

# Technical Information



## Compac CG (CCG 311)

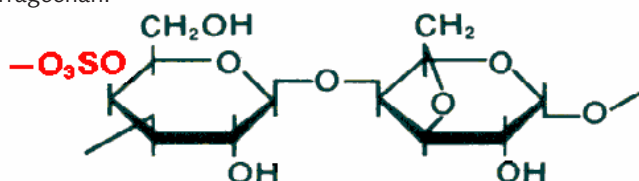
### Wort Clarification

#### Description

Compac CG is the semi-refined, granulated form of the seaweed species *Euchema cottonii*.

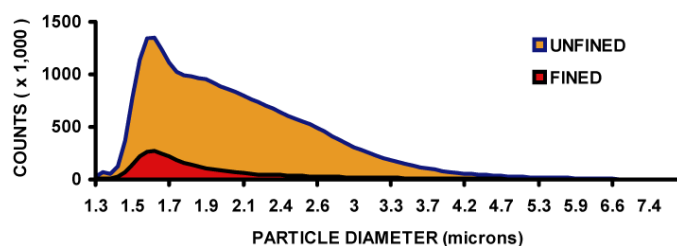
#### Principle

The species *Euchema cottonii* is rich in the kappa isomer of carrageenan.



When added to boiling wort, kappa carrageenan reacts strongly with soluble proteins, notably the proline-rich haze precursor fraction. When the wort is cooled the carrageenan-protein complex becomes unstable and precipitates out of solution. The clear wort that results produces a beer with enhanced processing characteristics.

**EFFECT OF KETTLE FINING  
PARTICLE SIZE ANALYSIS**



#### Benefits

- Improved hot break compaction in the whirlpool
- Improved yeast vitality during fermentation
- Improved filtration – longer filter runs
- Improved beer haze and colloidal stability

#### Treatment Rates

Compac CG is typically added to wort at rates in the range 1–3g/hl. Variations in grist make-up, malt quality, brewing liquor, and plant operation all have a major impact on the carrageenan requirement. The correct addition rate is best identified by a simple optimisation test (see later).

#### Brewing Practice

Carrageenan is well established in the brewing industry as an important processing aid. Originally, unprocessed seaweed of the species *Chondrus crispus* (Irish Moss) was used to good effect. As interest in the food industry for high kappa isomer species such as *Euchema cottonii* increased, so did availability and quality. Today, most carrageenan used in brewing is of this species. Its role as the most cost effective method of wort clarification is undisputed.

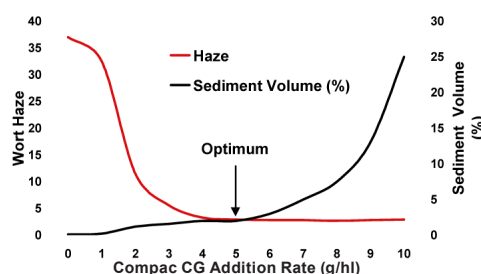
#### Application

Compac CG is best added to the kettle 10 minutes before the end of the boiling period. Addition can be made directly into the kettle or via automatic addition systems, either as powder or liquid slurry.

#### Identification of Optimum Addition Rate

- Prepare a solution of Compac CG in hot water. Example: add 0.75g Compac CG to 500ml boiling water. Stir for 10 minutes.
- Add the solution to a series of clear glass containers to give a range of treatment rates. Example: to 300ml containers add 0, 2, 3, 4, 5, 6, 8 and 10ml of solution. This will give an addition rate range of 0 to 5g/hl.
- Sample wort from the kettle at the end of the boiling period and whilst still hot add to the predosed bottles. Mix well, seal, and allow to stand for an hour. Cool in cold water and allow to stand overnight.
- Assess results by observing the clarity of the wort and the sediment volume. The optimum result is obtained by identifying the addition rate at which a combination of clarity and low sediment volume is found. Interpretation of the results can be facilitated by measuring the haze or turbidity of the wort.

**Typical Wort Clarification Profile**



#### In Practice

The effectiveness of Compac CG should be regularly monitored in the brewhouse. We recommend taking a sample of wort after chilling into a sterile container and assessing the clarity after allowing to settle for several hours. Addition rates may need to be adjusted to compensate for changes in wort composition, notably pH variation.

#### Regulatory

##### USA

Approved by Food and Drug Administration under 21CFR Section 172.620. Entered in Brewing Adjuncts Manual 30/6/89

##### UK and EEC

Authorised under European Parliament and Council Directive 95/2/EC. E407a