASS FININGS

**PRODUCT NAME:****ALLKLEER C****PRODUCT CODE:****AKC****COMMODITY CODE:****35030080****PACKAGING:****25, 200, 600 AND 1000  
KG****GUIDELINES FOR USE****Check that the product  
is within its shelf life****Store at 5-14°C****Shelf life is eight  
weeks****Carry out optimisation  
trial to determine rate  
of use****Do not mix with  
auxiliary finings  
before adding to beer**

## Description

Allkleer C is a concentrated isinglass solution that can be added directly, or after dilution, to either cask conditioned or brewery conditioned beers to clear yeast.

## Benefits

- Rapidly clears yeast from beer
- Also lowers protein and lipid level in beer
- A traditional and natural product
- Large saving in both cooling energy costs and capital investment may be achieved by shorter conditioning tank residence time
- Filter performance is enhanced
- Enhances beer foam stability
- Can be used for both cask conditioned and brewery conditioned beers, ideal for where facilities for separate products are not available.



### TECHNICAL SUPPORT

tel: +44 (0) 115 978 5494 | e: [techsupport@murphyandson.co.uk](mailto:techsupport@murphyandson.co.uk)

### REGULATORY COMPLIANCE INFORMATION

Refer to the **Product Specification Sheet** or contact us on  
tel: +44 (0) 115 978 5494 | e: [compliance@murphyandson.co.uk](mailto:compliance@murphyandson.co.uk)

### HEALTH & SAFETY INFORMATION

Refer to the **Safety Data Sheet (SDS)**

## Principle

The active ingredient in Isinglass is the protein molecule collagen. Unfiltered, unfiltered beer may be thought of as consisting of negatively charged yeast cells and uncharged non-microbiological particles in a buffered alcoholic solution.

Positively charged isinglass is attracted to the yeast cell walls and adheres the cells together, thereby increasing the floc radius. The larger aggregates settle faster; as they do, they also enmesh the uncharged protein particles.

The shift in particle size is a rapid reaction and is for the most part complete within two hours. The rapid settlement of yeast and protein is seen by a rapid decrease in beer haze such that conditioning time can be reduced to as short as three days in tank.

## Application

### How to dilute the product

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

Usually, Allkleer C is diluted with water before use, to make a ready-for use solution. Take 1 part Allkleer 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 is ready-for-use solution can be stored in a closed vessel before use, enabling batches to made up to cover a period of time.

### Adding isinglass to casks:

It is better to add isinglass into the cask before the cask before it is filled. Add 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. Adding isinglass after the cask has been filled is less reliable as mixing is then totally dependent on agitation or rolling of the cask after filling. With full casks and little head space, effective mixing of the isinglass takes much more agitation than is generally realised.

## Using isinglass with auxiliary fining in cask conditioned beer

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. 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 CO<sub>2</sub> from the tank bottom.

### *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.

\*N.B. Auxiliary finings should not be mixed with isinglass prior to mixing with beer.

## Where and when to add isinglass to brewery conditioned beer

Isinglass solution is best added during the transfer of beer from Fermentation Vessel (FV) to Maturation Vessel (MV) or Conditioning Tank (CT). It can be proportionally added by metering by 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.

If added into the MV/CT before the beer is transferred mixing 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 approximately 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.

## Rates of Use

### For cask conditioned beer

The exact rate for a given beer will vary according to the brewery, the recipe and the types of yeasts and adjuncts used. If isinglass rates are too high the sediment will be fluffy and voluminous, causing wastage and poor filtration. Most cask conditioned beers will require

additional rates of between 4ml and 14ml of isinglass to one litre of beer. Yeast count will also affect the isinglass performance. Providing yeast counts are maintained within reasonable limits, ( $0.5-3.0 \times 10^6$  cell/ml), satisfactory finings performance is obtained. Very low yeast counts can result in poorly developed flocs which are easily disturbed. Isinglass finings optimisations should be carried out to determine this more accurately.

Yeast count and viability kits can be purchased from Murphy and Son Ltd.

### For brewery conditioned beer

Most beers will require addition rates of between 4ml and 14ml of isinglass to litre of beer. 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. For brewery conditioned beers, it is not necessary to achieve bright beer in the fining process; a haze value of ca. EBC 4 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.

## Finings Optimisation

This should be carried out on a regular basis and certainly when a new season's malt comes on stream. Usage rates need to be optimised both to ensure economic cost is achieved and in order to gain the best possible results. Over fining can cause hazes just as under fining can leave hazes: it is not a case of more finings always giving better clarity.

An optimisation is run by making trials to optimise the rate of Isinglass addition within the range of 0.4–1.6 litres per hl by adding 2, 4, 6 and 8 ml of RFU Isinglass to 4 labelled 500 ml bottles and mixing well.

Samples containing Auxiliary finings within the range 0.2, 0.4, 0.6 and 0.8 litres per hl are set up to run concurrently by adding 1, 2, 3 and 4 ml of RFU Auxiliary finings to 4 labelled 500 ml bottles and mixing well.

After an appropriate time interval, which will vary with beer type, an assessment is made of the optimum rate of isinglass required to fine the beer. This will not necessarily be the brightest beer, since the Auxiliary will improve the polish. With the Isinglass we are looking for the point at which any extra Isinglass added appears to add only excess bottoms, with no appreciable improvement in clarity. This rate of Isinglass is then added to all the

sample bottles of Auxiliary finings, mixing well. It is then quite easy to check the effects of three or four re-settles as required.

Once an optimum rate has been assessed, it is important to keep a check to ensure that it is going to work. Take a sample of the beer, either from FV after fermentation or from the Conditioning Tank/Racking Back. Add to this the equivalent rate of Auxiliary and mix well. An hour later add the optimum rate of Isinglass and remix. Within a short period of time you should see floc formation and clarification of the beer occurring. You can then have peace of mind that the beer should fine well in trade.

A free finings optimisation service is available for Murphy and Son customers. Please contact us for more information.

## Storage and shelf life

Store in cool conditions away from direct sunlight

Keep in original container

Keep containers sealed when not in use

Minimum storage temperature is 1°C, maximum storage temperature is 15°C

Recommended storage temperature is 5°C - 14°C

Do not allow the product to freeze

The shelf life at the recommended storage temperature is eight weeks from the date of manufacture

The product may separate slightly on storage; remix before use especially if using 1000 and 200 litres IBC

## Sulphur regulations

Sulphur dioxide, sulphide and sulphites at concentration of more than 10 mg/kg or 10 mg/l (ppm) expressed as SO<sub>2</sub> must be labelled as allergenic. Normal use of this product will add 2 to 7 ppm of SO<sub>2</sub>. The maximum level permitted for SO<sub>2</sub> in cask conditioned beer is 50 ppm. In all other beers only 20 ppm SO<sub>2</sub> is permitted.

For the maximum levels permitted for SO<sub>2</sub> in wine please contact technical support.



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