

## Application Note

/// Test the alcohol of rice wine with Distillation method

### PRODUCT

RV 10 auto pro V rotary evaporator (Ident. No. 0010005580)  
RC 2 basic recirculating chiller (Ident. No. 0025002319)  
Vacuum pump

### INDUSTRY

Food

### OVERVIEW

Alcohol is the most basic quality indicator of rice wine. It is generally 8% – 16% vol at 20 °C, including traditional dry rice wine, sweet rice wine and refreshing dry rice wine. There are many methods for testing the level of alcohol. Among others, this can be done with insulating flasks, a chemical titration or an alcohol meter. Measuring alcohol with an alcohol meter after distilling is stipulated by the directive of GB/T 3662-2008 "Rice Wine". The distillation process in this method is very critical and deals with the most crucial issue: How to achieve simple, rapid and accurate distillation.



### SAMPLE MATERIAL

Rice wine

### EXPERIMENTAL SETUP

Rotary evaporator	RV 10 auto pro V
Recirculating chiller	RC 2 basic, 15 °C
Heating bath	60 °C
Evaporator mode	Volume
Speed	100 rpm



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## EXPERIMENT STEPS

1. Set the RC 2 basic to 15 °C, the heating bath to 60 °C, switch on the rotary evaporator and the vacuum pump, and wait until the setup has stabilized.
2. Use a volumetric flask to extract 100 ml rice wine at 20 °C and add 100 ml water. Transfer all the liquid to the 1 liter evaporating flask.
3. Use the volume mode of the rotary evaporator to quantitatively distill a 95 ml sample. Then calibrate 3 times and measure twice.
4. Keep the distilled 95 ml sample at 20 °C and add 100 ml of water. Use alcoholmeter to test its alcohol content.

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## RESULT

The contained alcohol is 13 % vol at 20 °C.

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## NOTE

1. Volume mode: This mode is used to distill a specific amount of solvent. The measured values of cooling water flow rate and temperature difference form the basis for a heat balance calculation used to determine the quantity of distillate. The distillation is stopped when the specified quantity of distillate has been reached.
2. IKA RV 10 auto pro V in combination with the RC 2 basic is used to distill a specific amount of solvent with the volume mode. The process is simple and no manual duty is required. The test method conforms to GB/T 3662-2008 "Rice Wine" standard.