

FURFURAL DETECTION KIT RAPID

Product Description

The Furfural Detection Kit Rapid provides a rapid, sensitive, and easy-to-use method for detecting the presence of furfural in alcoholic beverages. Utilizing the specific chemical reaction between furfural and color activator under acidic conditions, this kit allows for the qualitative and quantitative analysis of furfural, helping manufacturers ensure the quality and safety of their products.

Principle of Method

This kit is based on the condensation reaction between furfural and color activator in the presence of an acid catalyst. When furfural, a potential spoilage indicator in alcoholic beverages, reacts with phloroglucinol, a colored complex is formed. The intensity of this color, measurable by spectrophotometry, is directly proportional to the furfural concentration in the sample.

Contents of Kit

Ref.No

FA100002

Shelf-Life and Storage

24 months at RT

- Color Activator R1, 5x10 mL.
- Acid Catalyst R2, 5x10 mL.

Required but Not Provided

- Spectrophotometer capable of measuring absorbance at 520-550 nm
- Water bath capable of maintaining 70°C
- Timer
- Distilled or deionized water

Application Procedure

1. Sample Preparation:

- Dilute the alcoholic beverage sample 1:10 with distilled or deionized water to reduce alcohol content.

2. Reaction Setup:

- In a test tube, combine 0.5 mL of diluted sample, 0.5 mL of color activator R1, and 0.5 mL of Acid Catalyst R2.

3. Incubation:

- Heat the mixture in a water bath at 70°C for 10 minutes.
- Allow the tube to cool to room temperature.

Measurement:

- Transfer the reaction mixture to a cuvette.
- Measure the absorbance at the appropriate wavelength (520-550 nm) using the spectrophotometer.

Furfural Quantification:

- Use the Furfural Standard Solution to create a calibration curve.
- Compare the absorbance of your sample to the calibration curve to determine the furfural concentration.

Safety Information

- Handle all reagents with care; wear appropriate protective equipment (gloves, goggles).
- The Acid Catalyst R2 is corrosive; avoid contact with skin and eyes.
- Follow local regulations for disposal of chemical waste.

Storage Conditions

- Store the kit at room temperature, away from direct sunlight and heat sources.
- Ensure reagents are tightly sealed when not in use.

Warranty and Disclaimer

This product is guaranteed to perform as described when used as directed. Liability is limited to product replacement or refund. No responsibility is assumed for any loss or damage resulting from improper use or handling.

For technical support and further information, contact our customer service department.

This leaflet provides essential information for the use of the Furfural Detection Kit Rapid. Ensure all users read and understand these instructions before proceeding with the analysis.

Bibliography

- Dutta, S., De, S., Saha, B., Alam, M. I. (2012a). Advances in conversion of hemicellulosic biomass to furfural and upgrading to biofuels. Catal. Sci. Technol., 2, 2025-2036.
- Guerbuez, E. I., Wettstein, S. G., Dumesic, J. A. (2012). Conversion of hemicellulose to furfural and levulinic acid using biphasic reactors with alkylphenol solvents. ChemSusChem, 5, 383-387.

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