

Sorbic Acid and Potassium Sorbate Degradation

Project: Innoculant

Authors: Ithihas Madala

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Aim:

To degrade the Sorbic Acid present in the sedimentation process of sugar processing using Sulphur Dioxide

Principle:

Sorbic acid is known to undergo degradation in aqueous solutions, and this degradation appears to be accelerated in the presence of sulphur dioxide. At low pH (4.5-6), Potassium Sorbate readily converts into sorbic acid in water. During the sulphonation process, sugarcane juice has a pH of 5.0 to 6.0 making it ideal for the degradation of potassium sorbate as well.

Apparatus:

1. Glass bottle with screw cap
2. Degradation chamber

Reagents:

1. 1L of Degassed Distilled water
2. 1.5g of Sorbic Acid
3. Sulphur Dioxide gas
4. Iodine

Procedure**:

1. Dissolve 1.5g of Sorbic acid in 1 litre of degassed distilled water
2. Pass Sulphur dioxide gas through 500mL of degassed distilled water for 1 minute
3. Obtain the concentration of the dissolved Sulphur dioxide by titrating with iodine.
4. To prepare the degradation mixture, mix the stock solutions of both sorbic acid and sulphur dioxide such that the final concentrations are 1g/L sorbic acid and 1.5g/L sulphur dioxide.
5. Store the solution in a clear glass bottle with a screw cap.
6. Place the glass bottle in a degradation chamber.
7. Measure the concentration of Sorbic acid at regular intervals using the Sorbic Acid characterization protocol.

 Sorbic Acid & Potassium Sorbate Characterization