

TECHNICAL INFORMATION SHEET: MAGICOL AC—ISINGLASS FININGS

PRODUCT NAME:
MAGICOL AC

PRODUCT CODE:
MLAC

COMMODITY CODE:
35030080

PACKAGING:
1 KG

**GUIDELINES FOR
USE**

**Check that the
product is within its
shelf life**

Store at 5-14°C

**Shelf life is three
years**

**Carry out
optimisation trial to
determine rate of use**

**Do not mix with
auxiliary finings
before adding to beer**

Description

Magicol AC is a powdered form of isinglass that can be dissolved to make a ready-for-use isinglass for treatment of either cask conditioned or brewery conditioned beers to clear yeast.

Benefits

- Rapidly clears yeast from beer and lowers protein and lipid level in beer
- 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
- The most concentrated form of isinglass; lowest cost in use, very long shelf life in comparison to other forms of isinglass



TECHNICAL SUPPORT

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REGULATORY COMPLIANCE INFORMATION

Refer to the **Product Specification Sheet** or contact us on
tel: +44 (0) 115 978 5494 | e: 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 and mix the product

Before it can be used, the product must be dissolved in water:

- Set up a mixing tank with a high shear mixer (e.g. Silverson, Greaves)
- Fill the mixing tank with water at a temperature of 10 to 14°C
- Turn on the mixer
- Add to the tank the Magical AC at a rate of 6g/litre of water
- Mix until the tank contents appear to be homogeneous
- Leave to stand for several hours and then mix again for a short time
- Repeat the previous step until solubilisation is complete

Depending on the shear strength of the mixer, the product can take quite a long time to dissolve. If it has only partially solubilised by the time the solution is used, reduced fining efficiency will be the result. For best performance, make up the solution 96 hours in advance, stirring occasionally. At the end of the mixing process, the tank will contain ready-for-use isinglass. Magical AC contains no sodium metabisulphite preservative so the made up solution should be used immediately.

Adding isinglass to casks:

It is better to add isinglass into the cask before it is filled. Add the appropriate quantity of ready-for-use isinglass 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 CO₂ 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.

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 ready-for-use isinglass per 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 with each new season's malt. 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: 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 three years from the date of manufacture

Sulphur regulations

Sulphur dioxide, sulphide and sulphites at concentration of more than 10 mg/kg or 10 mg/l (ppm) expressed as SO₂ must be labelled as allergenic. Normal use of this product will add 2 to 7 ppm of SO₂. The maximum level permitted for SO₂ in cask conditioned beer is 50 ppm. In all other beers only 20 ppm SO₂ is permitted.



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