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Milk wines

奶酒

(English Translation)

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Foreword

SAC/TC 471 is in charge of this English translation. In case of any doubt about the contents of English translation, the Chinese original shall be considered authoritative.

This standard is drafted in accordance with the rules given in the GB/T 1.1-2009 Directives for standardization—Part 1: Structure and drafting of standards.

Annex A and Annex B of this standard are normative appendixes.

This standard was proposed by National Technical Committee for Standardization of Food Industry.

This standard was prepared by National Technical Committee 471 on Brewing of Standardization Administration of China (SAC/TC 471).

Milk Wines

1. Scope

This standard specifies the terms and definitions, product classification, requirements, analytical methods, inspection rules, sign, packaging, transport, and storage of milk wines.

This standard is applicable to production, inspection and sales of milk wines.

2. Normative Reference

The following normative documents contain provisions which, through reference in this text, constitute provisions of this standard. For dated references, subsequent amendments (excluding corrections), or revisions, of any of these publications do not apply to this standard. However, parties to agreements based this standard are encouraged to investigate the possibility of applying the most recent editions of the normative documents indicated below. For undated references, the latest edition of the normative document referred to applies.

GB/T 191 *Packaging-Pictorial marking for handling of goods*

GB 317 *White granulated sugar*

GB/T 601 *Chemical reagent - Preparations of standard titration solutions*

GB/T 603 *Chemical reagent - Preparations of reagent solution for use in test methods (GB/T 603-2002, ISO 6353-1: 1982, NEQ)*

GB 2757 *Hygienic standard for distilled alcoholic drink and integrated alcoholic beverage*

GB 2758 *National food safety standard - Fermented alcoholic drink and integrated alcoholic beverage*

GB/T 5009.48 *Method for analysis of hygienic standard of distilled wines and mixed wines*

GB/T 6682 *Water for analytical laboratory use - Specification and test methods (GB/T 6682-2008, ISO 3696:1987, MOD)*

GB/T 6914 *Standards for the qualifications of raw and fresh milk received from farms*

GB 10344 *General standard for the labeling of prepackaged alcoholic beverage*

GB 11674 *National food safety standard - Whey powder and whey protein powder*

GB 19301 *National food safety standard - Raw milk*

QB/T 3782 *Demineralized whey powder*

JJF 1070 *Rules of metrological testing for net quantity of products in prepackages with fixed content*

Measures for the Metrological Supervision and Administration of Quantitatively Packed Commodities (Decree No.75 [2005] of the General Administration of Quality Supervision, Inspection and Quarantine)

3. Terms and definitions

For the purposes of this document, the following terms and definitions apply.

3.1

milk wines

a type of alcoholic beverage, made from animal milk, whey or whey powder through fermentation and brewing

3.2

fermented milk wines

a type of brewed wine, made from milk, whey or whey powder through fermentation, filtering and sterilization

note: it refers to milk wines. For example, milk wine made from horse milk or goat milk shall be called horse milk wine or goat milk wine and shall comply with corresponding standard.

3.3

distilled milk wines

a type of distilled wine, made from animal milk, whey or whey powder through fermentation and distillation.

4. Product classification

4.1 According to processing technique, it can be divided into Fermented milk wines and distilled milk wines.

4.2 According to sugar content, fermented milk wines shall be into dry type, semi-dry type, semi-sweet type, and sweet type.

5. Requirements

5.1 Requirements for raw and auxiliary materials

5.1.1 Milk shall comply with the requirements in GB/T 6914 and GB 19301.

5.1.2 Whey powder shall comply with the requirements in QB/T 3782 and GB 11674.

5.1.3 White granulated sugar shall comply with the requirements in GB 317.

5.2 Sensory requirements

5.2.1 Fermented milk wines

Shall comply with the provisions in Table 1.

Table 1 Sensory requirements for fermented milk wines

Items	Dry type and semi-dry type	Semi-sweet type and sweet type
Appearance	Light yellow or light yellowish green, clear and transparent; a small amount of protein sediments is allowed.	
Aroma	With refreshing, mellow and elegant aroma of milk	
Taste	Full-bodied, comfortable and refreshing	With mellow body, harmonious sourness and sweetness
Style	With a typical style of milk wines	

5.2.2 Distilled milk wines

Shall comply with the provisions in Table 2.

Table 2 Sensory requirements for distilled milk wines

Items	Requirements
Appearance	Colorless, clear and transparent, with no suspension and sediments
Aroma	With a mellow and elegant aroma of milk and wine
Taste	With a soft and mellow body, and no peculiar smell
Style	With a typical style of milk wines

5.3 Physical and chemical requirements

5.3.1 Fermented milk wines

Shall comply with the provisions in Table 3.

Table 3 Physical and chemical requirements for fermented milk wines

Items	Dry type	Semi-dry type	Semi-sweet type	Sweet type
Alcohol content [a]/(%vol) ≤	18			
Total acid (expressed as lactic acid)/(g/L)	4.0 to 8.0			

Total sugar (expressed as glucose)/(g/L)	≤15.0	15.1-40.0	40.1-70	≥70.1
Amino acid nitrogen/(g/L) ≥	0.05			
[a] The difference of alcohol content between the value indicated in the label and measured value shall not exceed ±1.0%vol.				

5.3.2 Distilled milk wines

Shall comply with the provisions in Table 4.

Table 4 Physical and chemical requirements for distilled milk wines

Items	Requirements
Alcohol content [a]/(%vol)	19 to 48
Total acid (expressed as lactic acid)/(g/L) ≥	0.5
Total esters (expressed as ethyl acetate)/(g/L) ≤	2.0
Methanol [b]/(g/L) ≤	0.1
Amino acid nitrogen/(g/L) ≥	0.01
[a] The difference of alcohol content between the value indicated in the label and measured value shall not exceed ±1.0%vol. [b] Methanol is converted by 100% ethanol.	

5.4 Hygienic requirements

The hygienic requirements for fermented milk wines shall comply with the provisions in GB 2758.

The hygienic requirements for distilled milk wines shall comply with the provisions in GB 2757.

5.5 Net quantity

As specified in accordance with *Measures for the Metrological Supervision and Administration of Quantitatively Packed Commodities* (Decree No.75 [2005] of the General Administration of Quality Supervision, Inspection and Quarantine)

6. Analytical method

Unless otherwise specified, water used in this standard, shall comply with that specified in GB/T 6682. All reagents, unless otherwise specified, refer to analytical pure reagent (AR).

6.1 Sensory inspection

6.1.1 Preparation of samples

First encode the samples and then maintain the temperature between 20 ℃ and 25 ℃ in the water bath. Then, encode the test glasses that shall be clean and dry, and in correspondence with the samples. Finally, fill each glass with about 25 mL of the sample carrying the same code.

6.1.2 Appearance evaluation

Put the glasses with samples at the bright place, raise them to the eyebrow level to observe transparency, degree of clarity, and presence or absence of suspension and sediments of wines in the glasses, and take notes in detail.

6.1.3 Aroma and taste evaluation

Hold the glass in one hand, slowly raise to the nose, smell it and then slowly swirl the glass, smell aroma by the air entry, hold the middle part of the glass in hands for 2 min, swirl it and then smell it again. According to the above operations, analyze and judge whether

the aroma comes from raw material or other peculiar smells and then write down the evaluation.

Take a sip of sample (about 2 mL), carefully taste it in the gustatory area, swallow it when having obvious impression, then feel flavor and aftertaste in the mouth, and take notes of the flavor characteristics.

6.1.4 Style evaluation

According to characteristics of appearance, aroma and taste, evaluate its style and degree of typicality and write down the conclusive comments.

6.2 Alcohol content

6.2.1 Theory

Measure the alcohol content in distillate with an alcoholmeter after the sample is distilled.

6.2.2 Apparatuses

6.2.2.1 Electric oven: 500W to 800W.

6.2.2.2 Condenser: straight.

6.2.2.3 Alcoholmeter: standard temperature is 20 ℃, and division value is 0.5.

6.2.2.4 Thermometer: 50 ℃, and division value is 0.1 ℃.

6.2.2.5 Graduated flask: 100 mL.

Take 100 mL of sample (at 20 ℃) with a volumetric flask and transfer into a 500 mL distillation flask. Rinse the volumetric flask with 100 mL for several times, pour each rinsing liquid into the distillation flask, and put a few glass beads in. Connect the condenser, inject cold water, and use the original volumetric flask to collect distillate (placed in ice water bath). Heat and distill, and stop distilling until the volume of collected distillate is about 95 mL. Cool it in the water bath to 20 ℃, and fill up the volume with water. Pour into the 100 mL graduated flask and measure temperature and alcohol content of distillate. According to the measured temperature and marking value of alcohol content, check converted alcohol content at 20 ℃ in Annex A for fermented milk wines and Annex B for distilled milk wines.

The obtained result shall be reported to one decimal place.

6.2.4 Precision

The absolute difference between the two independent determination results obtained under the repeatability conditions shall not exceed 5% of the mean value.

6.3 Total acid and amino acid nitrogen

6.3.1 Theory

Amino acid is an amphoteric compound, amino in the molecule loses alkalinity after reacting with methyl aldehyde, and making carboxyl group acidic. Titrate carboxyl group with sodium hydroxide standard solution, and calculate the content of amino acid nitrogen by the volume of sodium hydroxide standard solution consumed.

6.3.2 Reagents and solutions

6.3.2.1 Methyl aldehyde solution: 36% to 38% (without condensed precipitations).

6.3.2.2 Carbon dioxide free water: prepare as GB/T 603.

6.3.2.3 Sodium hydroxide standard titration solution (0.1 mol/L): prepare and calibrate as GB/T 601.

6.3.3 Apparatuses

6.3.3.1 Acidimeter or automatic potentiometric titrator: precision at 0.01 pH.

6.3.3.2 Magnetic stirrer.

6.3.3.3 Analysis balance: sensitivity quality at 0.1 mg.

6.3.4 Analysis procedures

Adjust and calibrate the acidimeter according to its instruction manual;

Pipette 10 mL of the sample into a 150 mL beaker, and add 50 mL of carbon dioxide free water. Put the magnetic stir bar into the beaker on the magnetic stirrer, start stirring, and titrate with sodium hydroxide standard titration solution (6.3.2.3). At the initial stage, the sodium hydroxide standard titration solution can be titrated quickly. When the pH value of the sample reaches 7.00, slow down the titration speed and titrate half a drop of sodium hydroxide standard titration solution each time until the pH value of the sample reaches 8.20. Record the volume (V_1) of sodium hydroxide standard titration solution (0.1 mol/L) consumed. Add 10 mL of methyl aldehyde solution (6.3.2.1), keep titrate with sodium hydroxide standard titration solution until the pH value of the sample reaches 9.20, and record the volume (V_2) of sodium hydroxide standard titration solution consumed after methyl aldehyde is added. Meanwhile, carry out the blank test, record the volumes (V_3 and V_4) of sodium hydroxide standard titration solution consumed respectively when methyl aldehyde is added or not added in the blank test.

6.3.5 Calculation

a) The content of total acid in the sample shall be calculated in accordance with Formula (1):

$$X_1 = \frac{(V_1 - V_3) \times c \times 90}{V \times 1\,000} \times 1\,000 \quad \cdots\cdots (1)$$

where:

X_1----the content of total acid in the sample, g/L;

V_1----the volume of sodium hydroxide standard titration solution consumed by sample determination, mL;

V_3----the volume of sodium hydroxide standard titration solution consumed by the blank test, mL;

c----the concentration of sodium hydroxide standard titration solution, mol/L;

90----the molar mass of lactic acid, g/mol [$M(C_3H_6O_3)=90$];

V----the volume of the sample pipetted, mL.

b) The content of amino acid nitrogen in the sample shall be calculated in accordance with Formula (2):

$$X_2 = \frac{(V_2 - V_4) \times c \times 14}{V \times 1\,000} \times 1\,000 \quad \cdots\cdots (2)$$

where:

X_2----the content of amino acid nitrogen in the sample, g/L;

V_2----the volume of sodium hydroxide standard titration solution consumed by sample determination after methyl aldehyde is added, mL;

V_4----the volume of sodium hydroxide standard titration solution consumed by the blank test after methyl aldehyde is added, mL;

c----the concentration of sodium hydroxide standard titration solution, mol/L;

14----the molar mass of nitrogen, g/mol [$M(N)=14$];

V----the volume of the sample pipetted, mL.

The obtained result shall be reported to one decimal place.

6.3.6 Precision

The absolute difference between the two independent determination results obtained under the repeatability conditions shall not exceed 5% of the mean value.

6.4 Total sugar

6.4.1 Lane and Eynon method (arbitration method)

This analytical method applies to sweet type milk wines and semi-sweet type milk wines to determine the total sugar content.

6.4.1.1 Theory

Fehling' s solution and reducing sugar react to produce cuprous oxide sediments through azeotropy. Use methylene blue as indicator, and titrate hydrolysate into boiling Fehling' s reagent. When a slight excess of reducing sugar reduce methylene blue to colorless, it is the end point of the titration, and calculate total sugar content according to the volume of hydrolysate consumed.

6.4.1.2 Reagents

6.4.1.2.1 Fehling' s solution A: weigh 69.28 g of copper sulfate ($CuSO_4 \cdot 5H_2O$) and add water to dissolve and fill up to the volume of 1000 mL.

6.4.1.2.2 Fehling' s solution B: weigh 346 g of Rochelle salt (potassium sodium tartrate) and 100 g of sodium hydroxide, dissolve with water and fill up to the volume of 1000 mL, mix well, filter and reserve for later use.

6.4.1.2.3 Glucose standard solution (2.5 g/L): take 2.5 g (accurate to 0.0001 g) of glucosum anhydricum reaching constant weight through drying at 103-105 ℃, dissolve with water and add 5 mL of concentrated hydrochloric acid, and fill up to the volume of 1000 mL with water.

6.4.1.2.4 Methylene blue indicator (10 g/L): weigh 1.0 g of methylene blue, dissolve and fill up to the volume of 100 mL with water.

6.4.1.2.5 Hydrochloric acid (6 mol/L): weigh 50 mL of concentrated hydrochloric acid and dilute with water to the volume of 100 mL.

6.4.1.2.6 Methylene blue indicator (1 g/L): weight 0.10 g of methyl red, dissolve with ethanol and dilute to the volume of 100 mL.

6.4.1.2.7 Sodium hydroxide solution (200 g/L): weight 20 g of sodium hydroxide, dissolve and dilute with water to the volume of 100 mL.

6.4.1.3 Apparatuses

6.4.1.3.1 Analytical balance: sensitive quality 0.1 mg.

6.4.1.3.2 Analytical balance: sensitive quality 0.01 g.

6.4.1.3.3 Electric stove: 300W-500W.

6.4.1.4 Analysis procedures

6.4.1.4.1 Standardization of pre-titration of Fehling' s solution

Accurately pipette 5 mL of Fehling' s solution A and 5 mL Fehling' s solution B into a 250 mL Erlenmeyer flask, add 30 mL of water, mix and place the flask on the electric oven, and heat to boiling. Drop the glucose standard solution (6.4.1.2.3) and keep it boiling until blue is about to disappear, add 2 drops of methylene blue indicator (6.4.1.2.4), continue to titrate with glucose standard solution until blue disappears which is the end point of titration. Record the volume (V) of glucose standard solution consumed.

6.4.1.4.2 Standardization of Fehling' s solution

Accurately pipette 5 mL of Fehiling' s solution A and 5 mL Frhling' s solution B into a 250 mL Erlenmeyer flask, add 30 mL of water. After blending, add glucose standard solution (6.4.1.2.3) 1 mL less than pre-titration volume (V), heat and boil it on the electric oven, add 2 drops of methylene blue indicator (6.4.1.2.4), keep boiling for 2 min, and use glucose standard solution by titration until blue disappears, which shall be considered as the end point, and record the total volume (V_1) of glucose standard solution consumed. All titration

operations shall be completed in 3 min.

The concentration of Fehling' s solution shall be calculated in accordance with Formula (3):

$$m_1 = \frac{m \times V_1}{1\,000} \quad \cdots\cdots (3)$$

where:

m_1----the mass of glucose equivalent to each 5 mL of Fehling' s solution A and B, g;

m----the mass of glucose weighed, g;

V_1----the total volume of glucose standard solution consumed by formal standardization, mL.

6.4.1.4.3 Determination of samples

Pipette 2 mL to 10 mL of samples (the total sugar content of hydrolysate is controlled at 1-2 g/L) into a 500 mL volumetric flask, add 50 mL of water and 5 mL of hydrochloric acid (6.4.1.2.5), and heat in the water bath of 68-70 ℃ for 15 min. After cooling, add 2 drops of methyl red indicator (6.4.1.2.6), neutralize with sodium hydroxide solution (6.4.1.2.7) until red disappears (approximate to neutral property), fill up with water to the volume, mix well, and filter with filter paper for later use.

During determination, use hydrolysate instead of glucose standard solution, and operation steps are the same as 6.4.1.4.2.

6.4.1.5 Calculation

The content of total sugar in the sample shall be calculated in accordance with Formula (4).

$$X = \frac{500 \times m_1}{V_2 \times V_3} \times 1\,000 \quad \cdots\cdots (4)$$

where:

X----the content of total sugar in the sample, g/L;

m_1----the mass of glucose equivalent to each 5 mL of Fehling' s solutions A and B, g;

V_2----the volume of hydrolysate consumed by titration, mL;

V_3----the volume of the sample pipetted, mL.

The obtained result shall be reported to one decimal place.

6.4.1.6 Precision

The absolute difference between two independent determination results obtained under the repeatability conditions shall not exceed 5% of the mean value.

6.4.2 Titration of potassium ferrocyanide

This analytical method applies to dry type milk wines and semi-dry milk wines to determine the total sugar content.

6.4.2.1 Theory

Fehling' s solutions react with reducing sugar through azeotropy to reduce cupric ions into cuprous ions in the alkaline solution, which complexes with potassium ferrocyanide to be yellow. With methylene blue as indicator, methylene blue is reduced to colorless by slightly excessive reducing sugar, which is considered as the end point. Then calculate the total sugar content by the volume of hydrolysate consumed.

6.4.2.2 Reagents and solutions

6.4.2.2.1 Solution A: weigh 15.0 g of cupric sulfate ($CuSO_4 \cdot 5H_2O$) and 0.05 g of methylene blue, add water to dissolve and fill up to the volume of 1000 mL, and mix well for later use.

6.4.2.2.2 Solution B: weigh 50 g of Rochelle salt ($C_4H_4KNaO_6 \cdot 4H_2O$), 54 g of sodium hydroxide, and 4 g of potassium ferrocyanide, dissolve with water and fill up to the volume of 1000 mL, mix, and reserve for later use.

6.4.2.2.3 Glucose standard solution (1 g/L): weigh 1 g (accurate to 0.0001 g) of glucosum anhydricum reaching constant weight through drying at 103-105 ℃, dissolve with water and add 5 mL of concentrated hydrochloric acid, fill up to the volume of 1000 mL with water, then mix, and reserve for later use.

6.4.2.3 Apparatuses

6.4.2.3.1 Analysis balance: sensitivity quality 0.1 mg.

6.4.2.3.2 Analysis balance: 0.01 g.

6.4.2.3.3 Electric stove: 300-500W.

6.4.2.4 Analysis procedures

6.4.2.4.1 Blank test

Accurately pipette 5 mL of each of solution A (6.4.2.2.1) and solution B (6.4.2.2.2) into a 100 mL Erlenmeyer flask, add 9 mL of glucose standard solution (6.4.2.2.3), mix well, and heat on the electric oven to boil up for 2 min, continue to titrate glucose standard solution at the rate of 4 to 5 seconds per drop until blue disappears and yellow comes up immediately, and record the total amount (V_4) of glucose standard solution consumed.

6.4.2.4.2 Sample determination

a) Pipette 2 mL to 10 mL of samples (the content of total sugar in hydrolysate shall be controlled at 1-2 g/L) into a 100 mL volumetric flask, add 30 mL of water and 5 mL of hydrochloric acid (6.4.1.2.5), heat and hydrolyze for 15 min in the water bath at 68-70 ℃. After cooling, add two drops of methyl red indicator (6.4.1.2.6), neutralize with sodium hydroxide solution (6.4.1.2.7) until red disappears (approximate to neutral property), add water to 100 mL, mix well, filter with filter paper, and reserve it as hydrolysate for later use;

b) Pre-titration: accurately pipette 5 mL of each of solution A (6.4.2.2.1) and solution B (6.4.2.2.2) and 5 mL of hydrolysate [(6.4.2.4.2a)] into a 100 mL Erlenmeyer flask, mix well, and heat on the electric stove until boiling, tirtate with glucose standard solution (6.4.2.2.3) until the end point, and record the volume of glucose standard solution consumed.

c) Titration: accurately pipette 5 mL of each of solution A (6.4.2.2.1) and solution B (6.4.2.2.2) and 5 mL of hydrolysate [(6.4.2.4.2a)] into a 100 mL Erlenmeyer flask, add glucose standard solution (6.4.2.2.3) 1.00 mL less than that for pre-titration, mix and heat on the electric stove until boiling up, and keep tirtating with glucose standard solution to the end point. Record the volume (V) of glucose standard solution consumed. When close to the end point, titration usage of glucose standard solution shall be controlled within 0.5 mL to 1.0 mL.

6.4.2.5 Calculation

The content of total sugar in the sample shall be calculated in accordance with Formula (5):

$$X = \frac{(V_0 - V) \times c \times n}{5} \times 1\,000 \quad \cdots\cdots (5)$$

where:

X----the content of total sugar in the sample, g/L;

V_0----the volume of glucose standard solution consumed by the blank test, mL;

V----the volume of glucose standard solution consumed by the sample determination, mL;

c----the concentration of glucose standard solution, g/mL;

n----the dilution factor of the sample.

The obtained result shall be reported to one decimal place.

6.4.2.6 Precision

The absolute difference between the two independent determination results obtained under the repeatability conditions shall not exceed 5% of the mean value.

6.5 Total esters

6.5.1 Indicator method

6.5.1.1 Theory

First neutralize free acid in the sample with alkaline, then accurately add a ration of alkaline, heating reflux to saponify the esters. Calculate the content of total esters by the volume of alkaline consumed.

6.5.1.2 Reagents and solutions

6.5.1.2.1 Sodium hydroxide standard titration solution[c(NaOH)=0.1 mol/L]: prepare and standardized as specified in GB/T 601.

6.5.1.2.2 Sodium hydroxide standard solution [c (NaOH)=3.5 mol/L]: prepare as specified in GB/T 601

6.5.1.2.3 Sulfuric acid standard titration solution [c $(1/2H_2SO_4)$=0.1 mol/L]: prepare and standardized as specified in GB/T 601.

6.5.1.2.4 Ethanol (ester-free) solution [40% (volume fraction): measure out 600 mL of 95% ethanol into the 1000 mL reflux flask, add 5 mL of sodium hydroxide standard solution (6.5.1.2.2), heating reflux to saponify for 1h. Then transfer it to distillation flask to redistill, and prepare 40% ethanol solution.

6.5.1.2.5 Phenolphthalein indicator (10 g/L): prepare as specified in GB/T 603.

6.5.1.3 Apparatuses

6.5.1.3.1 All-glass distiller: 500 mL.

6.5.1.3.2 All-glass reflux apparatus: 1000 mL reflux flask, and 250 mL reflux flask (the condenser tube is not shorter than 45 cm).

6.5.1.3.3 Alkali burette: 25 mL or 50 mL.

6.5.1.3.4 Acid burette: 25 mL or 50 mL.

6.5.1.4 Analysis procedures

Pipette 50.00 mL of the sample into the 250 mL reflux flask, add two drops of phenolphthalein indicator (6.5.1.2.5), titrate with sodium hydroxide standard titration solution (6.5.1.2.1) until the sample turns pinkish red (over capacity is not allowed), and record the volume (or used as the total acid for calculation) of the sodium hydroxide standard titration solution consumed. Accurately add 25.00 mL (if the sample contains high esters, add 50 mL) of sodium hydroxide standard titration solution (6.5.1.2.1), mix well, add a few anti-bumping granules or glass beads, connect with the condenser (temperature of cooling water is better to be lower than 15 ℃), accurately reflux for 30 min on the boiling water bath, remove and cool down. Titrate with sulfuric acid standard titration solution (6.5.1.2.3) and stop until light red just disappears, and record the volume of sulfuric acid standard titration solution consumed. In the meantime, pipette 50.00 mL of ethanol (ester free) solution (6.5.1.2.4) and operate as the above steps to carry out a blank test, and record the volume of the sulfuric acid standard titration solution consumed.

6.5.1.5 Calculation of result

a) The content of ester in the sample shall be calculated in accordance with Formula (6).

$$X = \frac{c \times (V_0 - V_1) \times 88 \times 1\,000}{50.0 \times 1\,000} \quad \cdots\cdots (6)$$

where:

X----the mass fraction of total ester in the sample (expressed as ethyl acetate), g/L;

c----the concentration of the sulfuric acid standard titration solution with the actual measurement, mol/L;

V_0----the volume of sulfuric acid standard titration solution consumed by the blank test, mL;

V_1----the volume of sulfuric acid standard titration solution consumed by sample, mL;

88----the molar mass of ethyl acetate, g/mol [M($C_4H_8O_2$) =88];

50.0----the volume of the sample pipetted, mL.

The obtained result shall be reported to two decimal places.

6.5.1.6 Precision

The absolute difference between the two independent determination results obtained under the repeatability conditions shall not exceed 2% of the mean value.

6.5.2 Potentiometric titration method

6.5.2.1 Theory

First neutralize free acid in the sample with alkaline, then accurately add a ration of alkaline, heating reflux to saponify. Neutralization titration with sulfuric acid solution, and indicate the end point with pH changes when titration gets close to the equivalent point

6.5.2.2 Reagents and solutions

The same as 6.5.1.2.

6.5.2.3 Apparatuses

6.5.2.3.1 Potentiometric titrator (or acidimeter): precision at ±0.02 pH.

6.5.2.3.2 The same as 6.5.1.3.1.

6.5.2.3.3 The same as 6.5.1.3.2.

6.5.2.3.4 The same as 6.5.1.3.3.

6.5.2.3.5 The same as 6.5.1.3.4.

6.5.2.4 Analysis procedures

Install and adjust the apparatus according to its instruction manual and calibrate and position according to the liquid temperature.

Pipette 50.00 mL of sample into the 250 mL reflux flask, add two drops of phenolphthalein indicator (6.5.1.2.5), titrate with sodium hydroxide standard titration solution (6.5.1.2.1) until the sample become pinkish red (over capacity is not allowed), and record the volume (or used as the total acid for calculation) of the sodium hydroxide standard titration solution consumed. Accurately add 25.00 mL (if the sample contains high esters, add 50 mL) of sodium hydroxide standard titration solution (6.5.1.2.1), mix well, add a few anti-bumping granules or glass beads, connect with the condenser (temperature of cooling water is better to be lower than 15 ℃), accurately reflux for 30 min on the boiling water bath, remove and cool down. Pour the sample solution into a 100 mL beaker, rinse the reflux flask several times with 10 mL of water, and pour the rinsing liquid into the beaker. Insert the electrode and put a stir bar into the beaker, then put the beaker on the magnetic stirrer, and start stirring. At the initial, the sulfuric acid standard titration solution (6.5.1.2.3) can be titrated quickly. When the pH value of the sample reaches 9.00, slow down the titration speed and titrate half a drop of standard titration solution each time until the pH value of the sample reaches 8.70.

Record the volume (V_{10}) of sulfuric acid standard titration solution consumed. Meanwhile, carry out the blank test as the above steps with 50 mL of ethanol (ester-free) solution (6.5.1.2.4), and record the volume of sulfuric acid standard titration solution consumed.

6.5.2.5 Calculation of result

The same as 6.5.1.5.

6.5.2.6 Precision

The same as 6.5.1.6.

6.6 Methanol

Inspect as specified in GB/T 5009.48.

6.7 Net quantity

Inspect as specified in JJF 1070.

7. Inspection rules

7.1 Sampling

7.1.1 Take samples as specified in Table 5, one bottle from each box randomly. if the net quantity of a unit package is smaller than 500 mL and the amount of total sampling is smaller than 1500 mL, the sampling amount should increase proportionally.

Table 5 Sampling

Batch range/box	Sample quantity/box	Unit sample quantity/bottle
＜50	3	3
50 to 1200	5	2
1201 to 35000	8	1
≥35001	13	1

7.1.2 Once taken, the samples shall be immediately attached with labels indicating their name, category and specifications, quantity, name of the manufacturer, sampling time and place, and sampler. Divide the sample into two. One is sealed and stored for 2 months for future use. Another sample shall be immediately sent to laboratories for the inspection of the sensory, physical and chemical, and hygienic indexes

7.2 Inspection classification

7.2.1 Delivery inspection

7.2.1.1 Before the product leaves the factory, the quality supervision and inspection department of the manufacturer shall inspect products batch by batch as specified in this standard. Products shall not be delivered until being qualified inspection and issued with qualification certificate.

7.2.1.2 Inspection items for delivery

Fermented milk wines----sensory requirements, alcohol content, total acid, total sugar, amino acid nitrogen, aerobic bacterial count, net quantity and label.

Distilled milk wines----sensory requirements, alcohol content, total acid, total esters, methanol, net quantity and label.

7.2.2 Type inspection

7.2.2.1 Generally, type inspection shall be carried out once a year. In any of the following cases, type inspection shall also be carried out:

a) Any change in equipment or resumed production after suspended for more than half-a-year;

b) Significant difference between delivery inspection and last type inspection results;

c) Any major change in raw and auxiliary materials.

7.2.2.2 Type inspection items: all items specified from 5.2 to 5.5.

7.3 Judgment rules

7.3.1 If all items of the inspected sample are qualified, the whole batch of products shall be judged qualified

7.3.2 If any one of microbiological indicators is unsatisfied, the whole batch shall be judged unqualified.

7.3.3 If any other inspection item has one (or two) item(s) which do not comply with the requirements, double-size sample shall be taken from the same batch of products for re-inspection, and the re-inspection result shall prevail; if one item still fails to comply with the requirements, the whole batch shall be judged as unqualified.

8. Sign, packaging, transport and storage

8.1 Label sign

8.1.1 Product labels shall comply with the provisions in GB 10344 and also shall have product type specified. For fermented milk wines, sugar content shall be labeled.

8.1.2 Packaging-pictorial marking for handling of goods sign shall comply with the provisions in GB/T 191.

8.2 Packaging

Packaging materials shall comply with the requirements in food safety. Packaging containers shall be sealed well and no leakage

8.3 Transport

8.3.1 Transport tools shall be kept clean and sanitary. Products are not allowed to transport with goods which are toxic, harmful, corrosive and volatile or have peculiar smell.

8.3.2 Products shall be handled with care and avoid throwing, collision and squeezing.

8.3.3 Products shall be protected from sun exposure, rain and humidity.

8.4 Storage

8.4.1 Products shall not be stored with goods which are toxic, harmful, corrosive, and volatile or have peculiar smell.

8.4.2 Products shall be warehoused in a cool, dry and well-ventilated place; products shall be kept clean and avoid storage in the open air and exposure to sunlight and rain; packaging boxes shall not directly contact with the humid ground, and shall keep away from the heat source.

8.4.3 8.4.3 The proper temperature of the fermented milk wine products should range between 5 ℃ and 25 ℃ during storage.

Annex
(normative)
Alcohol meter at 20 ℃

Table A.1 Conversion between alcohol content of alcohol meter and temperature at 20 ℃

Solution temperature/℃	Alcohol meter									
	1	2	3	4	5	6	7	8	9	10
5	2.0	3.0	4.0	5.1	6.2	73	8.4	9.6	10.7	11.8
6	2.0	3.0	4.0	5.1	6.2	73	8.4	9.5	10.6	11.8
7	1.9	3.0	4.0	5.1	6.1	72	8.4	9.5	10.6	11.7
8	1.9	2.9	4.0	5.0	6.1	72	8.3	9.4	10.5	11.6
9	1.9	2.9	4.0	5.0	6.0	71	8.2	9.3	10.4	11.5
10	1.8	2.9	3.9	5.0	6.0	71	8.2	9.3	10.3	11.4
11	1.8	2.8	3.9	4.9	6.0	70	8.1	9.2	10.2	11.3
12	1.7	2.8	3.8	4.8	5.9	69	8.0	9.1	10.1	11.2
13	1.7	2.7	3.7	4.8	5.8	68	7.9	9.0	10.0	11.1
14	1.6	2.6	3.6	4.7	5.7	67	7.8	8.9	9.9	11.0
15	1.5	2.5	3.5	4.6	5.6	66	7.7	8.8	9.8	10.8
16	1.4	2.4	3.4	4.5	5.5	65	7.6	8.6	9.6	10.7
17	1.3	2.3	3.3	4.4	5.4	64	7.4	8.5	9.5	10.5
18	1.2	2.2	3.2	4.2	5.3	63	7.3	8.3	9.3	10.4
19	1.1	2.1	3.1	4.1	5.1	61	7.2	8.2	9.2	10.2
20	1.0	2.0	3.0	4.0	5.0	60	7.0	8.0	9.0	10.0
21	0.9	1.9	2.9	3.9	4.8	58	6.8	7.8	8.8	9.8
22	0.7	1.7	2.7	3.7	4.7	57	6.7	7.7	8.6	9.6
23	0.6	1.6	2.6	3.6	4.6	55	6.5	7.5	8.4	9.4
24	0.4	1.4	2.4	3.4	4.4	54	6.3	7.3	8.3	9.2
25	0.3	1.3	2.3	3.2	4.2	52	6.2	7.1	8.1	9.0
26	0.1	1.1	2.1	3.1	4.0	50	6.0	6.9	7.9	8.8
27	0.0	1.0	1.9	2.9	3.9	48	5.8	6.7	7.7	8.6
28	—	0.8	1.8	2.7	3.7	46	5.6	6.5	7.5	8.4
29	—	0.6	1.6	2.5	3.5	44	5.4	6.3	7.2	8.2
30	—	0.4	1.4	2.4	3.3	4.2	5.2	6.1	7.0	7.9
31	—	0.2	1.2	2.2	3.1	4.0	5.0	5.9	6.8	7.7

Annex A)
(normative)
The table of conversion between concentration and temperature

(Range of alcohol content: 1%vol to 21%vol, interval:1%vol) Unit:%vol

Indicated value/%vol										
11	12	13	14	15	16	17	18	19	20	21
13.0	14. 3	15. 6	16.8	18.2	19.5	20.9	22.2	23.4	24. 7	26.0
13.0	14.2	15.4	16.7	18.0	19. 3	20.6	21.9	23. 2	24.4	25.6
12. 9	14.1	15.3	16.5	17.8	19. 1	20.4	21.6	22.8	24.1	25. 3
12.8	14.0	15.2	16.4	17. 6	18.9	20. 1	21.3	22.6	23.8	24.9
12.7	13.8	15.0	16. 2	17.4	18.6	19.9	21.1	22.3	23.4	24.6
12.6	13. 7	14. 9	16. 0	17.2	18.4	19.6	20.8	22.0	23.1	24.3
12.4	13.6	14.7	15.8	17. 0	18. 2	19.4	20.5	21.7	22.8	23.9
12.3	13.4	14. 5	15. 7	16.8	18. 0	19.1	20.2	21.4	22.5	23.6
12.2	13. 2	14. 4	15.5	16. 6	17. 7	18.8	20.0	21.1	22.2	23.3
12.0	13. 1	14.2	15. 3	16.4	17.5	18. 6	19.7	20.8	21.9	23.0
11.9	12.9	14.0	15.1	16.2	17.2	18.3	19.4	20. 5	21.6	22. 6
11.7	12.8	13.8	14.9	15.9	17.0	18.1	19.2	20.2	21. 2	22.3
11.5	12. 6	13.6	14.7	15. 7	16.8	17.8	18.9	19.8	20. 9	22.0
11.4	12.4	13.4	14. 4	15.5	16. 5	17.6	18.6	19. 6	20.6	21.6
11.2	12.2	13. 2	14.2	15.2	16. 3	17.3	18.3	19. 3	20. 3	21.3
11.0	12.0	13. 0	14.0	15.0	16. 0	17.0	18.0	19.0	20.0	21.0
10.8	11.8	12.8	13.8	14.8	15.7	16.7	17. 7	18.7	19.7	20.7
10.6	11.6	12.6	13. 6	14.5	15.5	16.5	17.4	18.4	19.4	20.4
10.4	11.4	12. 3	13.3	14.3	15. 2	16.2	17.1	18.1	19.0	20. 0
10.2	11.2	12. 1	13. 1	14.0	15.0	15.9	16. 9	17.8	18. 7	19.7
10.0	10.9	11. 9	12.8	13. 8	14.7	15. 6	16.6	17.5	18.4	19.4
9.8	10. 7	11.7	12. 6	13.5	14.4	15.4	16.3	17.2	18.1	19.0
9. 5	10.5	11.4	12. 3	13.2	14.2	15.1	16.0	16.9	17.8	18. 7
9.3	10. 3	11. 2	12.1	13.0	13. 9	14.8	15.7	16.6	17.5	18.4
9.1	10.0	10.9	11.8	12. 7	13.6	14.5	15.4	16.3	17.2	18.0
8.9	9.8	10.7	11.6	12.5	13.4	14.2	15. 1	16.0	16.8	17.7
8.7	9. 6	10. 5	11.4	12.2	13. 1	13.9	14.8	15. 7	16.5	17.4

Annex
(normative)
Alcohol meter at 20℃

Table B.1 Conversion between temperature (t) of alcohol meter and alcohol content (ALC)

Alcohol content (%vol)	Alcohol meter											
	10	10.5	11	11. 5	12	12. 5	13	13. 5	14	14. 5	15	15.5
18	20. 80	20. 66	20, 52	20.38	20.25	20.11	19.97	19.83	19.69	19.55	19.41	19.27
18. 1	20. 92	20.78	20. 64	20.50	20. 36	20. 22	20.08	19.94	19.80	19. 66	19.52	19.38
18.2	21.04	20. 90	20.76	20.61	20.47	20.33	20. 19	20.05	19.91	19. 77	19. 62	19. 48
18.3	21.16	21.01	20.87	20. 73	20.59	20. 44	20. 30	20.16	20.02	19. 88	19.73	19. 59
18. 4	21.28	21. 13	20.99	20.84	20. 70	20. 56	20.41	20. 27	20. 13	19. 98	19.84	19. 70
18.5	21. 39	21.25	21. 10	20.96	20.81	20. 67	20.53	20.38	20.24	20. 09	19. 95	19. 80
18.6	21.51	21. 37	21.22	21.07	20. 93	20. 78	20. 64	20.49	20.35	20. 20	20.06	19. 91
18.7	21. 63	21.48	21.34	21. 19	21.04	20. 90	20. 75	20.60	20.46	20.31	20. 16	20.02
18.8	21.75	21. 60	21.45	21. 30	21. 16	21.01	20.86	20.71	20.57	20.42	20.27	20. 13
18. 9	21. 87	21.72	21.57	21.42	21.27	21. 12	20. 97	20.82	20.68	20. 53	20.38	20. 23
19	21.99	21.83	21.68	21.53	21.38	21.23	21.08	20.94	20.79	20.64	20. 49	20. 34
19. 1	22. 10	21. 95	21.80	21. 65	21. 50	21.35	21.20	21.05	20. 90	20. 75	20. 60	20. 45
19.2	22. 22	22.07	21.92	21.76	21.61	21.46	21. 31	21.16	21.01	20.85	20. 70	20. 55
19.3	22. 34	22.18	22.03	21.88	21.72	21. 57	21.42	21.27	21.12	20.96	20.81	20. 66
19. 4	22. 46	22. 30	22. 15	21. 99	21.84	21. 68	21.53	21.38	21.22	21.07	20. 92	20. 77
19. 5	22.57	22. 42	22.26	22. 11	21. 95	21.80	21.64	21.49	21.33	21. 18	21.03	20.87
19. 6	22. 69	22. 53	22.38	22.22	22.06	21. 91	21.75	21.60	21.44	21.29	21. 14	20. 98
19.7	22. 81	22.65	22.49	22.33	22.18	22. 02	21.86	21.71	21.55	21.40	21.24	21.09
19. 8	*22.* 93	22.77	22.61	22.45	22.29	22. 13	21. 98	21.82	21.66	21.51	21.35	21. 19
19. 9	23.04	22. 88	22.72	22.56	22.40	22. 25	22.09	21.93	21.77	21. 61	21.46	21. 30
20	23.16	23.00	22.84	22.68	22. 52	22. 36	22. 20	22.04	21.88	21.72	21. 57	21.41
20. 1	23.28	23. 12	22.95	22.79	22. 63	22.47	22. 31	22. 15	21.99	21. 83	21. 67	21.52
20.2	23.39	23. 23	23.07	22. 91	22. 74	22. 58	22.42	22.26	22. 10	21. 94	21. 78	21. 62
20. 3	23.51	23.35	23.18	23.02	22. 86	22. 69	22.53	22.37	22.21	22.05	21. 89	21. 73
20.4	23.63	23.46	23. 30	23. 13	22.97	22.81	22. 64	22.48	22.32	22. 16	22.00	21.83
20.5	23. 74	23.58	23.41	23.25	23.08	22. 92	22. 75	22. 59	22.43	22. 26	22. 10	21. 94
20.6	23. 86	23. 69	23.53	23.36	23. 19	23. 03	22.86	22.70	22. 54	22.37	22. 21	22. 05
20. 7	23. 98	23.81	23.64	23.47	23.31	23. 14	22. 97	22.81	22.65	22.48	22. 32	22.15
20. 8	24. 09	23. 92	23. 75	23.59	23.42	23. 25	23.09	22. 92	22.75	22. 59	22.42	22.26
20. 9	24. 21	24.04	23.87	23. 70	23.53	23. 36	23.20	23.03	22. 86	22. 70	22.53	22.37
21	24. 33	24. 15	23.98	23.81	23. 64	23.47	23.31	23.14	22. 97	22.81	22. 64	22.47
21. 1	24.44	24. 27	24. 10	23.93	23.76	23. 59	23.42	23.25	23.08	22.91	22.75	22.58
21. 2	24. 56	24. 38	24.21	24.04	23.87	23. 70	23.53	23. 36	23. 19	23. 02	22.85	22. 69
21. 3	24. 67	24. 50	24.32	24.15	23. 98	23.81	23.64	23.47	23.30	23. 13	*22.* 96	22. 79
21.4	24.79	24. 61	24.44	24.26	24.09	23. 92	23.75	23.58	23.41	23.24	23.07	22. 90
21.5	24. 90	24, 73	24.55	24. 38	24. 20	24. 03	23. 86	23.69	23. 51	23. 34	23. 17	23.01
21. 6	25. 02	24. 84	24. 66	24.49	24.31	24. 14	23. 97	23.79	23.62	23.45	23.28	23. 11
21.7	25. 13	24.95	24.78	24.60	24.43	24. 25	24.08	*23.* 90	23.73	23. 56	23.39	23. 22
21.8	25. 25	25.07	24.89	24.71	24. 54	24. 36	24. 19	24.01	23. 84	23. 67	23. 49	23. 32
21. 9	25. 36	25. 18	25.00	24.83	24. 65	24.47	24. 30	24. 12	23.95	23.77	23. 60	23. 43

Annex B)

The table of conversion between concentration and temperature

(Temperature range: 10-22℃, interval: 0.5℃) Unit: %vol

Temperature/℃												
16	16.5	17	17. 5	18	18.5	19	19.5	20	20.5	21	21.5	22
19.13	18.99	18.85	18.71	18.57	18.42	18.28	18. 14	18.00	17.86	17.72	17.57	17.43
19.23	19.09	18. 95	18.81	18.67	18.53	18. 39	18.24	18. 10	17.93	17.81	17.67	17.53
19.34	19. 20	19. 06	18.91	18. 77	18.63	18. 49	18. 34	18.20	18. 06	17. 91	17.77	17. 62
19.45	19.30	19. 16	19.02	18.88	18. 73	18.59	18.44	18.30	18. 16	18.01	17.87	17.72
19.55	19.41	17. 27	19.12	18.98	18. 83	18.69	18.54	18.40	18.26	18.11	17.96	17.82
19. 66	19.52	19. 37	19.23	19.08	18. 94	18. 79	18.65	18.50	18.35	18. 21	18.06	17.92
19. 77	19.62	19.48	19.33	19.18	19.04	18.89	18. 75	18.60	18.45	18. 31	18. 16	18.01
19.87	19.73	19.58	19.43	19.29	19.14	18.99	18.85	18. 70	18.55	18.41	18.26	18.11
19.98	19.83	19. 68	19.54	19.39	19. 24	19. 10	18.95	18.80	18. 65	18. 50	18. 36	18.21
20. 08	19. 94	19.79	19. 64	19.49	19. 34	19. 20	19. 05	18.90	18. 75	18. 60	18. 45	18. 31
20. 19	20. 04	19.89	19.74	19. 60	19.45	19. 30	19.15	19.00	18.85	18. 70	18.55	18.40
20. 30	20. 15	20.00	19.85	19.70	19.55	19.40	19.25	19.10	18.95	18. 80	18.65	18.50
20. 40	20. 25	20. 10	19. 95	19.80	19. 65	19.50	19. 35	19.20	19.05	18.90	18. 75	18. 60
20.51	20. 36	20.21	20.06	19. 90	19.75	19.60	19.45	19.30	19.15	19.00	18.85	18.69
20. 62	20.46	20. 31	20.16	20.01	19.86	19.70	19. 55	19.40	19.25	19. 10	18.94	18.79
20. 72	20. 57	20.42	20. 26	20. 11	19.96	19. 81	19. 65	19.50	19. 35	19. 19	19.04	18.89
20. 83	20. 67	20. 52	20. 37	20.21	20.06	19.91	19. 75	19. 60	19.45	19. 29	19.14	18. 99
20. 93	20. 78	20. 62	20.47	20.32	20. 16	20.01	19.85	19.70	19.55	19. 39	19.24	19.08
21.04	20. 88	20. 73	20.57	20.42	20.26	20. 11	19.95	19.80	19.65	19.49	19.34	19.18
21.25	20.99	20. 83	20.68	20.52	20.37	20.21	20.06	19.90	19. 74	19. 59	19.43	19.28
21.25	21.09	20.94	20.78	20.62	20.47	20. 31	20. 16	20.00	19.84	19. 69	19.53	19.38
21.36	21.20	21.04	20.88	20.73	20.57	20.41	20.26	20.10	19.94	19. 79	19.63	19.47
21.46	21.30	21.15	20.99	20.83	20. 67	20.51	20. 36	20. 20	20.04	19.89	19.73	19.57
21.57	21.41	21.25	21. 09	20.93	20. 77	20. 62	20.46	20.30	20. 14	19. 98	19.83	19.67
21.67	21.51	21.35	21.20	21.04	20.88	20. 72	20. 56	20.40	20.24	20. 08	19.92	19. 77
21.78	21. 62	21.46	21.30	21. 14	20. 98	20.82	20.66	20.50	20. 34	20.18	20.02	19.86
21.89	21.72	21. 56	21.40	21.24	21.08	20.92	20.76	20.60	20. 44	20.28	20. 12	19.96
21. 99	21.83	21.67	21.51	21.34	21.18	21.02	20.86	20. 70	20. 54	20. 38	20.22	20. 06
22.10	21.93	21.77	21.61	21.45	21.28	21.12	20. 96	20.80	20. 64	20. 48	20.32	20.16
22. 20	22.04	21.88	21.71	21.55	21. 39	21.22	21.06	20.90	20. 74	20.58	20.41	20.25
22. 31	22.14	21. 98	21.82	21. 65	21.49	21. 33	21. 16	21.00	20. 84	20. 68	20. 51	20. 35
22. 41	22. 25	22.08	21.92	21.75	21.59	21.43	21.26	21.10	20. 94	20. 77	20.61	20.45
22. 52	22. 35	22.19	22.02	21.86	21. 69	21. 53	21.36	21.20	21.04	20.87	20. 71	20. 55
22. 63	22.46	22.29	22.13	21.96	21.79	21. 63	21. 46	21. 30	21. 14	20. 97	20.81	20. 64
22. 73	22. 56	22.40	22.23	22.06	21. 90	21.73	21. 57	21.40	21.23	21.07	20.91	20. 74
22.84	22. 67	22. 50	22. 33	22.17	22.00	21.83	21. 67	21.50	21.33	21. 17	21.00	20. 84
22. 94	22.77	22. 60	22.44	22.27	22.10	21. 93	21. 77	21.60	21.43	21.27	21.10	20. 94
23.05	22. 88	22.71	22.54	22. 37	22. 20	22. 03	21.87	21.70	21. 53	21. 37	21.20	21.03
23. 15	22.98	22.81	22.64	22. 47	22.30	22. 14	21. 97	21.80	21.63	21.47	21.30	21.13
23.26	23.09	22.92	22.75	22.58	22.41	22.24	22. 07	21.90	21. 73	21.56	21.40	21.23

Table B.1

Alcohol content/(%vol)	Alcohol meter											
	10	10.5	11	11.5	12	12.5	13	13.5	14	14.5	15	15.5
22	25.48	25.30	25.12	24.94	24.76	24.58	24.41	24.23	24.06	23.88	23.71	23.54
22.1	25.59	25.41	25.23	25.05	24.87	24.69	24.52	24.34	24.16	23.99	23.81	23.64
22.2	25.70	25.52	25.34	25.16	24.98	24.80	24.62	24.45	24.27	24.10	23.92	23.75
22.3	25.82	25.64	25.45	25.27	25.09	24.91	24.73	24.56	24.38	24.20	24.03	23.85
22.4	25.93	25.75	25.57	25.38	25.20	25.02	24.84	24.67	24.49	24.31	24.13	23.96
22.5	26.05	25.86	25.68	25.50	25.31	25.13	24.95	24.77	24.60	24.42	24.24	24.06
22.6	26.16	25.97	25.79	25.61	25.42	25.24	25.06	24.88	24.70	24.52	24.35	24.17
22.7	26.27	26.09	25.90	25.72	25.53	25.35	25.17	24.99	24.81	24.63	24.45	24.28
22.8	26.39	26.20	26.01	25.83	25.64	25.46	25.28	25.10	24.92	24.74	24.56	24.38
22.9	26.50	26.31	26.12	25.94	25.75	25.57	25.39	25.21	25.03	24.84	24.67	24.49
23	26.61	26.42	26.24	26.05	25.86	25.68	25.50	25.31	25.13	24.95	24.77	24.59
23.1	26.72	26.53	26.35	26.16	25.97	25.79	25.61	25.42	25.24	25.06	24.88	24.70
23.2	26.84	26.65	26.46	26.27	26.08	25.90	25.71	25.53	25.35	25.16	24.98	24.80
23.3	26.95	26.76	26.57	26.38	26.19	26.01	25.82	25.64	25.45	25.27	25.09	24.91
23.4	27.06	26.87	26.68	26.49	26.30	26.12	25.93	25.75	25.56	25.38	25.19	25.01
23.5	27.17	26.98	26.79	26.60	26.41	26.23	26.04	25.85	25.67	25.48	25.30	25.12
23.6	27.28	27.09	26.90	26.71	26.52	26.33	26.15	25.96	25.77	25.59	25.41	25.22
23.7	27.40	27.20	27.01	26.82	26.63	26.44	26.25	26.07	25.88	25.70	25.51	25.33
23.8	27.51	27.31	27.12	26.93	26.74	26.55	26.36	26.17	25.99	25.80	25.62	25.43
23.9	27.62	27.42	27.23	27.04	26.85	26.66	26.47	26.28	26.09	25.91	25.72	25.54
24	27.73	27.54	27.34	27.15	26.96	26.77	26.58	26.39	26.20	26.01	25.83	25.64
24.1	27.84	27.65	27.45	27.26	27.07	26.88	26.69	26.50	26.31	26.12	25.93	25.75
24.2	27.95	27.76	27.56	27.37	27.17	26.98	26.79	26.60	26.41	26.23	26.04	25.85
24.3	28.06	27.87	27.67	27.48	27.28	27.09	26.90	26.71	26.52	26.33	26.14	25.96
24.4	28.17	27.98	27.78	27.59	27.39	27.20	27.01	26.82	26.63	26.44	26.25	26.06
24.5	28.28	28.09	27.89	27.69	27.50	27.31	27.11	26.92	26.73	26.54	26.35	26.17
24.6	28.39	28.19	28.00	27.80	27.61	27.41	27.22	27.03	26.84	26.65	26.46	26.27
24.7	28.50	28.30	28.11	27.91	27.72	27.52	27.33	27.14	26.94	26.75	26.56	26.37
24.8	28.61	28.41	28.22	28.02	27.82	27.63	27.44	27.24	27.05	26.86	26.67	26.48
24.9	28.72	28.52	*28.32*	28.13	27.93	27.74	27.54	27.35	27.16	26.96	26.77	26.58
25	28.83	28.63	28.43	28.24	28.04	27.84	27.65	27.45	*27.26*	27.07	26.88	26.69
25.1	28.94	28.74	28.54	28.34	28.15	27.95	27.75	27.56	27.37	27.17	26.98	26.79
25.2	29.05	28.85	28.65	28.45	28.25	28.06	27.86	27.67	27.47	27.28	27.09	26.90
25.3	29.16	28.96	28.76	28.56	28.36	28.16	27.97	27.77	27.58	27.38	27.19	27.00
25.4	29.27	29.07	28.86	28.67	28.47	28.27	28.07	27.88	27.68	27.49	27.30	27.10
25.5	29.37	29.17	28.97	28.77	28.57	28.38	28.18	27.98	27.79	27.59	27.40	27.21
25.6	29.48	29.28	29.08	28.88	28.68	28.48	28.29	28.09	27.89	27.70	27.50	27.31
25.7	29.59	29.39	29.19	28.99	28.79	28.59	28.39	28.19	28.00	27.80	27.61	27.42
25.8	29.70	29.50	29.29	29.09	28.89	28.70	28.50	*28.30*	28.10	27.91	27.71	27.52
25.9	29.81	29.60	29.40	29.20	29.00	28.80	28.60	28.41	28.21	28.01	27.82	27.62
26	29.91	29.71	29.51	29.31	29.11	28.91	28.71	28.51	28.31	28.12	27.92	27.73
26.1	30.02	29.82	29.62	29.41	29.21	29.01	28.81	28.62	28.42	28.22	28.03	27.83
26.2	30.13	29.93	29.72	29.52	29.32	29.12	28.92	28.72	28.52	28.33	28.13	*27.93*
26.3	30.24	30.03	29.83	29.63	29.43	29.22	29.02	28.83	28.63	28.43	28.23	28.04
26.4	30.34	30.14	29.94	29.73	29.53	29.33	29.13	28.93	28.73	28.53	28.34	28.14

(Cont' d) Unit: %vol

Temperature/℃												
16	16.5	17	17.5	18	18.5	19	19.5	20	20.5	21	21.5	22
23.36	23.19	23.02	22.85	22.68	22.51	22.34	22.17	22.00	21.83	21.66	21.49	21.33
23.47	23.30	23.12	22.95	22.78	22.61	22.44	22.27	22.10	21.93	21.76	21.59	21.42
23.57	23.40	23.23	23.06	22.88	22.71	22.54	22.37	22.20	22.03	21.86	21.69	21.52
23.68	23.50	23.33	23.16	22.99	22.81	22.64	22.47	22.30	22.13	21.96	21.79	21.62
23.78	23.61	23.43	23.26	23.09	22.92	22.74	22.57	22.40	22.23	22.06	21.89	21.72
23.89	23.71	23.54	23.36	23.19	23.02	22.84	22.67	22.50	22.33	22.16	21.99	21.81
23.99	23.82	23.64	23.47	23.29	23.12	22.95	22.77	22.60	22.43	22.26	22.08	21.91
24.10	23.92	23.75	23.57	23.40	23.22	23.05	22.87	22.70	22.53	22.35	22.18	22.01
24.20	24.03	23.85	23.67	23.50	23.32	23.15	22.97	22.80	22.63	22.45	22.28	22.11
24.31	24.13	23.95	23.78	23.60	23.42	23.25	23.07	22.90	22.73	22.55	22.38	22.21
24.41	24.23	24.06	23.88	23.70	23.53	23.35	23.17	23.00	22.83	22.65	22.48	22.30
24.52	24.34	24.16	23.98	23.80	23.63	23.45	23.28	23.10	22.92	22.75	22.58	22.40
24.62	24.44	24.26	24.08	23.91	23.73	23.55	23.38	23.20	23.02	22.85	22.67	22.50
24.73	24.55	24.37	24.19	24.01	23.83	23.65	23.48	23.30	23.12	22.95	22.77	22.60
24.83	24.65	24.47	24.29	24.11	23.93	23.75	23.58	23.40	23.22	23.05	22.87	22.70
24.94	24.75	24.57	24.39	24.21	24.03	23.86	23.68	23.50	23.32	23.15	22.97	22.79
25.04	24.86	24.68	24.50	24.32	24.14	23.96	23.78	23.60	23.42	23.24	23.07	22.89
25.14	24.96	24.78	24.60	24.42	24.24	24.06	23.88	23.70	23.52	23.34	23.17	22.99
25.25	25.07	24.88	24.70	24.52	24.34	24.16	23.98	23.80	23.62	23.44	23.26	23.09
25.35	25.17	24.99	24.80	24.62	24.44	24.26	24.08	23.90	23.72	23.54	23.36	23.18
25.46	25.27	25.09	24.91	24.72	24.54	24.36	24.18	24.00	23.82	23.64	23.46	23.28
25.56	25.38	25.19	25.01	24.83	24.64	24.46	24.28	24.10	23.92	23.74	23.56	23.38
25.67	25.48	25.30	25.11	24.93	24.75	24.56	24.38	24.20	24.02	23.84	23.66	23.48
25.77	25.58	25.40	25.21	25.03	24.85	24.66	24.48	24.30	24.12	23.94	23.76	23.58
25.87	25.69	25.50	25.32	25.13	24.95	24.77	24.58	24.40	24.22	24.04	23.86	23.67
25.98	25.79	25.61	25.42	25.23	25.05	24.87	24.68	24.50	24.32	24.14	23.95	23.77
26.08	25.89	25.71	25.52	25.34	25.15	24.97	24.78	24.60	24.42	24.23	24.05	23.87
26.19	26.00	25.81	25.62	25.44	25.25	25.07	24.88	24.70	24.52	24.33	24.15	23.97
26.29	26.10	25.91	25.73	25.54	25.35	25.17	24.98	24.80	24.62	24.43	24.25	24.07
26.39	26.20	26.02	25.83	25.64	25.46	25.27	25.08	24.90	24.72	24.53	24.35	24.17
26.50	26.31	26.12	25.93	25.74	25.56	25.37	25.19	25.00	24.82	24.63	24.45	24.26
26.60	26.41	26.22	26.03	25.85	25.66	25.47	25.29	25.10	24.91	24.73	24.55	24.36
26.70	26.51	26.32	26.14	25.95	25.76	25.57	25.39	25.20	25.01	24.83	24.64	24.46
26.81	26.62	26.43	26.24	26.05	25.86	25.67	25.49	25.30	25.11	24.93	24.74	24.56
26.91	26.72	26.53	26.34	26.15	25.96	25.77	25.59	25.40	25.21	25.03	24.84	24.66
27.02	26.82	26.63	26.44	26.25	26.06	25.88	25.69	25.50	25.31	25.13	24.94	24.75
27.12	26.93	26.74	26.54	26.35	26.17	25.98	25.79	25.60	25.41	25.23	25.04	24.85
27.22	27.03	26.84	26.65	26.46	26.27	26.08	25.89	25.70	25.51	25.32	25.14	24.95
27.33	27.13	26.94	26.75	26.56	26.37	26.18	25.99	25.80	25.61	25.42	25.24	25.05
27.43	27.24	27.04	26.85	26.66	26.47	26.28	26.09	25.90	25.71	25.52	25.34	25.15
27.53	27.34	27.15	26.95	26.76	26.57	26.38	26.19	26.00	25.81	25.62	25.43	25.25
27.64	27.44	27.25	27.05	26.86	26.67	26.48	26.29	26.10	25.91	25.72	25.53	25.35
27.74	27.54	27.35	27.16	26.96	26.77	26.58	26.39	26.20	26.01	25.82	25.63	25.44
27.84	27.65	27.45	27.26	27.07	26.87	26.68	26.49	26.30	26.11	25.92	25.73	25.54
27.94	27.75	27.55	27.36	27.17	26.97	26.78	26.59	26.40	26.21	26.02	25.83	25.64

Table B.1

Alcohol content (%vol)	Alcohol meter											
	10	10.5	11	11.5	12	12.5	13	13.5	14	14.5	15	15.5
26.5	30.45	30.25	30.04	29.84	29.64	29.44	29.23	29.03	28.84	28.64	28.44	28.24
26.6	30.56	30.35	30.15	29.94	29.74	29.53	29.34	29.14	28.94	28.74	28.54	28.35
26.7	30.66	30.46	30.25	30.05	29.85	29.65	29.44	29.24	29.04	28.85	28.65	28.45
26.8	30.77	30.57	30.36	30.16	29.95	29.75	29.55	29.35	29.15	28.95	28.75	28.55
26.9	30.88	30.67	30.47	30.26	30.06	29.86	29.65	29.45	29.25	29.05	28.85	28.66
27	30.98	30.78	30.57	30.37	30.16	29.96	29.76	29.56	29.36	29.16	28.96	28.76
27.1	31.09	30.88	30.68	30.47	30.27	30.07	29.86	29.66	29.46	*29.26*	29.06	28.86
27.2	31.20	30.99	30.78	30.58	30.37	30.17	29.97	29.77	29.56	29,36	29.16	28.96
27.3	31.30	31.09	30.89	30.68	30.48	30.27	30.07	29.87	29.67	29.47	29.27	29.07
27.4	31.41	31.20	30.99	30.79	30.58	30.38	30.18	29.97	29.77	29.57	29.37	29.17
27.5	31.51	31.30	31.10	30.89	30.69	30.48	30.28	30.08	29.87	29.67	29.47	29.27
27.6	31.62	31.41	31.20	31.00	30.79	30.59	30.38	30.18	29.98	29.78	29.58	29.38
27.7	31.72	31.51	31.31	31.10	30.90	30.69	30.49	30.28	30.08	29.88	29.68	29.48
27.8	31.83	31.62	31.41	31.21	31.00	30.80	30.59	30.39	30.19	29.98	29.78	29.58
27.9	31.93	31.72	31.52	31.31	31.10	30.90	30.69	30.49	30.29	30.09	29.88	29.68
28	32.04	31.83	31.62	31.41	31.21	31.00	30.80	30.59	30.39	30.19	29.99	29.79
28.1	32.14	31.93	31.73	31.52	31.31	31.11	30.90	30.70	30.49	30.29	30.09	29.89
28.2	32.25	32.04	31.83	31.62	31.42	31.21	31.01	30.80	30.60	30.39	30.19	29.99
28.3	32.35	32.14	31.93	31.73	31.52	31.31	31.11	30.90	30.70	30.50	30.29	30.09
28.4	32.45	32.25	32.04	31.83	31.62	31.42	31.21	31.01	30.80	30.60	30.40	30.19
28.5	32.56	32.35	32.14	31.93	31.73	31.52	31.31	31.11	30.91	30.70	30.50	30.30
28.6	32.66	32.45	32.24	32.04	31.83	31.62	31.42	31.21	31.01	30.80	30.60	30.40
28.7	32.77	32.56	32.35	32.14	31.93	31.73	31.52	31.32	31.11	30.91	30.70	30.50
28.8	32.87	32.66	32.45	32.24	32.04	31.83	31.62	31.42	31.21	31.01	30.81	30.60
28.9	32.97	32.76	32.55	32.35	32.14	31.93	31.73	31.52	31.32	31.11	30.91	30.71
29	33.08	32.87	32.66	32.45	32.24	32.04	31.83	31.62	31.42	31.21	31.01	30.81
29.1	33.18	32.97	32.76	32.55	32.35	32.14	31.93	31.73	31.52	31.32	31.11	30.91
29.2	33.28	33.07	32.86	32.66	32.45	32.24	32.03	31.83	31.62	31.42	31.21	31.01
29.3	33.39	33.18	32.97	32.76	32.55	32.34	32.14	31.93	31.73	31.52	31.32	31.11
29.4	33.49	33.28	33.07	32.86	32.65	32.45	32.24	32.03	31.83	31.62	31.42	31.21
29.5	33.59	33.38	33.17	32.96	32.76	32.55	32.34	32.14	31.93	31.72	31.52	31.32
29.6	33.69	33.48	33.27	33.07	32.86	32.65	32.44	32.24	32.03	31.83	31.62	31.42
29.7	33.80	33.59	33.38	33.17	32.96	32.75	32.55	32.34	32.13	31.93	31.72	31.52
29.8	33.90	33.69	33.48	33.27	33.06	32.86	32.65	32.44	32.24	32.03	31.82	31.62
29.9	34.00	33.79	33.58	33.37	33.16	32.96	32.75	32.54	32.34	32.13	31.93	31.72
30	34.10	33.89	33.68	33.48	33.27	33.06	32.85	32.65	32.44	32.23	32.03	31.82
30.1	34.21	34.00	33.79	33.58	33.37	33.16	32.95	32.75	32.54	*32.33*	32.13	31.92
30.2	34.31	34.10	33.89	33.68	33.47	33.26	33.06	32.85	32.64	32.44	32.23	32.03
30.3	34.41	34.20	33.99	33.78	33.57	33.36	33.16	32.95	32.74	32.54	32.33	32.13
30.4	34.51	34.30	34.09	33.88	33.67	33.47	33.26	33.05	32.85	32.64	32.43	32.23
30.5	34.61	34.40	34.19	33.98	33.78	33.57	33.36	33.15	*32.95*	32.74	32.53	32.33
30.6	34.71	34.50	34.30	34.09	33.88	33.67	33.46	33.25	33.05	32.84	32.64	32.43
30.7	34.82	34.61	34.40	34.19	33.98	33.77	33.56	33.36	33.15	32.94	32.74	32.53
30.8	34.92	34.71	34.50	34.29	34.08	33.87	33.66	33.46	33.25	33.04	32.84	32.63
30.9	35.02	34.81	34.60	34.39	34.18	33.97	33.77	33.56	33.35	33.15	32.94	32.73

(Cont' d) Unit: %vol

Temperature/℃												
16	16.5	17	17.5	18	18.5	19	19.5	20	20.5	21	21.5	22
28.05	27.85	27.66	27.46	27.27	27.08	26.88	26.69	26.50	26.31	26.12	25.93	25.74
28.15	27.95	27.76	27.56	27.37	27.18	26.98	26.79	26.60	26.41	26.22	26,03	25.84
28.25	28.06	27.86	27.67	27.47	27.28	27.08	26.89	26.70	26.51	26.32	26.13	25.94
28.36	28.16	27.96	27.77	27.57	27.38	27.19	26.99	26.80	26.61	26.42	26.23	26.03
28.46	28.26	28.07	27.87	27.67	27.48	27.29	27.09	26.90	26.71	26.52	26.32	26.13
28.56	28.36	28.17	27.97	27.78	27.58	27.39	27.19	27.00	26.81	26.62	26.42	26.23
28.66	28.47	28.27	28.07	27.88	27.68	27.49	27.29	27.10	26.91	26.71	26.52	26.33
28.77	28.57	28.37	28.17	27.98	27.78	27.59	27.39	27.20	27.01	26.81	26.62	26.43
28.87	28.67	28.47	28.28	28.08	27.88	27.69	27.49	27.30	27.11	26.91	26.72	26.53
28.97	28.77	28.58	28.38	28.18	27.99	27.79	27.59	27.40	27.21	27.01	26.82	26.63
29.07	28.88	28.68	28.48	28.28	28.09	27.89	27.69	27.50	27.31	27.11	26.92	26.73
29.18	28.98	28.78	28.58	28.38	28.19	27.99	27.80	27.60	27.41	27.21	27.02	26.82
29.28	29.08	28.88	28.68	28.48	28.29	28.09	27.90	27.70	27.51	27.31	27,12	26.92
29.38	29.18	28.98	28.78	28.59	28.39	28.19	28.00	27.80	27.60	27.41	27.22	27.02
29.48	29.28	29.08	28.89	28.69	28.49	28.29	28.10	27.90	27.70	27.51	27.31	27.12
29.59	29.39	29.19	28.99	28.79	28.59	28.39	28.20	28.00	27.80	27.61	27.41	27.22
29.69	29.49	29.29	29.09	28.89	28.69	28.49	28.30	28.10	27.90	27.71	27.51	27.32
29.79	29.59	29.39	29.19	28.99	28.79	28.59	28.40	28.20	28.00	27.81	27.61	27.42
29.89	29.69	29.49	29.29	29.09	28.89	28.69	28.50	28.30	28.10	27.91	27.71	27.52
29.99	29.79	29.59	29.39	29.19	28.99	28.80	28.60	28.40	28.20	28.01	27.81	27.61
30.10	29.89	29.69	29.49	29.29	29.09	28.90	28.70	28.50	28.30	28.11	27.91	27.71
30.20	30.00	29.79	29.59	29.39	29.20	29.00	28.80	28.60	28.40	28.21	28.01	27.81
30.30	30.10	29.90	29.70	29.50	29.30	29.10	28.90	28.70	28.50	28.30	28.11	27.91
30.40	30.20	30.00	29.80	29.60	29.40	29.20	29.00	28.80	28.60	28.40	28.21	28.01
30.50	30.30	30.10	29.90	29.70	29.50	29.30	29.10	28.90	28.70	28.50	28.31	28.11
30.60	30.40	30.20	30.00	29.80	29.60	29.40	29.20	29.00	28.80	28.60	28.41	28.21
30.71	30.50	30.30	30.10	29.90	29.70	29.50	29.30	29.10	28.90	28.70	28.51	28.31
30.81	30.60	30.40	30.20	30.00	29.80	29.60	29.40	29.20	29.00	28.80	28.60	28.41
30.91	30.71	30.50	30.30	30.10	29.90	29.70	29.50	29.30	29.10	28.90	28.70	28.51
31.01	30.81	30.61	30.40	30.20	30.00	29.80	29.60	29.40	29.20	29.00	28.80	28.61
31.11	30.91	30.71	30.50	30.30	30.10	29.90	29.70	29.50	29.30	29.10	28.90	28.70
31.21	31.01	30.81	30.60	30.40	30.20	30.00	29.80	29.60	29.40	29.20	29.00	28.80
31.31	31.11	30.91	30.71	30.50	30.30	30.10	29.90	29.70	29.50	29.30	29.10	28.90
31.42	31.21	31.01	30.81	30.60	30.40	30.20	30.00	29.80	29.60	29.40	29.20	29.00
31.52	31.31	31.11	30.91	30.71	30.50	30.30	30.10	29.90	29.70	29.50	29.30	29.10
31.62	31.41	31.21	31.01	30.81	30.60	30.40	30.20	30.00	29.80	29.60	29.40	29.20
31.72	31.52	31.31	31.11	30.91	30.70	30.50	30.30	30.10	29.90	29.70	29.50	29.30
31.82	31.62	31.41	31.21	31.01	30.80	30.60	30.40	30.20	30.00	29.80	29.60	29.40
31.92	31.72	31.51	31.31	31.11	30.91	30.70	30.50	30.30	30.10	29.90	29.70	29.50
32.02	31.82	31.62	31.41	31.21	31.01	30.80	30.60	30.40	30.20	30.00	29.80	29.60
32.12	31.92	31.72	31.51	31.31	31.11	30.90	30.70	30.50	30.30	30.10	29.90	29.70
32.23	32.02	31.82	31.61	31.41	31.21	31.00	30.80	30.60	30.40	30.20	30.00	29.80
32.33	32.12	31.92	31.71	31.51	31.31	31.10	30.90	30.70	30.50	30.30	30.10	29.90
32.43	32.22	32.02	31.81	31.61	31.41	31.20	31.00	30.80	30.60	30.40	30.20	29.99
32.53	32.32	32.12	31.91	31.71	31.51	31.30	31.10	30.90	30.70	30.50	30.30	30.09

Table B.1

Alcohol content (%vol)	Alcohol meter											
	10	10.5	11	11.5	12	12.5	13	13.5	14	14.5	15	15.5
31	35.12	34.91	34.70	34.49	34.28	34.07	33.87	33.66	33.45	33.25	33.04	32.83
31.1	35.22	35.01	34.80	34.59	34.38	34.18	33.97	33.76	33.55	33.35	33.14	32.94
31.2	35.32	35.11	34.90	34.69	34.49	34.28	34.07	33.86	33.65	33.45	33.24	33.04
31.3	35.42	35.21	35.00	34.79	34.59	34.38	34.17	33.96	33.76	33.55	33.34	33.14
31.4	35.52	35.31	35.10	34.90	34.69	34.48	34.27	34.06	33.86	33.65	33.44	33.24
31.5	35.62	35.41	35.21	35.00	34.79	34.58	34.37	34.16	33.96	33.75	33.54	33.34
31.6	35.72	35.52	35.31	35.10	34.89	34.68	34.47	34.27	34.06	33.85	33.65	33.44
31.7	35.83	35.62	35.41	35.20	34.99	34.78	34.57	34.37	34.16	33.95	33.75	33.54
31.8	35.93	35.72	35.51	35.30	35.09	34.88	34.67	34.47	34.26	34.05	33.85	33.64
31.9	36.03	35.82	35.61	35.40	35.19	34.98	34.77	34.57	34.36	34.15	33.95	33.74
32	36.13	35.92	35.71	35.50	35.29	35.08	34.88	34.67	34.46	34.25	34.05	33.84
32.1	36.23	36.02	35.81	35.60	35.39	35.18	34.98	34.77	34.56	34.35	34.15	33.94
32.2	36.33	36.12	35.91	35.70	35.49	35.28	35.08	34.87	34.66	34.45	34.25	34.04
32.3	36.43	36.22	36.01	35.80	35.59	35.38	35.18	34.97	34.76	34.56	34.35	34.14
32.4	36.53	36.32	36.11	35.90	35.69	35.48	35.28	35.07	34.86	34.66	34.45	34.24
32.5	36.63	36.42	36.21	36.00	35.79	35.58	35.38	35.17	34.96	34.76	34.55	34.34
32.6	36.73	36.52	36.31	36.10	35.89	35.68	35.48	35.27	35.06	34.86	34.65	34.44
32.7	36.83	36.62	36.41	36.20	35.99	35.79	35.58	35.37	35.16	34.96	34.75	34.54
32.8	36.93	36.72	36.51	36.30	36.09	35.89	35.68	35.47	35.26	35.06	34.85	34.64
32.9	37.03	36.82	36.61	36.40	36.19	35.99	35.78	35.57	35.36	35.16	34.95	34.74
33	37.13	36.92	36.71	36.50	36.29	36.09	35.88	35.67	35.46	35.26	35.05	34.84
33.1	37.22	37.02	36.81	36.60	36.39	36.19	35.98	35.77	35.56	35.36	35.15	34.94
33.2	37.32	37.12	36.91	36.70	36.49	36.28	36.08	35.87	35.66	35.46	35.25	35.04
33.3	37.42	37.22	37.01	36.80	36.59	36.38	36.18	35.97	35.76	35.56	35.35	35.14
33.4	37.52	37.31	37.11	36.90	36.69	36.48	36.28	36.07	35.86	35.66	35.45	35.24
33.5	37.62	37.41	37.21	37.00	36.79	36.58	36.38	36.17	35.96	35.76	35.55	35.34
33.6	37.72	*37.51*	37.31	37.10	36.89	36.68	36.48	36.27	36.06	35.86	35.65	35.44
33.7	37.82	37.61	37.41	37.20	36.99	36.78	36.58	36.37	36.16	35.96	35.75	35.54
33.8	37.92	37.71	37.50	37.30	37.09	36.88	36.68	36.47	36.26	36.06	35.85	35.64
33.9	38.02	37.81	37.60	37.40	37.19	36.98	36.78	36.57	36.36	36.16	35.95	35.74
34	38.12	37.91	37.70	37.50	37.29	37.08	56.88	36.67	36.46	36.26	36.05	35.84
34.1	38.22	38.01	37.80	37.59	37.39	37.18	36.97	36.77	36.56	36.36	36.15	35.94
34.2	38.31	38.11	37.90	37.69	37.49	37.28	37.07	36.87	36.66	36.46	36.25	36.04
34.3	38.41	38.21	38.00	37.79	37.59	37.38	37.17	36.97	36.76	36.56	36.35	36.14
34.4	38.51	38.31	38.10	37.89	37.69	37.48	37.27	37.07	36.86	36.65	36.45	36.24
34.5	38.61	38.40	38.20	37.99	37.78	37.58	*37.37*	37.17	36.96	36.75	36.55	36.34
34.6	38.71	38.50	38.30	38.09	37.88	37.68	37.47	37.27	37.06	36.85	36.65	36.44
34.7	38.81	38.60	38.40	38.19	37.98	37.78	37.57	37.36	37.16	36.95	36.75	36.54
34.8	38.91	38.70	38.49	38.29	38.08	37.88	37.67	37.46	37.26	37.05	36.85	36.64
34.9	39.00	38.80	38.59	38.39	38.18	37.97	37.77	37.56	37.36	37.15	36.95	36.74
35	39.10	38.90	38.69	38.49	38.28	38.07	37.87	37.66	37.46	37.25	37.05	36.84
35.1	39.20	39.00	38.79	38.58	38.38	38.17	37.97	37.76	37.56	37.35	37.15	36.94
35.2	39.30	39.09	38.89	38.68	38.48	38.27	38.07	37.86	37.66	37.45	37.25	37.04
35.3	39.40	39.19	38.99	38.78	38.58	38.37	38.17	37.96	37.76	37.55	37.34	37.14
35.4	39.50	39.29	39.09	38.88	38.67	38.47	38.26	38.06	37.85	37.65	37.44	37.24

(Cont' d) Unit: %vol

Temperature/℃												
16	16.5	17	17. 5	18	18. 5	19	19.5	20	20.5	21	21.5	*22*
32. 63	*32. 42*	32.22	32.02	31. 81	31. 61	31.41	31.20	31.00	30. 80	30. 60	30. 39	30. 19
32.73	*32.* 52	32. 32	32.*12*	31.91	31.71	31. 51	31. 30	31. 10	30. 90	30. 70	30.49	30.29
32. 83	32.63	32. 42	*32. 22*	32.01	31. 81	31.61	31.40	31.20	31.00	30.80	30.59	30.39
32.93	32.73	32. 52	32. 32	32. 11	31. 91	31.71	31.50	31. 30	31. 10	30. 90	30. 69	30.49
33.03	32. 83	32. 62	32.42	32.21	32.01	31.81	31. 60	31.40	31.20	31.00	30. 79	30.59
33. 13	32.93	32. 72	32. 52	32.31	32.11	31.91	31.70	31.50	31. 30	31. 10	30. 89	30.69
33. 23	33.03	32. 82	32. 62	32.41	32. 21	32.01	31. 80	31. 60	31.40	31. 19	30.99	30.79
33.33	33. 13	32. 92	32.72	32.51	32. 31	32.11	31. 90	31.70	31.50	31. 29	31.09	30.89
33.43	33. 23	33.02	32.82	*32. 61*	32.41	*32. 21*	32. 00	31.80	31. 60	31.39	31. 19	30. 99
33. 54	33. 33	33. *12*	32.92	*32.72*	32.51	32. 31	32. 10	31. 90	31. 70	31.49	31.29	31.09
33.64	33.43	33. *22*	33.02	*32.* 82	32. 61	32.41	32.20	32.00	31. 80	31. 59	31.39	31. 19
33. 74	33.53	33.33	33.*12*	32.92	32.71	32. 51	32. 30	32.10	31.90	31. 69	31.49	31. 29
33. 84	33.63	33.43	*33.22*	33.02	32. 81	32. 61	32.40	32.20	32.00	31. 79	31.59	31. 39
33. 94	33.73	33. 53	*33.32*	33.12	32. 91	*32. 71*	32. 50	*32.* 30	32. 10	31. 89	31. 69	31. 49
34. 04	33. 83	33. 63	33.42	33. 22	33.01	*32.* 81	32. 60	32.40	32. 20	31.99	31.79	31.59
34. 14	33.93	33. 73	33.52	33.32	33. 11	32.91	32. 70	32. 50	32.30	32.09	31. 89	31.69
34. 24	34.03	33. 83	33.62	33.42	33. 21	33.01	32. 80	32.60	32. 40	32. 19	31.99	31.79
34. 34	34. 13	33.93	33. 72	33.52	33.31	33. 11	32. 90	32.70	32. 50	32. 29	32. 09	31.89
34. 44	34. 23	34. 03	33. 82	33.62	33. 41	33.21	33.00	32.80	32. 60	32. 39	32.19	31. 99
34. 54	34.33	34. 13	33.92	33.72	33. 51	33.31	33. 10	32. 90	32.70	32.49	32.29	32.09
34. 64	34.43	34. 23	34.02	33. 82	33.61	33.41	33. 20	33.00	32. 80	32. 59	32. 39	32. 19
34. 74	34. 53	34. 33	34.12	33.92	33. 71	33. 51	33. 30	33. 10	32. 90	32.69	32.49	32.29
34. 84	34. 63	34.43	34.22	34.02	33. 81	33.61	33.40	33.20	33. 00	32.79	32. 59	32. 39
34. 94	34.73	34. 53	34.32	34. 12	33. 91	33.71	33. 50	33. 30	33. 10	32. 89	32.69	32.49
35.04	34.83	34. 63	34.42	34.22	34.01	33. 81	33. 60	33.40	33. 20	32. 99	32. 79	32. 59
35.14	34.93	34. 73	34.52	34.32	34. 11	33.91	33. 70	33.50	33.30	33.09	32. 89	32. 69
35. 24	35.03	34. 83	34.62	34.42	34. 21	34.01	33. 80	33. 60	33.40	33. 19	32.99	32. 79
35. 34	35.13	34.93	34.72	34.52	34.31	34. 11	33. 90	33.70	33.50	33. 29	33.09	32. 88
35.44	35.23	35.03	34.82	34.62	34.41	34. 21	34.00	33. 80	33.60	33.39	33.19	32. 98
35. 54	35. 33	35.13	34.92	34. 72	34. 51	34.31	34. 10	33. 90	33. 70	33.49	33.29	33. 08
35.64	35.43	35.23	35.02	34. 82	34.61	34.41	34. 20	34.00	33. 80	33.59	33.39	33.18
35. 74	35.53	35. 33	35.12	34. 92	34.71	34.51	34. 30	34. 10	33. 90	33.69	33.49	33.28
35.84	35.63	35.43	35.22	35.02	34.81	34.61	34.40	34. 20	34. 00	33. 79	33.59	33.38
35.94	35.73	35.53	35.32	35.12	34. 91	34.71	34.50	34.30	34. 10	33. 89	33.69	33.48
36.04	35. 83	35.63	35.42	35.22	35.01	34.81	34. 60	34.40	34. 20	33. 99	33.79	33.58
36. 14	35.93	35.73	35.52	35.32	35.11	34. 91	34. 70	34. 50	34. 30	34.09	33. 89	33.68
36. 24	36.03	35. 83	35.62	35.42	35.21	35.01	34. 80	34.60	34. 40	34. 19	33. 99	33.78
36.34	36.13	35. 93	35.72	35.52	35.31	35.11	34. 90	34.70	34. 50	34. 29	34.09	33. 88
36. 44	36. 23	36.03	35.82	35.62	35.41	35.21	35.00	34.80	34. 60	34. 39	34.19	33.98
36.54	36.33	36. 13	35.92	35.72	35. 51	35. 31	35. 10	34.90	34. 70	34.49	34.29	34.08
36.64	36.43	36. 23	36.02	35.82	35. 61	35. 41	35. 20	35.00	34.80	34. 59	34.39	34. 18
36. 74	36. 53	36. 33	36.12	35.92	35. 71	35. 51	35. 30	35. 10	34.90	34. 69	34.49	34.28
36. 84	36.63	36.43	36.22	36.02	35.81	35.61	35.40	35. 20	35. 00	34. 79	34. 59	34.38
36.94	36. 73	36.53	36.32	36.12	35.91	35. 71	35. 50	35.30	35. 10	34.89	34. 69	34.48
37.03	36. 83	36. 63	36.42	36.22	36.01	35. 81	35. 60	35.40	35. 20	34.99	34.79	34.58

Table B.1

Alcohol content (%vol)	Alcohol meter											
	10	10.5	11	11.5	12	12.5	13	13.5	14	14.5	15	15.5
35.5	39.59	39.39	39.18	38.98	38.77	38.57	38.36	38.16	37.95	37.75	37.54	37.34
35.6	39.69	39.49	39.28	39.08	38.87	38.67	38.46	38.26	38.05	37.85	37.64	37.44
35.7	39.79	39.59	39.38	39.18	38.97	38.77	38.56	38.36	38.15	37.95	37.74	37.54
35.8	39.89	39.68	39.48	39.27	39.07	38.86	38.66	38.46	38.25	38.05	37.84	37.64
35.9	39.99	39.78	39.58	39.37	39.17	38.96	38.76	38.55	38.35	38.15	37.94	37.74
36	40.08	39.88	39.68	39.47	39.27	39.06	38.86	38.65	38.45	38.24	38.04	37.84
36.1	40.18	39.98	39.77	39.57	39.37	39.16	38.96	38.75	38.55	38.34	38.14	37.94
36.2	40.28	40.08	39.87	39.67	39.46	39.26	39.06	38.85	38.65	38.44	38.24	38.03
36.3	40.38	40.17	39.97	39.77	39.56	39.36	39.15	38.95	38.75	38.54	38.34	38.13
36.4	40.48	40.27	40.07	39.86	39.66	39.46	39.25	39.05	38.84	38.64	38.44	38.23
36.5	40.57	40.37	40.17	39.96	39.76	39.56	39.35	39.15	38.94	38.74	38.54	38.33
36.6	40.67	40.47	40.26	40.06	39.86	39.65	39.45	39.25	39.04	38.84	38.64	38.43
36.7	40.77	40.57	40.36	40.16	39.96	39.75	39.55	39.35	39.14	38.94	38.73	38.53
36.8	40.87	40.66	40.46	40.26	40.05	39.85	39.65	39.44	39.24	39.04	38.83	38.63
36.9	40.96	40.76	40.56	40.36	40.15	39.95	39.75	39.54	39.34	39.14	38.93	38.73
37	41.06	40.86	40.66	40.45	40.25	40.05	39.84	39.64	39.44	39.23	39.03	38.83
37.1	41.16	40.96	40.75	40.55	40.35	40.15	39.94	39.74	39.54	39.33	39.13	38.93
37.2	41.26	41.05	40.85	40.65	40.45	40.24	40.04	39.84	39.64	39.43	39.23	39.03
37.3	41.35	41.15	40.95	40.75	40.54	40.34	40.14	39.94	39.73	39.53	39.33	39.13
37.4	41.45	41.25	41.05	40.85	40.64	40.44	40.24	40.04	39.83	39.63	39.43	39.23
37.5	41.55	41.35	41.15	40.94	40.74	40.54	40.34	40.13	39.93	39.73	39.53	39.32
37.6	41.65	41.45	41.24	41.04	40.84	40.64	40.44	40.23	40.03	39.83	39.63	39.42
37.7	41.74	41.54	41.34	41.14	40.94	40.74	40.53	40.33	40.13	39.93	39.72	39.52
37.8	41.84	41.64	41.44	41.24	41.04	40.83	40.63	40.43	40.23	40.03	39.82	39.62
37.9	41.94	41.74	41.54	41.34	41.13	40.93	40.73	40.53	40.33	40.12	39.92	39.72
38	42.04	41.84	41.63	41.43	41.23	41.03	40.83	40.63	40.43	40.22	40.02	39.82
38.1	42.13	41.93	41.73	41.53	41.33	41.13	40.93	40.73	40.52	40.32	40.12	39.92
38.2	42.23	42.03	41.83	41.63	41.43	41.23	41.03	40.82	40.62	40.42	40.22	40.02
38.3	42.33	42.13	41.93	41.73	41.53	41.32	41.12	40.92	40.72	40.52	40.32	40.12
38.4	42.43	42.23	42.02	41.82	41.62	41.42	41.22	41.02	40.82	40.62	40.42	40.22
38.5	42.52	42.32	42.12	41.92	41.72	41.52	41.32	41.12	40.92	40.72	40.52	40.31
38.6	42.62	42.42	42.22	42.02	41.82	41.62	41.42	41.22	41.02	40.82	40.61	40.41
38.7	42.72	42.52	42.32	42.12	41.92	41.72	41.52	41.32	41.11	40.91	40.71	40.51
38.8	42.81	42.61	42.41	42.21	42.01	41.81	41.61	41.41	41.21	41.01	40.81	40.61
38.9	42.91	42.71	42.51	42.31	42.11	41.91	41.71	41.51	41.31	41.11	40.91	40.71
39	43.01	42.81	42.61	42.41	42.21	42.01	41.81	41.61	41.41	41.21	41.01	40.81
39.1	43.11	42.91	42.71	42.51	42.31	42.11	41.91	41.71	41.51	41.31	41.11	40.91
39.2	43.20	43.00	42.80	42.61	42.41	42.21	42.01	41.81	41.61	41.41	41.21	41.01
39.3	43.30	43.10	42.90	42.70	42.50	42.30	42.11	41.91	41.71	41.51	41.31	41.11
39.4	43.40	43.20	43.00	42.80	42.60	42.40	42.20	42.00	41.80	41.60	41.40	41.20
39.5	43.49	43.30	43.10	42.90	42.70	42.50	42.30	42.10	41.90	41.70	41.50	41.30
39.6	43.59	43.39	43.19	43.00	42.80	42.60	42.40	42.20	42.00	41.80	41.60	41.40
39.7	43.69	43.49	43.29	43.09	42.89	42.70	42.50	42.30	42.10	41.90	41.70	41.50
39.8	43.78	43.59	43.39	43.19	42.99	42.79	42.60	42.40	42.20	42.00	41.80	41.60
39.9	43.88	43.68	43.49	43.29	43.09	42.89	42.69	42.49	42.30	42.10	41.90	41.70

(Cont' d) Unit: %vol

Temperature/℃												
16	16.5	17	17.5	18	18.5	19	19.5	20	20.5	21	21.5	22
37.13	36.93	36.73	36.52	36.32	36.11	35.91	35.70	35.50	35.30	35.09	34.89	34.68
37.23	37.03	36.82	36.62	36.42	36.21	36.01	35.80	35.60	35.40	35.19	34.99	34.78
37.33	37.13	36.92	36.72	36.52	36.31	36.11	35.90	35.70	35.50	35.29	35.09	34.89
37.43	37.23	37.02	36.82	36.62	36.41	36.21	36.00	35.80	35.60	35.39	35.19	34.99
37.53	37.33	37.12	36.92	36.72	36.51	36.31	36.10	35.90	35.70	35.49	35.29	35.09
37.63	37.43	37.22	37.02	36.82	36.61	36.41	36.20	36.00	35.80	35.59	35.39	35.19
37.73	37.53	37.32	37.12	36.92	36.71	36.51	36.30	36.10	35.90	35.69	35.49	35.29
37.83	37.63	37.42	37.22	37.01	36.81	36.61	36.40	36.20	36.00	35.79	35.59	35.39
37.93	37.73	37.52	37.32	37.11	36.91	36.71	36.50	36.30	36.10	35.89	35.69	35.49
38.03	37.83	37.62	37.42	37.21	37.01	36.81	36.60	36.40	36.20	35.99	35.79	35.59
38.13	37.93	37.72	37.52	37.31	37.11	36.91	36.70	36.50	36.30	36.09	35.89	35.69
38.23	38.02	37.82	37.62	37.41	37.21	37.01	36.80	36.60	36.40	36.19	35.99	35.79
38.33	38.12	37.92	37.72	37.51	37.31	37.11	36.90	36.70	36.50	36.29	36.09	35.89
38.43	38.22	38.02	37.82	37.61	37.41	37.21	37.00	36.80	36.60	36.39	36.19	35.99
38.53	38.32	38.12	37.92	37.71	37.51	37.31	37.10	36.90	36.70	36.49	36.29	36.09
38.63	38.42	38.22	38.02	37.81	37.61	37.41	37.20	37.00	36.80	36.59	36.39	36.19
38.72	38.52	38.32	38.12	37.91	37.71	37.51	37.30	37.10	36.90	36.69	36.49	36.29
38.82	38.62	38.42	38.21	38.01	37.81	37.61	37.40	37.20	37.00	36.79	36.59	36.39
38.92	38.72	38.52	38.31	38.11	37.91	37.71	37.50	37.30	37.10	36.89	36.69	36.49
39.02	38.82	38.62	38.41	38.21	38.01	37.81	37.60	37.40	37.20	36.99	36.79	36.59
39.12	38.92	38.72	38.51	38.31	38.11	37.91	37.70	37.50	37.30	37.09	36.89	36.69
39.22	39.02	38.82	38.61	38.41	38.21	38.01	37.80	37.60	37.40	37.19	36.99	36.79
39.32	39.12	38.92	38.71	38.51	38.31	38.11	37.90	37.70	37.50	37.29	37.09	36.89
39.42	39.22	39.01	38.81	38.61	38.41	38.20	38.00	37.80	37.60	37.39	37.19	36.99
39.52	39.32	39.11	38.91	38.71	38.51	38.30	38.10	37.90	37.70	37.50	37.29	37.09
39.	39.42	39.21	39.01	38.81	38.61	38.40	38.20	38.00	37.80	37.60	37.39	37.19
39.72	39.51	39.31	39.11	38.91	38.71	38.50	38.30	38.10	37.90	37.70	37.49	37.29
39.82	39.61	39.41	39.21	39.01	38.81	38.60	38.40	38.20	38.00	37.80	37.59	37.39
39.91	39.71	39.51	39.31	39.11	38.91	38.70	38.50	38.30	38.10	37.90	37.69	37.49
40.01	39.81	39.61	39.41	39.21	39.01	38.80	38.60	38.40	38.20	38.00	37.79	37.59
40.11	39.91	39.71	39.51	39.31	39.11	38.90	38.70	38.50	38.30	38.10	37.89	37.69
40.21	40.01	39.81	39.61	39.41	39.21	39.00	38.80	38.60	38.40	38.20	37.99	37.79
40.31	40.11	39.91	39.71	39.51	39.30	39.10	38.90	38.70	38.50	38.30	38.09	37.89
40.41	40.21	40.01	39.81	39.61	39.40	39.20	39.00	38.80	38.60	38.40	38.20	37.99
40.51	40.31	40.11	39.91	39.71	39.50	39.30	39.10	38.90	38.70	38.50	38.30	38.09
40.61	40.41	40.21	40.01	39.80	39.60	39.40	39.20	39.00	38.80	38.60	38.40	38.19
40.71	40.51	40.31	40.11	39.90	39.70	39.50	39.30	39.10	38.90	38.70	38.50	38.29
40.81	40.61	40.41	40.20	40.00	39.80	39.60	39.40	39.20	39.00	38.80	38.60	38.39
40.91	40.71	40.50	40.30	40.10	39.90	39.70	39.50	39.30	39.10	38.90	38.70	38.50
41.00	40.80	40.60	40.40	40.20	40.00	39.80	39.60	39.40	39.20	39.00	38.80	38.60
41.10	40.90	40.70	40.50	40.30	40.10	39.90	39.70	39.50	39.30	39.10	38.90	38.70
41.20	41.00	40.80	40.60	40.40	40.20	40.00	39.80	39.60	39.40	39.20	39.00	38.80
41.30	41.10	40.90	40.70	40.50	40.30	40.10	39.90	39.70	39.50	39.30	39.10	38.90
41.40	41.20	41.00	40.80	40.60	40.40	40.20	40.00	39.80	39.60	39.40	39.20	39.00
41.50	41.30	41.10	40.90	40.70	40.50	40.30	40.10	39.90	39.70	39.50	39.30	39.10

Table B.1

Alcohol content (%vol)	Alcohol meter											
	10	10.5	11	11.5	12	12.5	13	13.5	14	14.5	15	15.5
40	43.98	43.78	43.58	43.39	43.19	42.99	42.79	42.59	42.39	42.20	42.00	41.80
40.1	44.08	43.88	43.68	43.48	43.29	43.09	42.89	42.69	42.49	42.29	42.10	41.90
40.2	44.17	43.98	43.78	43.58	43.38	43.19	42.99	42.79	42.59	42.39	42.19	42.00
40.3	44.27	44.07	43.88	43.68	43.48	43.28	43.09	42.89	42.69	42.49	42.29	42.09
40.4	44.37	44.17	43.97	43.78	43.58	43.38	43.18	42.99	42.79	42.59	42.39	42.19
40.5	44.46	44.27	44.07	43.87	43.68	43.48	43.28	43.08	42.89	42.69	42.49	42.29
40.6	44.56	44.36	44.17	43.97	43.77	43.58	43.38	43.18	42.98	42.79	42.59	42.39
40.7	44.66	44.46	44.26	44.07	43.87	43.67	43.48	43.28	43.08	42.88	42.69	42.49
40.8	44.75	44.56	44.36	44.17	43.97	43.77	43.58	43.38	43.18	42.98	42.79	42.59
40.9	44.85	44.66	44.46	44.26	44.07	43.87	43.67	43.48	43.28	43.08	42.88	42.69
41	44.95	44.75	44.56	44.36	44.16	43.97	43.77	43.57	43.38	43.18	42.98	42.79
41.1	45.04	44.85	44.65	44.46	44.26	44.07	43.87	43.67	43.48	43.28	.43.08	42.88
4L 2	45.14	44.95	44.75	44.56	44.36	44.16	43.97	43.77	43.57	43.38	43.18	42.98
41.3	45.24	45.04	44.85	44.65	44.46	44.26	44.07	43.87	43.67	43.48	43.28	43.08
41.4	45.34	45.14	44.95	44.75	44.55	44.36	44.16	43.97	43.77	43.57	43.38	43.18
41.5	45.43	45.24	45.04	44.85	44.65	44.46	44.26	44.06	43.87	43.67	43.48	43.28
4L6	45.53	45.33	45.14	44.94	44.75	44.55	44.36	44.16	43.97	43.77	43.57	43.38
41.7	45.63	45.43	45.24	45.04	44.85	44.65	44.46	44.26	44.07	43.87	43.67	43.48
41.8	45.72	45.53	45.33	45.14	44.94	44.75	44.55	44.36	44.16	43.97	43.77	43.58
41.9	45.82	45.63	45.43	45.24	45.04	44.85	44.65	44.46	44.26	44.07	43.87	43.67
42	45.92	45.72	45.53	45.33	45.14	44.95	44.75	44.56	44.36	44.16	43.97	43.77
42.1	46.01	45.82	45.63	45.43	45.24	45.04	44.85	44.65	44.46	44.26	44.07	43.87
42.2	46.11	45.92	45.72	45.53	45.33	45.14	44.95	44.75	44.56	44.36	44.17	43.97
42.3	46.21	46.01	45.82	45.63	45.43	45.24	45.04	44.85	44.65	44.46	44.26	44.07
42.4	46.30	46.11	45.92	45.72	45.53	45.34	45.14	44.95	44.75	44.56	44.36	44.17
42.5	46.40	46.21	46.01	45.82	45.63	45.43	45.24	45.05	44.85	44.66	44.46	44.27
42.6	46.50	46.30	46.11	45.92	45.72	45.53	45.34	45.14	44.95	44.75	44.56	44.36
42.7	46.59	46.40	46.21	46.02	45.82	45.63	45.44	45.24	45.05	44.85	44.66	44.46
42.8	46.69	46.50	46.31	46.11	45.92	45.73	45.53	45.34	45.15	44.95	44.76	44.56
42.9	46.79	46.60	46.40	46.21	46.02	45.82	45.63	45.44	45.24	45.05	44.86	44.66
43	46.88	46.69	46.50	46.31	46.12	45.92	45.73	45.54	45.34	45.15	44.95	44.76
43.1	46.98	46.79	46.60	46.41	46.21	46.02	45.83	45.63	45.44	45.25	45.05	44.86
43.2	47.08	46.89	46.69	46.50	46.31	46.12	45.92	45.73	45.54	45.34	45.15	44.96
43.3	47.17	46.98	46.79	46.60	46.41	46.22	46.02	45.83	45.64	45.44	45.25	45.06
43.4	47.27	47.08	46.89	46.70	46.51	46.31	46.12	45.93	45.73	45.54	45.35	45.15
43.5	47.37	47.18	46.99	46.79	46.60	46.41	46.22	46.03	45.83	45.64	45.45	45.25
43.6	47.46	47.27	47.08	46.89	46.70	46.51	46.32	46.12	45.93	45.74	45.54	45.35
43.7	47.56	47.37	47.18	46.99	46.80	46.61	46.41	46.22	46.03	45.84	45.64	45.45
43.8	47.66	47.47	47.28	47.09	46.90	46.70	46.51	46.32	46.13	45.93	45.74	45.55
43.9	47.76	47.56	47.37	47.18	46.99	46.80	46.61	46.42	46.23	46.03	45.84	45.65
44	47.85	47.66	47.47	47.28	47.09	46.90	46.71	46.52	46.32	46.13	45.94	45.75
44.1	47.95	47.76	47.57	47.38	47.19	47.00	46.81	46.61	46.42	46.23	46.04	45.84
44.2	48.05	47.86	47.67	47.48	47.29	47.09	46.90	46.71	46.52	46.33	46.14	45.94
44.3	48.14	47.95	47.76	47.57	47.38	47.19	47.00	46.81	46.62	46.43	46.23	46.04
44.4	48.24	48.05	47.86	47.67	47.48	47.29	47.10	46.91	46.72	46.52	46.33	46.14

(Cont' d) Unit: %vol

Temperature/℃												
16	16.5	17	17.5	18	18.5	19	19,5	20	20.5	21	21.5	22
41.60	41.40	41.20	41.00	40.80	40.60	40.40	40.20	40.00	39.80	39.60	39.40	39.20
41.70	41.50	41.30	41.10	40.90	40.70	40.50	40.30	40.10	39.90	39.70	39.50	39.30
41.80	41.60	41.40	41.20	41.00	40.80	40.60	40.40	40.20	40.00	39.80	39.60	39.40
41.90	41.70	41.50	41.30	41.10	40.90	40.70	40.50	40.30	40.10	39.90	39.70	39.50
41.99	41.80	41.60	41.40	41.20	41.00	40.80	40.60	40.40	40.20	40.00	39.80	39.60
42.09	41.89	41.70	41.50	41.30	41.10	40.90	40.70	40.50	40.30	40.10	39.90	39.70
42.19	41.99	41.79	41.60	41.40	41.20	41.00	40.80	40.60	40.40	40.20	40.00	39.80
42.29	42.09	41.89	41.70	41.50	41.30	41.10	40.90	40.70	40.50	40.30	40.10	39.90
42.39	42.19	41.99	41.79	41.60	41.40	41.20	41.00	40.80	40.60	40.40	40.20	40.00
42.49	42.29	42.09	41.89	41.70	41.50	41.30	41.10	40.90	40.70	40.50	40.30	40.10
42.59	42.39	42.19	41.99	41.79	41.60	41.40	41.20	41.00	40.80	40.60	40.40	40.20
42.69	42.49	42.29	42.09	41.89	41.70	41.50	41.30	41.10	40.90	40.70	40.50	40.30
42.79	42.59	42.39	42.19	41.99	41.80	41.60	41.40	41.20	41.00	40.80	40.60	40.40
42.88	42.69	42.49	42.29	42.09	41.90	41.70	41.50	41.30	41.10	40.90	40.70	40.50
42.98	42.79	42.59	42.39	42.19	41.99	41.80	41.60	41.40	41.20	41.00	40.80	40.60
43.08	42.88	42.69	42.49	42.29	42.09	41.90	41.70	41.50	41.30	41.10	40.90	40.71
43.18	42.98	42.79	42.59	42.39	42.19	42.00	41.80	41.60	41.40	41.20	41.00	40.81
43.28	43.08	42.89	42.69	42.49	42.29	42.10	41.90	41.70	41.50	41.30	41.10	40.91
43.38	43.18	42.98	42.79	42.59	42.39	42.20	42.00	41.80	41.60	41.40	41.21	41.01
43.48	43.28	43.08	42.89	42.69	42.49	42.30	42.10	41.90	41.70	41.50	41.31	41.11
43.58	43.38	43.18	42.99	42.79	42.59	42.40	42.20	42.00	41.80	41.60	41.41	41.21
43.68	43.48	43.28	43.09	42.89	42.69	42.49	42.30	42.10	41.90	41.70	41.51	41.31
43.77	43.58	43.38	43.19	42.99	42.79	42.59	42.40	42.20	42.00	41.80	41.61	41.41
43.87	43.68	43.48	43.28	43.09	42.89	42.69	42.50	42.30	42.10	41.91	41.71	41.51
43.97	43.78	43.58	43.38	43.19	42.99	42.79	42.60	42.40	42.20	42.01	41.81	41.61
44.07	43.87	43.68	43.48	43.29	43.09	42.89	42.70	42.50	42.30	42.11	41.91	41.71
44.17	43.97	43.78	43.58	43.39	43.19	42.99	42.80	42.60	42.40	42.21	42.01	41.81
44.27	44.07	43.88	43.68	43.49	43.29	43.09	42.90	42.70	42.50	42.31	42.11	41.91
44.37	44.17	43.98	43.78	43.59	43.39	43.19	43.00	42.80	42.60	42.41	42.21	42.01
44.47	44.27	44.08	43.88	43.68	43.49	43.29	43.10	42.90	42.70	42.51	42.31	42.11
44.56	44.37	44.17	43.98	43.78	43.59	43.39	43.20	43.00	42.80	42.61	42.41	42.21
44.66	44.47	44.27	44.08	43.88	43.69	43.49	43.30	43.10	42.90	42.71	42.51	42.31
44.76	44.57	44.37	44.18	43.98	43.79	43.59	43.40	43.20	43.00	42.81	42.61	42.41
44.86	44.67	44.47	44.28	44.08	43.89	43.69	43.50	43.30	43.10	42.91	42.71	42.51
44.96	44.77	44.57	44.38	44.18	43.99	43.79	43.60	43.40	43.20	43.01	42.81	42.62
45.06	44.86	44.67	44.48	44.28	44.09	43.89	43.70	43.50	43.30	43.11	42.91	42.72
45.16	44.96	44.77	44.58	44.38	44.19	43.99	43.80	43.60	43.40	43.21	43.01	42.82
45.26	45.06	44.87	44.67	44.48	44.29	44.09	43.90	43.70	43.50	43.31	43.11	42.92
45.36	45.16	44.97	44.77	44.58	44.38	44.19	44.00	43.80	43.60	43.41	43.21	43.02
45.45	45.26	45.07	44.87	44.68	44.48	44.29	44.10	43.90	43.70	43.51	43.31	43.12
45.55	45.36	45.17	44.97	44.78	44.58	44.39	44.19	44.00	43.80	43.61	43.41	43.22
45.65	45.46	45.27	45.07	44.88	44.68	44.49	44.29	44.10	43.91	43.71	43.51	43.32
45.75	45.56	45.36	45.17	44.98	44.78	44.59	44.39	44.20	44.01	43.81	43.62	43.42
45.85	45.66	45.46	45.27	45.08	44.88	44.69	44.49	44.30	44.11	43.91	43.72	43.52
45.95	45.76	45.56	45.37	45.18	44.98	44.79	44.59	44.40	44.21	44.01	43.82	43.62

Table B.1

Alcohol content (%vol)	Alcohol meter											
	10	10.5	11	11.5	12	12.5	13	13.5	14	14.5	15	15.5
44.5	48.34	48.15	47.96	47.77	47.58	47.39	47.20	47.01	46.81	46.62	46.43	46.24
44.6	48.43	48.24	48.05	47.86	47.68	47.48	47.29	47.10	46.91	46.72	46.53	46.34
44.7	48.53	48.34	48.15	47.96	47.77	47.58	47.39	47.20	47.01	46.82	46.63	46.44
44.8	48.63	48.44	48.25	48.06	47.87	47.68	47.49	47.30	47.11	46.92	46.73	46.54
44.9	48.72	48.53	48.35	48.16	47.97	47.78	47.59	47.40	47.21	47.02	46.83	46.63
45	48.82	48.63	48.44	48.25	48.07	47.88	47.69	47.50	47.31	47.11	46.92	46.73
45.1	48.92	48.73	48.54	48.35	48.16	47.97	47.78	47.59	47.40	47.21	47.02	46.83
45.2	49.01	48.83	48.64	48.45	48.26	48.07	47.88	47.69	47.50	47.31	47.12	46.93
45.3	49.11	48.92	48.73	48.55	48.36	48.17	47.98	47.79	47.60	47.41	47.22	47.03
45.4	49.21	49.02	48.83	48.64	48.46	48.27	48.08	47.89	47.70	47.51	47.32	47.13
45.5	49.30	49.12	48.93	48.74	48.55	48.36	48.18	47.99	47.80	47.61	47.42	47.23
45.6	49.40	49.21	49.03	48.84	48.65	48.46	48.27	48.08.	47.89	47.70	47.51	47.32
45.7	「 49.	49.31	49.12	48.94	48.75	48.56	48.37	48.18	47.99	47.80	47.61	47.42
45.8	49.59	49.41	49.22	49.03	48.85	48.66	48.47	48.28	48.09	47.90	47.71	47.52
45.9	49.69	49.51	49.32	49.13	48.94	48.75	48.57	48.38	48.19	48.00	47.81	47.62
46	49.79	49.60	49.42	49.23	49.04	48.85	48.66	48.48	48.29	48.10	47.91	47.72
46.1	49.89	49.70	49.51	49.33	49.14	48.95	48.76	48.57	48.39	48.20	48.01	47.82
46.2	49.98	49.80	49.61	49.42	49.24	49.05	48.86	48.67	48.48	48.29	48.11	47.92
46.3	50.08	49.89	49.71	49.52	49.33	49.15	48.96	48.77	48.58	48.39	48.20	48.01
46.4	50.18	49.99	49.80	49.62	49.43	49.24	49.06	48.87	48.68	48.49	48.30	48.11
46.5	50.27	50.09	49.90	49.71	49.53	49.34	49.15	48.97	48.78	48.59	48.40	48.21
46.6	50.37	50.18	50.00	49.81	49.63	49.44	49.25	49.06	48.88	48.69	48.50	48.31
46.7	50.47	50.28	50.10	49.91	49.72	49.54	49.35	49.16	48.97	48.79	48.60	48.41
46.8	50.56	50.38	50.19	50.01	49.82	49.63	49.45	49.26	49.07	48.88	48.70	48.51
46.9	50.66	50.48	50.29	50.10	49.92	49.73	49.55	49.36	49.17	48.98	48.80	48.61
47	50.76	50.57	50.39	50.20	50.02	49.83	49.64	49.46	49.27	49.08	48.89	48.71
47.1	50.85	50.67	50.48	50.30	50.11	49.93	49.74	49.55	49.37	49.18	48.99	48.80
47.2	50.95	50.77	50.58	50.40	50.21	50.03	49.84	49.65	49.47	49.28	49.09	48.90
47.3	51.05	50.86	50.68	50.49	50.31	50.12	49.94	49.75	49.56	49.38	49.19	49.00
47.4	51.15	50.96	50.78	50.59	50.41	50.22	50.03	49.85	49.66	49.48	49.29	49.10
47.5	51.24	51.06	50.87	50.69	50.50	50.32	50.13	49.95	49.76	49.57	49.39	49.20
47.6	51.34	51.16	50.97	50.79	50.60	50.42	50.23	50.04	49.86	49.67	49.49	49.30
47.7	51.44	51.25	51.07	50.88	50.70	50.51	50.33	50.14	49.96	49.77	49.58	49.40
47.8	51.53	51.35	51.17	50.98	50.80	50.61	50.43	50.24	50.06	49.87	49.68	49.50
47.9	51.63	51.45	51.26	51.08	50.89	50.71	50.52	50.34	50.15	49.97	49.78	49.59
48	51.73	51.54	51.36	51.18	50.99	50.81	50.62	50.44	50.25	50.07	49.88	49.69
48.1	51.82	51.64	51.46	51.27	51.09	50.91	50.72	50.54	50.35	50.16	49.98	49.79
48.2	51.92	51.74	51.56	51.37	51.19	51.00	50.82	50.63	50.45	50.26	50.08	49.89
48.3	52.02	51.84	51.65	51.47	51.29	51.10	50.92	50.73	50.55	50.36	50.17	49.99
48.4	52.12	51.93	51.75	51.57	51.38	51.20	51.01	50.83	50.64	50.46	50.27	50.09
48.5	52.21	52.03	51.85	51.66	51.48	51.30	51.11	50.93	50.74	50.56	50.37	50.19
48.6	52.31	52.13	51.94	51.76	51.58	51.39	51.21	51.03	50.84	50.66	50.47	50.28
48.7	52.41	52.22	52.04	51.86	51.68	51.49	51.31	51.12	50.94	50.75	50.57	50.38
48.8	52.50	52.32	52.14	51.96	51.77	51.59	51.41	51.22	51.04	50.85	50.67	50.48
48.9	52.60	52.42	52.24	52.05	51.87	51.69	51.50	51.32	51.14	50.95	50.77	50.58

(Cont' d) Unit: %vol

Temperature/℃												
16	16.5	17	17.5	18	18.5	19	19.5	20	20.5	21	21.5	22
46.05	45.85	45.66	45.47	45.28	45.08	44.89	44.69	44.50	44.31	44.11	43.92	43.72
46.15	45.95	45.76	45.57	45.37	45.18	45.99	44.79	44.60	44.41	44.21	44.02	43.82
46.24	46.05	45.86	45.67	45.47	45.28	45.09	44.89	44.70	44.51	44.31	44.12	43.92
46.34	46.15	45.96	45.77	45.57	45.38	45.19	44.99	44.80	44.61	44.41	44.22	44.02
46.44	46.25	46.06	45.87	45.67	45.48	45.29	45.09	44.90	44.71	44.51	44.32	44.12
46.54	46.35	46.16	45.96	45.77	45.58	45.39	45.19	45.00	44.81	44.61	44.42	44.22
46.64	46.45	46.26	46.06	45.87	45.68	45.49	45.29	45.10	44.91	44.71	44.52	44.32
46.74	46.55	46.36	46.16	45.97	45.78	45.59	45.39	45.20	45.01	44.81	44.62	44.43
46.84	46.65	46.45	46.26	46.07	45.88	45.69	45.49	45.30	45.11	44.91	44.72	44.53
46.94	46.75	46.55	46.36	46.17	45.98	45.79	45.59	45.40	45.21	45.01	44.82	44.63
47.03	46.84	46.65	46.46	46.27	46.08	45.89	45.69	45.50	45.31	45.11	44.92	44.73
47.13	46.94	46.75	46.56	46.37	46.18	45.98	45.79	45.60	45.41	45.21	45.02	44.83
47.23	47.04	46.85	46.66	46.47	46.28	46.08	45.89	45.70	45.51	45.31	45.12	44.93
47.33	47.14	46.95	46.76	46.57	46.38	46.18	45.99	45.80	45.61	45.41	45.22	45.03
47.43	47.24	47.05	46.86	46.67	46.48	46.28	46.09	45.90	45.71	45.51	45.32	45.13
47.53	47.34	47.15	46.96	46.77	46.58	46.38	46.19	46.00	45.81	45.62	45.42	45.23
47.63	47.44	47.25	47.06	46.87	46.67	46.48	46.29	46.10	45.91	45.72	45.52	45.33
47.73	47.54	47.35	47.16	46.97	46.77	46.58	46.39	46.20	46.01	45.82	45.62	45.43
47.83	47.64	47.45	47.26	47.06	46.87	46.68	46.49	46.30	46.11	45.92	45.72	45.53
47.92	47.73	47.54	47.35	47.16	46.97	46.78	46.59	46.40	46.21	46.02	45.82	45.63
48.02	47.83	47.64	47.45	47.26	47.07	46.88	46.69	46.50	46.31	46.12	45.92	45.73
48.12	47.93	47.74	47.55	47.36	47.17	46.98	46.79	46.60	46.41	46.22	46.03	45.83
48.22	48.03	47.84	47.65	47.46	47.27	47.08	46.89	46.70	46.51	46.32	46.13	45.93
48.32	48.13	47.94	47.75	47.56	47.37	47.18	46.99	46.80	46.61	46.42	46.23	46.03
48.42	48.23	48.04	47.85	47.66	47.47	47.28	47.09	46.90	46.71	46.52	46.33	46.13
48.52	48.33	48.14	47.95	47.76	47.57	47.38	47.19	47.00	46.81	46.62	46.43	46.24
48.62	48.43	48.24	48.05	47.86	47.67	47.48	47.29	47.10	46.91	46.72	46.53	46.34
48.71	48.53	48.34	48.15	47.96	47.77	47.58	47.39	47.20	47.01	46.82	46.63	46.44
48.81	48.63	48.44	48.25	48.06	47.87	47.68	47.49	47.30	47.11	46.92	46.73	46.54
48.91	48.72	48.54	48.35	48.16	47.97	47.78	47.59	47.40	47.21	47.02	46.83	46.64
49.01	48.82	48.64	48.45	48.26	48.07	47.88	47.69	47.50	47.31	47.12	46.93	46.74
49.11	48.92	48.73	48.55	48.36	48.17	47.98	47.79	47.60	47.41	47.22	47.03	46.84
49.21	49.02	48.83	48.65	48.46	48.27	48.08	47.89	47.70	47.51	47.32	47.13	46.94
49.31	49.12	48.93	48.74	48.56	48.37	48.18	47.99	47.80	47.61	47.42	47.23	47.04
49.41	49.22	49.03	48.84	48.66	48.47	48.28	48.09	47.90	47.71	47.52	47.33	47.14
49.51	49.32	49.13	48.94	48.76	48.57	48.38	48.19	48.00	47.81	47.62	47.43	47.24
49.60	49.42	49.23	49.04	48.85	48.67	48.48	48.29	48.10	47.91	47.72	47.53	47.34
49.70	49.52	49.33	49.14	48.95	48.77	48.58	48.39	48.20	48.01	47.82	47.63	47.44
49.80	49.62	49.43	49.24	49.05	48.87	48.68	48.49	48.30	48.11	47.92	47.73	47.54
49.90	49.71	49.53	49.34	49.15	48.97	48.78	48.59	48.40	48.21	48.02	47.83	47.64
50.00	49.81	49.63	49.44	49.25	49.06	48.88	48.69	48.50	48.31	48.12	47.93	47.74
50.10	49.91	49.73	49.54	49.35	49.16	48.98	48.79	48.60	48.41	48.22	48.03	47.84
50.20	50.01	49.83	49.64	49.45	49.26	49.08	48.89	48.70	48.51	48.32	48.13	47.94
50.30	50.11	49.92	49.74	49.55	49.36	49.18	48.99	48.80	48.61	48.42	48.23	48.05
50.40	50.21	50.02	49.84	49.65	49.46	49.28	49.09	48.90	48.71	48.52	48.33	48.15

Table B.1

Alcohol content (%vol)	Alcohol meter											
	10	10.5	11	11.5	12	12.5	13	13.5	14	14.5	15	15.5
49	52.70	52.52	52.33	52.15	51.97	51.79	51.60	51.42	51.23	51.05	50.87	50.68
49.1	52.80	52.61	52.43	52.25	52.07	51.88	51.70	51.52	51.33	51.15	50.96	50.78
49.2	52.89	52.71	52.53	52.35	52.16	51.98	51.80	51.61	51.43	51.25	51.06	50.88
49.3	52.99	52.81	52.63	52.44	52.26	52.08	51.90	51.71	51.53	[1] 51.35	51.16	50.98
49.4	53.09	52.91	52.72	52.54	52.36	52.18	51.99	51.81	51.63	51.44	51.26	51.07
49.5	53.18	53.00	52.82	52.64	52.46	52.28	52.09	51.91	51.73	51.54	51.36	51.17
49.6	53.28	53.10	52.92	52.74	52.56	52.37	52.19	52.01	51.82	51.64	51.46	51.27
49.7	53.38	53.20	53.02	52.84	52.65	52.47	52.29	52.11	51.92	51.74	51.56	51.37
49.8	53.48	53.29	53.11	52.93	52.75	52.57	52.39	52.20	52.02	51.84	51.65	51.47
49.9	53.57	53.39	53.21	53.03	52.85	52.67	52.48	52.30	52.12	51.94	51.75	51.57
50	53.67	53.49	53.31	53.13	52.95	52.76	52.58	52.40	52.22	52.03	51.85	51.67

Table B.2 Conversion of alcohol meter temperature (t) and alcohol content (ALC)

Alcohol content (%vol)	Alcohol meter											
	22.5	23	23.5	24	24.5	25	25.5	26	26.5	27	27.5	28
18	17.29	17.14	17.00	16.86	16.71	16.57	16.42	16.28	16.13	15.99	15.84	15.69
18.1	17.38	17.24	17.09	16.95	16.81	16.66	16.51	16.37	16.22	16.08	15.93	15.78
18.2	17.48	17.34	17.19	17.04	16.90	16.75	16.61	16.46	16.32	16.17	16.02	15.87
18.3	17.58	17.43	17.29	17.14	19.99	16.85	16.70	16.55	16.41	16.26	16.11	15.96
18.4	17.67	17.53	17.38	17.23	17.09	16.94	16.79	16.65	16.50	16.35	16.20	16.06
18.5	17.77	17.62	17.48	17.33	17.18	17.03	16.89	16.74	16.59	16.44	16.29	16.15
18.6	17.87	17.72	17.57	17.42	17.28	17.13	16.98	16.83	16.68	16.53	16.39	16.24
18.7	17.96	17.82	17.67	17.52	17.37	17.22	17.07	16.92	16.78	16.63	16.48	16.33
18.8	18.06	17.91	17.76	17.61	17.46	17.32	17.17	17.02	16.87	16.72	16.57	16.42
18.9	18.16	18.01	17.86	17.71	17.56	17.41	17.26	17.11	16.96	16.81	16.66	16.51
19	18.25	18.10	17.95	17.80	17.65	17.50	17.35	17.20	17.05	16.90	16.75	16.60
19.1	18.35	18.20	18.05	17.90	17.75	17.60	17.45	17.29	17.14	16.99	16.84	16.69
19.2	18.45	18.30	18.14	17.99	17.84	17.69	17.54	17.39	17.24	17.08	16.93	16.78
19.3	18.54	18.39	18.24	18.09	17.94	17.78	17.63	17.48	17.33	17.1&	17.02	16.87
19.4	18.64	18.49	18.34	18.18	18.03	17.88	17.73	17.57	17.42	17.27	17.11	16.96
19.5	18.74	18.58	18.43	18.28	18.13	17.97	17.82	17.67	17.52	17.36	17.20	17.05
19.6	18.83	18.68	18.53	18.37	18.22	18.07	17.91	17.76	17.60	17.45	17.30	17.14
19.7	18.93	18.78	18.62	18.48	18.31	18.16	18.01	17.85	*17.70*	17.54	17.39	17.23
19.8	19.03	18.87	18.72	18.56	18.41	18.25	18.10	17.94	17.79	17.63	17.48	17.32
19.9	19.12	18.97	18.81	18.66	18.50	18.35	18.19	18.04	17.88	17.73	17.57	17.41
20	19.22	19.06	18.91	18.75	18.60	18.44	18.29	18.13	17.97	17.82	17.66	17.50
20.1	19.32	19.16	19.00	18.85	18.69	18.53	18.38	18.22	18.07	17.91	17.75	17.60
20.2	19.41	19.26	19.10	18.94	18.79	18.63	18.47	18.31	18.16	18.00	17.84	17.69
20.3	19.51	19.35	19.20	19.04	18.88	18.72	18.57	18.41	18.25	18.09	17.93	17.78
20.4	19.61	19.45	19.29	19.13	18.97	18.82	18.66	18.50	18.34	18.18	18.03	17.87
20.5	19.70	19.55	19.39	19.23	19.07	18.91	18.75	18.59	18.43	18.28	18.12	17.96
20.6	19.80	19.64	19.48	19.32	19.16	19.00	18.85	18.69	18.53	18.37	18.21	18.05
20.7	19.90	19.74	19.58	19.42	19.26	19.10	18.94	18.78	18.62	18.46	18.30	18.14
20.8	20.00	19.83	19.67	19.51	19.35	19.19	19.03	18.87	18.71	18.55	18.39	18.23
20.9	20.09	19.93	19.77	19.61	19.45	19.29	19.13	18.97	18.80	18.64	18.48	18.32

(Cont' d) Unit: %vol

Temperature/℃												
16	16.5	17	17.5	18	18.5	19	19.5	20	20.5	21	21.5	22
50.49	50.31	50.12	49.94	49.75	49.56	49.38	49.19	49.00	48.81	48.62	48.43	48.25
50.59	50.41	50.22	50.04	49.85	49.66	49.48	49.29	49.10	48.91	48.72	48.54	48.35
50.69	50.51	50.32	50.13	49.95	49.76	49.57	49.39	49.20	49.01	48.82	48.64	48.45
50.79	50.61	50.42	50.23	50.05	49.86	49.67	49.49	49.30	49.11	48.92	48.74	48.55
50.89	30.70	50.52	50.33	50.15	49.96	49.77	49.59	49.40	49.21	49.02	48.84	48.65
50.99	50.80	50.62	50.43	50.25	50.06	49.87	49.69	49.50	49.31	49.12	48.94	48.75
51.09	50.90	50.72	50.53	50.35	50.16	49.97	49.79	49.60	49.41	49.23	49.04	48.85
51.19	51.00	50.82	50.63	50.45	50.26	50.07	49.89	49.70	49.51	49.33	49.14	48.95
51.29	51.10	50.92	50.73	50.55	50.36	50.17	49.99	49.80	49.61	49.43	49.24	49.05
51.38	51.20	51.02	50.83	50.64	50.46	50.27	50.09	49.90	49.71	49.53	49.34	49.15
51.48	51.30	51.11	50.93	50.74	50.56	50.37	50.19	50.00	49.81	49.63	49.44	49.25

(Temperature range: 22.5 ℃-35 ℃, interval: 0.5 ℃) Unit:%vol

Temperature/℃													
28.5	29	29.5	30	30.5	31	31.5	32	32.5	33	33.5	34	34.5	35
15.55	15.40	15.25	15.11	14.96	14.81	14.66	14.51	14.37	14.22	14.07	13.92	13.77	13.62
15.64	15.49	15.34	15.19	15.05	14.90	14.75	14.60	14.45	14.30	14.15	14.00	13.85	13.70
15.73	15.58	15.43	15.28	15.13	14.99	14.84	14.69	14.54	14.39	14.24	14.09	13.94	13.79
15.82	15.67	15.52	15.37	15.22	15.07	14.92	14.77	14.63	14.48	14.33	14.17	14.02	13.87
15.91	15.76	15.61	15.46	15.31	15.16	15.01	14.86	14.71	14.56	14.41	14.26	14.11	13.96
16.00	15.85	15.70	15.55	15.40	15.25	15.10	14.95	14.80	14.65	14.50	14.35	14.19	14.04
16.09	15.94	15.79	15.64	15.49	15.34	15.19	15.04	14.88	14.73	14.58	14.43	14.28	14.13
16.18	16.03	15.88	15.73	15.58	15.42	15.27	15.12	14.97	14.82	14.67	14.52	14.36	14.21
16.27	16.12	15.97	15.81	15.66	15.51	15.36	15.21	15.06	14.91	14.75	14.60	14.45	14.30
16.36	16.21	16.05	15.90	15.75	15.60	15.45	15.30	15.14	14.99	14.84	14.69	14.53	14.38
16.45	16.30	16.14	15.99	15.84	15.69	15.54	15.38	15.23	15.08	14.92	14.77	14.62	14.47
16.54	16.38	16.23	16.08	15.93	15.78	15.62	15.47	15.32	15.16	15.01	14.86	14.70	14.55
16.63	16.47	16.32	16.17	16.02	15.86	15.71	15.36	15.40	15.25	15.10	14.94	14.79	14.63
16.72	16.56	16.41	16.26	16.10	15.95	15.80	15.64	15.49	15.34	15.18	15.03	14.87	14.72
16.81	16.65	16.50	16.35	16.18	16.04	15.88	15.73	15.58	15.42	15.27	15.11	14.96	14.80
16.90	16.74	16.59	16.44	16.28	16.13	15.97	15.82	15.66	15.51	15.35	15.20	15.04	14.89
16.99	16.83	16.68	16.52	16.37	16.21	16.06	15.90	15.75	15.59	15.44	15.28	15.13	14.97
17.08	16.92	16.77	16.61	16.46	16.30	16.15	15.99	15.84	15.68	15.53	15.37	15.21	15.06
17.17	17.01	16.86	16.70	16.55	16.39	16.23	16.08	15.92	15.77	15.61	15.45	15.30	15.14
17.26	17.10	16.95	16.79	16.63	16.48	16.32	16.17	16.01	15.85	15.70	15.54	15.38	15.23
17.35	17.19	17.04	16.88	16.72	16.57	16.41	16.25	16.10	15.94	15.78	15.63	15.47	15.31
17.44	17.28	17.12	16.97	16.81	16.65	16.50	16.34	16.18	16.03	15.87	15.71	15.55	15.40
17.53	17.37	17.21	17.06	16.90	16.74	16.58	16.43	16.27	16.11	15.95	15.80	15.64	15.48
17.62	17.46	17.30	17.15	16.99	16.83	16.67	16.51	16.36	16.20	16.04	15.88	15.72	15.57
17.71	17.55	17.39	17.23	17.08	16.92	16.76	16.60	16.44	16.28	16.13	15.97	15.81	15.65
17.80	17.64	17.48	17.32	17.17	17.01	16.85	16.69	16.53	16.37	16.21	16.05	15.89	15.74
17.89	17.73	17.57	17.41	17.25	17.09	16.94	16.78	16.62	16.46	16.30	16.14	15.98	15.82
17.98	17.82	17.66	17.50	17.34	17.18	17.02	16.86	16.70	16.54	16.38	16.22	16.07	15.91
18.07	17.91	17.75	17.59	17.43	17.27	17.11	16.95	16.79	16.63	16.47	16.31	16.15	15.99
18.16	18.00	17.84	17.68	17.52	17.36	17.20	17.04	16.88	16.72	16.56	16.40	16.24	16.08

Table B.2

Alcohol content	Alcohol meter											
	22. 5	23	23. 5	24	24. 5	25	25.5	26	26. 5	27	27.5	28
21	20. 19	20. 03	19.87	19.70	19. 54	19. 38	19. 22	19.06	18.90	18.74	18. 57	18.41
21. 1	20. 29	20. 12	19.96	19.80	19. 64	19.47	19. 31	19. 15	18.99	18.83	18.67	18. 50
21.2	20.38	20. 22	20.06	19. 89	19.73	19. 57	19.41	19.24	19.08	18. 92	18.76	18. 60
21. 3	20.48	20. 32	20. 15	19.99	19.83	19. 66	19. 50	19.34	19. 17	19.01	18.85	18. 69
21.4	20.58	20.41	20.25	20.08	19.92	19.76	19. 59	19.43	19.27	19.10	18.94	18. 78
21.5	20. 67	20.51	20.34	20. 18	20. 02	19. 85	19. 69	19.52	19.36	19. 20	19. 03	18.87
21. 6	20.77	20. 61	20.44	20.28	20. 11	19.95	19. 78	19.62	19.45	19.29	19. 12	18. 96
21.7	20.87	20. 70	20.54	20.37	20.21	20. 04	19. 87	19.71	19.55	19. 38	19.22	19. 05
21.8	20.96	20.80	20. 63	20.47	20.30	20.13	19.97	19.80	19. 64	19.47	19.31	19. 14
21.9	21.06	20. 89	20.73	20.56	20.39	20. 23	20.06	19.90	19.73	19. 56	19.40	19.23
22	21.16	20.99	20.82	20. 6.6	20.49	20. 32	20. 16	19.99	19. 82	19. 66	19.49	19. 33
22.1	21.26	21.09	20.92	20.75	20.58	20. 42	20. 25	20. 08	19.92	19.75	19. 58	19.42
22.2	21.35	21.18	21.02	20.85	20.68	20.51	20. 34	20.18	20.01	19.84	19. 68	19.51
22.3	21.45	21.28	21.11	20.94	20. 77	20. 61	20. 44	20.27	20. 10	19. 93	19.77	19. 60
22.4	21. 55	21.38	21.21	21.04	20.87	20. 70	20. 53	20.36	20.20	20. 03	19.86	19. 69
22. 5	21. 64	21.47	21.30	21. 13	20.96	20.80	20. 63	20.46	20. 29	20. 12	19. 95	19. 78
22. 6	21.74	21.57	21.40	21.23	21.06	20.89	20. 72	20.55	20. 38	20.21	20.04	19.87
22.7	21.84	21. 67	21.50	21.33	21. 15	20. 98	20. 81	20.64	20.47	20.30	20. 14	19.97
22.8	21.94	21.76	21.59	21.42	21.25	21.08	20. 91	20.74	20.57	20. 40	20.23	20. 06
22.9	22. 03	21.86	21.69	21.52	21.35	21. 17	21. 00	20. 83	20.66	20.49	20. 32	20. 15
23	22. 13	21.96	21.78	21.61	21.44	21.27	21.10	20. 93	20.75	20. 58	20. 41	20.24
23.1	22.23	22. 05	21.88	21. 71	21.54	21. 36	21. 19	21.02	20. 85	20. 68	20.50	20. 33
23.2	22.33	22. 15	21.98	21.80	21. 63	21.46	21. 29	21. 11	20.94	20. 77	20. 60	20.43
23. 3	22. 42	22.25	22.07	21. 90	21.73	21. 55	21. 38	21.21	21.03	20.86	20. 69	20. 52
23.4	22.52	22.34	22.17	22.00	21.82	21. 65	21.47	21.30	21. 13	20. 95	20. 78	20. 61
23. 5	22.62	22.44	22.27	22.09	21.92	21.74	21. 57	21.39	21.22	21.05	20.87	20. 70
23. 6	22. 71	22.54	22.36	22.19	22.01	21.84	21. 66	21.49	21.31	21. 14	20. 97	20.79
23.7	22.81	22. 64	22.46	22.28	22. 11	21. 93	21.76	21.58	21.41	21.23	21.06	20.89
23.8	22.91	22. 73	22.56	22.38	22.20	22.03	21.85	21. 68	21.50	21. 33	21.15	20. 98
23. 9	23. 01	22. 83	22.65	22.48	22. 30	22. 12	21. 95	21.77	21. 60	21.42	21.25	21.07
24	23. 10	22. 93	22.75	22.57	22.39	22. 22	22.04	21.87	21.69	21.51	21. 34	21. 16
24. 1	23. 20	23. 02	22.85	22.67	22.49	22. 31	22. 14	21.96	21.78	21.61	21. 43	21.26
24.2	23. 30	23. 12	22.94	22.76	22.59	22. 41	22.23	22.05	21.88	21. 70	21. 52	2L35
24. 3	23. 40	23.22	23.04	22.86	22.68	22. 50	22. 33	22.15	21.97	21. 79	21. 62	21. 44
24.4	23.49	23.31	23. 14	22.96	22. 78	22. 60	22. 42	*22.* 24	22. 06	21.89	21.71	21. 53
24.5	23.59	23.41	23.23	23.05	22.87	22.69	22.52	22.34	22.16	21. 98	21.80	21. 63
24. 6	23. 69	23. 51	23.33	23.15	22.97	22.79	22.61	22.43	22.25	22.07	21. 90	21. 72
24. 7	23.79	23.61	23.43	23.24	23. 06	22.88	22. 71	22.53	22.35	22. 17	21.99	21. 81
24.8	23.89	23. 70	23.52	23.34	23. 16	22. 98	22. 80	22. 62	22.44	22.26	22.08	21. 90
24. 9	23. 98	23.80	23.62	23.44	23.26	23.08	22. 90	22.72	22.54	22. 36	22. 18	22. 00
25	24. 08	23.90	23.72	23. 53	23. 35	23. 17	22. 99	22.81	22.63	22.45	22. 27	22.09
25.1	24.18	24. 00	23.81	23.63	23.45	23.27	23. 09	22.90	22.72	22. 54	22.36	22. 18
25.2	24. 28	24.09	23. 91	23.73	23.54	23.36	23.18	23.00	22.82	22. 64	22.46	22. 28
25. 3	24. 37	24. 19	24. 01	23.82	23. 64	23.46	23.28	23.09	22.91	22. 73	22. 55	22. 37
25.4	24. 47	24.29	24.10	23. 92	23.74	23.55	23. 37	23.19	23.01	22.83	22. 64	22.46

(Cont' d) Unit: %vol

Temperature/℃													
28.5	29	29.5	30	30.5	31	31.5	32	32.5	33	33.5	34	34.5	35
18.25	18.09	17.93	17.77	17.61	17.45	17.29	17.13	16.96	16.80	16.64	16.48	16.32	16.16
18.34	18.18	18.02	17.86	17.70	17.54	17.37	17.21	17.05	16.89	16.73	16.57	16.41	16.25
18.43	18.27	18.11	17.95	17.79	17.62	17.46	17.30	17.14	16.98	16.82	16.65	16.49	16.33
18.52	18.36	18.20	18.04	17.87	17.71	17.55	17.39	17.23	17.06	16.90	16.74	16.58	16.42
18.61	18.45	18.29	18.13	17.96	17.80	17.64	17.48	17.31	17.15	16.99	16.83	16.66	16.50
18.71	18.54	18.38	18.22	18.05	17.89	17.73	17.56	17.40	17.24	17.07	16.91	16.75	16.59
18.80	18.63	18.47	18.30	18.14	17.98	17.81	17.65	17.49	17.32	17.16	17.00	16.83	16.67
18.89	18.72	18.56	18.39	18.23	18.07	17.90	17.74	17.57	17.41	17.25	17.08	16.92	16.76
18.98	18.81	18.65	18.48	18.32	18.15	17.99	17.83	17.66	17.50	17.33	17.17	17.01	16.84
19.07	18.90	18.74	18.57	18.41	18.24	18.08	17.91	17.75	17.58	17.42	17.26	17.09	16.93
19.16	18.99	18.83	18.66	18.50	18.33	18.17	18.00	17.84	17.67	17.51	17.34	17.18	17.01
19.25	19.08	18.92	18.75	18.59	18.42	18.26	18.09	17.92	17.76	17.59	17.43	17.26	17.10
19.34	19.17	19.01	18.84	18.68	18.51	18.34	18.18	18.01	17.85	17.68	17.52	17.35	17.18
19.43	19.27	19.10	18.93	18.76	18.60	18.43	18.27	18.10	17.93	17.77	17.60	17.44	17.27
19.52	19.36	19.19	19.02	18.85	18.69	18.52	18.35	18.19	18.02	17.85	17.69	17.52	17.36
19.61	19.45	19.28	19.11	18.94	18.78	18.61	18.44	18.27	18.11	17.94	17.77	17.61	17.44
19.71	19.54	19.37	19.20	19.03	18.87	18.70	18.53	18.36	18.20	18.03	17.86	17.69	17.53
19.80	19.63	19.46	19.29	19.12	18.95	18.79	18.62	18.45	18.28	18.12	17.95	17.78	17.61
19.89	19.72	19.55	19.38	19.21	19.04	18.87	18.71	18.54	18.37	18.20	18.03	17.87	17.70
19.98	19.81	19.64	19.47	19.30	19.13	18.96	18.79	18.63	18.46	18.29	18.12	17.95	17.79
20.07	19.90	19.73	19.56	19.39	19.22	19.05	18.88	18.71	18.55	18.38	18.21	18.04	17.87
20.16	19.99	19.82	19.65	19.48	19.31	19.14	18.97	18.80	18.63	18.46	18.30	18.13	17.96
20.25	20.08	19.91	19.74	19.57	19.40	19.23	19.06	18.89	18.72	18.55	18.38	18.21	18.04
20.35	20.17	20.00	19.83	19.66	19.49	19.32	19.15	18.98	18.81	18.64	18.47	18.30	18.13
20.44	20.27	20.09	19.92	19.75	19.58	19.41	19.24	19.07	18.90	18.73	18.56	18.39	18.22
20.53	20.36	20.18	20.01	19.84	19.67	19.50	19.33	19.16	18.98	18.81	18.64	18.47	18.30
20.62	20.45	20.28	20.10	19.93	19.76	19.59	19.42	19.24	19.07	18.90	18.73	18.56	18.39
20.71	20.54	20.37	20.19	20.02	19.85	19.68	19.50	19.33	19.16	18.99	18.82	18.65	18.48
20.80	20.63	20.46	20.28	20.11	19.94	19.77	19.59	19.42	19.25	19.08	18.91	18.73	18.56
20.90	20.72	20.55	20.37	20.20	20.03	19.85	19.68	19.51	19.34	19.17	18.99	18.82	18.65
20.99	20.81	20.64	20.47	20.29	20.12	19.94	19.77	19.60	19.43	19.25	19.08	18.91	18.74
21.08	20.91	20.73	20.56	20.38	20.21	20.03	19.86	19.69	19.51	19.34	19.17	19.00	18.82
21.17	21.00	20.82	20.65	20.47	20.30	20.12	19.95	19.78	19.60	19.43	19.26	19.08	18.91
21.26	21.09	20.91	20.74	20.56	20.39	20.21	20.04	19.86	19.69	19.52	19.34	19.17	19.00
21.36	21.18	21.00	20.83	20.65	20.48	20.30	20.13	19.95	19.78	19.61	19.43	19.26	19.08
21.45	21.27	21.10	20.92	20.74	20.57	20.39	20.22	20.04	19.87	19.69	19.52	19.35	19.17
21.54	21.36	21.19	21.01	20.83	20.66	20.48	20.31	20.13	19.96	19.78	19.61	19.43	19.26
21.63	21.46	21.28	21.10	20.93	20.75	20.57	20.40	20.22	20.05	19.87	19.70	19.52	19.35
21.73	21.55	21.37	21.19	21.02	20.84	20.66	20.49	20.31	20.13	19.96	19.78	19.61	19.43
21.82	21.64	21.46	21.29	21.11	20.93	20.75	20.58	20.40	20.22	20.05	19.87	19.70	19.52
21.91	21.73	21.55	21.38	21.20	21.02	20.84	20.67	20.49	20.31	20.14	19,96	19.79	19.61
22.00	21.83	21.65	21.47	21.29	21.11	20.93	20.76	20.58	20.40	20.23	20.05	19.87	19.70
22.10	21.92	21.74	21.56	21.38	21.20	21.02	20.85	20.67	20.49	20.31	20,14	19.96	19.79
22.19	22.01	21.83	21.65	21.47	21.29	21.11	20.94	20.76	20.58	20.40	20.23	20.05	19.87
22.28	22.10	21.92	21.74	21.56	21.38	21.21	21.03	20.85	20.67	20.49	20.32	20.14	19.96

Table B.2

Alcohol content (%vol)	Alcohol meter											
	22.5	23	23.5	24	24.5	25	25.5	26	26.5	27	27.5	28
25.5	24.57	24.39	24.20	24.02	23.83	23.65	23.47	23.28	23.10	22.92	22.74	22.56
25.6	24.67	24.48	24.30	24.11	23.93	23.75	23.56	23.38	23.20	23.01	22.83	22.65
25.7	24.77	24.58	24.39	24.21	24.03	23.84	23.66	23.47	23.29	23.11	22.93	22.74
25.8	24.86	24.68	24.49	24.31	24.12	23.94	23.75	23.57	23.39	23.20	[1] 23.02	22.84
25.9	24.96	24.78	24.59	24.40	24.22	24.03	23.85	23.66	23.48	23.30	23.11	22.93
26	25.06	24.87	24.69	24.50	24.31	24.13	23.94	23.76	23.58	23.39	23.21	23.03
26.1	25.16	24.97	24.78	24.60	24.41	24.23	24.04	23.86	23.67	23.49	23.30	23.12
26.2	25.26	25.07	24.88	24.69	24.51	24.32	24.14	23.95	23.77	23.58	23.40	23.21
26.3	25.35	25.17	24.98	24.79	24.60	24.42	24.23	24.05	23.86	23.68	23.49	23.31
26.4	25.45	25.26	25.08	24.89	24.70	24.51	24.33	24.14	23.96	23.77	23.59	23.40
26.5	25.55	25.36	25.17	24.98	24.80	24.61	24.42	24.24	24.05	23.87	23.68	23.49
26.6	25.65	25.46	25.27	25.08	24.89	24.71	24.52	24.33	24.15	23.96	23.77	23.59
26.7	25.75	25.56	25.37	25.18	24.99	24.80	24.62	24.43	24.24	24.06	23.87	23.68
26.8	25.84	25.65	25.47	25.28	25.09	24.90	24.71	24.52	24.34	24.15	23.96	23.78
26.9	25.94	25.75	25.56	25.37	25.18	25.00	24.81	24.62	24.43	24.25	24.06	23.87
27	26.04	25.85	25.66	25.47	25.28	25.09	24.90	24.72	24.53	24.34	24.15	23.97
27.1	26.14	25.95	25.76	25.57	25.38	25.19	25.00	24.81	24.62	24.44	24.25	24.06
27.2	26.24	26.05	25.86	25.67	25.48	25.29	25.10	24.91	24.72	24.53	24.34	24.16
27.3	26.34	26.14	25.95	25.76	25.57	25.38	25.19	25.00	24.81	24.63	24.44	24.25
27.4	26.43	26.24	26.05	25.86	25.67	25.48	25.29	25.10	24.91	24.72	24.53	24.34
27.5	26.53	26.34	26.15	25.96	25.77	25.58	25.39	25.20	25.01	24.82	24.63	24.44
27.6	26.63	26.44	26.25	26.05	25.86	25.67	25.48	25.29	25.10	24.91	24.72	24.53
27.7	26.73	26.54	26.34	26.15	25.96	25.77	25.58	25.39	25.20	25.01	24.82	24.63
27.8	26.83	26.63	26.44	26.25	26.06	25.87	25.68	25.48	25.29	25.10	24.91	24.72
27.9	26.93	26.73	26.54	26.35	26.16	25.96	25.77	25.58	25.39	25.20	25.01	24.82
28	27.03	26.83	26.64	26.45	26.25	26.06	25.87	25.68	25.49	25.30	25.10	24.91
28.1	27.12	26.93	26.74	26.54	26.35	26.16	25.97	25.77	25.58	25.39	25.20	25.01
28.2	27.22	27.03	26.83	26.64	26.45	26.25	26.06	25.87	25.68	25.49	25.30	25.11
28.3	27.32	27.13	26.93	26.74	26.54	26.35	26.16	25.97	25.77	25.58	25.39	25.20
28.4	27.42	27.22	27.03	26.84	26.64	26.45	26.26	26.06	25.87	25.68	25.49	25.30
28.5	27.52	27.32	27.13	26.93	26.74	26.55	26.35	26.16	25.97	25.78	25.58	25.39
28.6	27.62	27.42	27.23	27.03	26.84	26.64	26.45	26.26	26.06	25.87	25.68	25.49
28.7	27.72	27.52	27.32	27.13	26.94	26.74	26.55	26.35	26.16	25.97	25.77	25.58
28.8	27.81	27.62	27.42	27.23	27.03	26.84	26.64	26.45	26.26	26.06	25.87	25.68
28.9	27.91	27.72	27.52	27.33	27.13	26.94	26.74	26.55	26.35	26.16	25.97	25.77
29	28.01	27.82	27.62	27.42	27.23	27.03	26.84	26.64	26.45	26.26	26.06	25.87
29.1	28.11	27.91	27.72	27.52	27.33	27.13	26.94	26.74	26.55	*26.35*	26.16	25.97
29.2	28.21	28.01	27.82	27.62	27.42	27.23	27.03	26.84	26.64	26.45	26.26	26.06
29.3	28.31	28.11	27.91	27.72	27.52	27.33	27.13	26.94	26.74	26.55	26.35	26.16
29.4	28.41	28.21	28.01	27.82	27.62	27.42	27.23	27.03	26.84	26.64	26.45	26.25
29.5	28.51	28.31	28.11	27.91	27.72	27.52	27.33	27.13	26.93	26.74	26.55	26.35
29.6	28.61	28.41	28.21	28.01	27.82	27.62	27.42	27.23	27.03	26.84	26.64	26.45
29.7	28.70	28.51	28.31	28.11	27.91	27.72	27.52	27.32	27.13	26.93	26.74	26.54
29.8	28.80	28.60	28.41	28.21	28.01	27.82	27.62	27.42	27.23	27.03	26.84	26.64
29.9	28.90	2&70	28.51	28.31	28.11	27.91	27.72	27.52	27.32	27.13	26.93	26.74

(Cont' d) Unit: %vol

Temperature/℃													
28.5	29	29.5	30	30.5	31	31.5	32	32.5	33	33.5	34	34.5	35
22.38	22.20	22.01	21.83	21.66	21.48	21.30	21.12	20.94	20.76	20.58	20.40	20.23	20.05
22.47	22.29	22.11	21.93	21.75	21.57	21.39	21.21	21.03	20.85	20.67	20.49	20.32	20.14
22.56	22.38	22.20	22.02	21.84	21.66	21.48	21.30	21.12	20.94	20.76	20.58	20.40	20.23
22.66	22.47	22.29	22.11	21.93	21.75	21.57	21.39	21.21	21.03	20.85	20.67	20.49	20.31
22.75	22.57	22.38	22.20	22.02	21.84	21.66	21.48	21.30	21.12	20.94	20.76	20.58	20.40
22.84	22.66	22.48	22.30	22.11	21.93	21.75	21.57	21.39	21.21	21.03	20.85	20.67	20.49
22.94	22.75	*22.57*	22.39	22.21	*22.02*	21.84	21.66	21.48	21.30	*21.12*	20.94	20.76	20.58
23.03	22.85	22.66	22.48	22.30	22.12	21.93	21.75	21.57	21.39	*21.21*	21.03	20.85	20.67
23.12	22.94	22.76	22.57	22.39	22.21	22.02	21.84	21.66	21.48	21.30	21.12	20.94	20.76
23.22	23.03	22.85	22.66	22.48	22.30	22.12	21.93	21.75	21.57	21.39	21.21	21.03	20.85
23.31	23.13	22.94	22.76	22.57	22.39	22.21	22.03	21.84	21.66	21.48	21.30	21.12	20.94
23.40	23.22	23.03	22.85	22.67	22.48	22.30	22.12	21.93	21.75	21.57	21.39	21.21	21.03
23.50	23.31	23.13	22.94	22.76	22.57	22.39	22.21	22.03	21.84	21.66	21.48	21.30	21.12
23.59	23.41	23.22	23.04	22.85	22.67	22.48	22.30	22.12	21.93	21.75	21.57	21.39	21.20
23.69	23.50	23.31	23.13	22.94	22.76	22.58	22.39	22.21	22.02	21.84	21.66	21.48	21.29
23.78	23.59	23.41	23.22	23.04	22.85	22.67	22.48	22.30	22.12	21.93	21.75	21.57	21.38
23.87	23.69	23.50	23.32	23.13	22.94	22.76	22.57	22.39	*22.21*	22.02	21.84	21.66	21.47
23.97	23.78	23.59	23.41	23.22	23.04	22.85	22.67	22.48	22.30	22.11	21.93	21.75	21.56
24.06	23.88	23.69	23.50	23.32	23.13	22.94	22.76	22.57	22.39	22.20	22.02	21.84	21.65
24.16	23.97	23.78	23.59	23.41	23.22	23.04	22.85	22.67	22.48	22.30	22.11	21.93	21.74
24.25	24.06	23.88	23.69	23.50	23.31	23.13	22.94	22.76	22.57	22.39	22.20	22.02	21.83
24.35	24.16	23.97	23.78	23.59	23.41	23.22	23.03	22.85	22.66	22.48	22.29	22.11	21.92
24.44	24.25	24.06	23.88	23.69	23.50	23.31	23.13	22.94	22.76	22.57	22.38	22.20	22.01
24.54	24.35	24.16	23.97	23.78	23.59	23.41	23.22	23.03	22.85	22.66	22.48	22.29	22.11
24.63	24.44	24.25	24.06	23.88	23.69	23.50	23.31	23.13	22.94	22.75	22.57	22.38	22.20
24.72	24.54	24.35	24.16	23.97	23.78	23.59	23.40	23.22	23.03	22.84	22.66	22.47	22.29
24.82	24.63	24.44	24.25	24.06	23.87	23.69	23.50	23.31	23.12	22.94	22.75	22.56	22.38
24.91	24.72	24.53	24.35	24.16	23.97	23.78	23.59	23.40	23.22	23.03	22.84	22.65	22.47
25.01	24.82	24.63	24.44	24.25	24.06	23.87	23.68	23.50	23.31	23.12	22.93	22.75	22.56
25.10	24.91	24.72	24.53	24.34	24.15	23.97	23.78	23.59	23.40	23.21	23.02	22.84	22.65
25.20	25.01	24.82	24.63	24.44	24.25	24.06	23.87	23.68	23.49	23.30	23.12	22.93	22.74
25.30	25.10	24.91	24.72	24.53	24.34	24.15	23.96	23.77	23.59	23.40	23.21	23.02	22.83
25.39	25.20	25.01	24.82	24.63	24.44	24.25	24.06	23.87	23.68	23.49	23.30	23.11	22.93
25.49	25.29	25.10	24.91	24.72	24.53	24.34	24.15	23.96	23.77	23.58	23.39	23.20	23.02
25.58	25.39	25.20	25.01	24.82	24.62	24.43	24.24	24.05	23.86	23.67	23.49	23.30	23.11
25.68	25.48	25.29	25.10	24.91	24.72	24.53	24.34	24.15	23.96	23.77	23.58	23.39	23.20
25.77	25.58	25.39	25.20	25.00	24.81	24.62	24.43	24.24	24.05	23.86	23.67	23.48	23.29
25.87	25.68	25.48	25.29	25.10	24.91	24.72	24.52	24.33	24.14	23.95	23.76	23.57	23.38
25.96	25.77	25.58	25.39	25.19	25.00	24.81	24.62	24.43	24.24	24.05	23.86	23.67	23.48
26.06	25.87	25.67	25.48	25.29	25.10	24.90	24.71	24.52	24.33	24.14	23.95	23.76	23.57
26.16	25.96	25.77	25.58	25.38	25.19	25.00	24.81	24.62	24.42	24.23	24.04	23.85	23.66
26.25	26.06	25.87	25.67	25.48	25.29	25.09	24.90	24.71	24.52	24.33	24.14	23.94	23.75
26.35	26.15	25.96	25.77	25.57	25.38	25.19	25.00	24.80	24.61	24.42	24.23	24.04	23.85
26.45	26.25	26.06	25.86	25.67	25.48	25.28	25.09	24.90	24.71	24.51	24.32	24.13	23.94
26.54	26.35	26.15	25.96	25.76	25.57	25.38	25.18	24.99	24.80	24.61	24.42	24.22	24.03

Table B.2

Alcohol content (%vol)	Alcohol meter											
	22.5	23	23.5	24	24.5	25	25.5	26	26.5	27	27.5	28
30	29.00	28.80	28.60	28.41	28.21	28.01	27.81	27.62	27.42	27.22	27.03	26.83
30.1	29.10	28.90	28.70	28.50	28.31	28.11	27.91	27.71	27.52	27.32	27.13	26.93
30.2	29.20	29.00	28.80	28.60	28.41	28.21	28.01	27.81	27.62	27.42	27.22	27.03
30.3	29.30	29.10	28.90	28.70	28.50	28.31	28.11	27.91	27.71	27.52	27.32	27.12
30.4	29.40	29.20	29.00	28.80	28.60	28.40	28.21	28.01	27.81	27.61	27.42	27.22
30.5	29.50	29.30	29.10	28.90	28.70	28.50	28.30	28.11	27.91	27.71	27.51	27.32
30.6	29.60	29.40	29.20	29.00	28.80	28.60	28.40	28.20	28.01	27.81	27.61	27.41
30.7	29.70	29.50	29.30	29.10	28.90	28.70	28.50	28.30	28.10	27.91	27.71	27.51
30.8	29.79	29.59	29.39	29.19	29.00	28.80	28.60	28.40	28.20	28.00	27.81	27.61
30.9	29.89	29.69	29.49	29.29	29.09	28.90	28.70	28.50	28.30	28.10	27.90	27.71
31	29.99	29.79	29.59	29.39	29.19	28.99	28.79	28.60	28.40	28.20	28.00	27.80
31.1	30.09	29.89	29.69	29.49	29.29	29.09	28.89	28.69	28.50	28.30	28.10	27.90
31.2	30.19	29.99	29.79	29.59	29.39	29.19	28.99	28.79	28.59	28.39	28.20	28.00
31.3	30.29	30.09	29.89	29.69	29.49	29.29	29.09	28.89	28.69	28.49	28.29	28.10
31.4	30.39	30.19	29.99	29.79	29.59	29.39	29.19	28.99	28.79	28.59	28.39	28.19
31.5	30.49	30.29	30.09	29.89	29.69	29.49	29.29	29.09	28.89	28.69	28.49	28.29
31.6	30.59	30.39	30.19	29.99	29.79	29.59	29.39	29.19	28.99	28.79	28.59	28.39
31.7	30.69	30.49	30.29	30.09	29.88	29.68	29.48	29.28	29.08	28.88	28.69	28.49
31.8	30.79	30.59	30.39	30.18	29.98	29.78	29.58	29.38	29.18	28.98	28.78	28.58
31.9	30.89	30.69	30.48	30.28	30.08	29.88	29.68	29.48	29.28	29.08	28.88	28.68
32	30.99	30.79	30.58	30.38	30.18	29.98	29.78	29.58	29.38	29.18	28.98	28.78
32.1	31.09	30.88	30.68	30.48	30.28	30.08	29.88	29.68	29.48	29.28	29.08	28.88
32.2	31.19	30.98	30.78	30.58	30.38	30.18	29.98	29.78	29.58	29.38	29.18	28.98
32.3	31.29	31.08	30.88	30.68	30.48	30.28	30.08	29.88	29.67	29.47	29.27	29.07
32.4	31.39	31.18	30.98	30.78	30.58	30.38	30.18	29.97	29.77	29.57	29.37	29.17
32.5	31.48	31.28	31.08	30.88	30.68	30.48	30.27	30.07	29.87	29.67	29.47	29.27
32.6	31.58	31.38	31.18	30.98	30.78	30.57	30.37	30.17	29.97	29.77	29.57	29.37
32.7	31.68	31.48	31.28	31.08	30.88	30.67	30.47	30.27	30.07	29.87	29.67	29.47
32.8	31.78	31.58	31.38	31.18	30.97	30.77	30.57	30.37	30.17	29.97	29.77	29.57
32.9	31.88	31.68	31.48	31.28	31.07	30.87	30.67	30.47	30.27	30.07	29.87	29.66
33	31.98	31.78	31.58	31.38	31.17	30.97	30.77	30.57	30.37	30.17	29.96	29.76
33.1	32.08	31.88	31.68	31.48	31.27	31.07	30.87	30.67	30.47	30.26	30.06	29.86
33.2	32.18	31.98	31.78	31.57	31.37	31.17	30.97	30.77	30.56	30.36	30.16	29.96
33.3	32.28	32.08	31.88	31.67	31.47	31.27	31.07	30.87	30.66	30.46	30.26	30.06
33.4	32.38	32.18	31.98	31.77	31.57	31.37	31.17	30.96	30.76	30.56	30.36	30.16
33.5	32.48	32.28	32.08	31.87	31.67	31.47	31.27	31.06	30.86	30.66	30.46	30.26
33.6	32.58	32.38	32.18	31.97	31.77	31.57	31.37	31.16	30.96	30.76	30.56	30.36
33.7	32.68	32.48	32.28	32.07	31.87	31.67	31.47	31.26	31.06	30.86	30.66	30.46
33.8	32.78	32.58	32.38	32.17	31.97	31.77	31.56	31.36	31.16	30.96	30.76	30.55
33.9	32.88	32.68	32.47	32.27	32.07	31.87	31.66	31.46	31.26	31.06	30.86	30.65
34	32.98	32.78	32.57	32.37	32.17	31.97	31.76	31.56	31.36	31.16	30.95	30.75
34.1	33.08	32.88	32.67	32.47	32.27	32.07	31.86	31.66	31.46	31.26	31.05	30.85
34.2	33.18	32.98	32.77	32.57	32.37	32.17	31.96	31.76	31.56	31.36	31.15	30.95
34.3	33.28	33.08	32.87	32.67	32.47	32.27	32.06	31.86	31.66	31.46	31.25	31.05
34.4	33.38	33.18	32.97	32.77	32.57	32.37	32.16	31.96	31.76	31.55	31.35	31.15

(Cont' d) Unit: %vol

Temperature/℃													
28.5	29	29.5	30	30.5	31	31.5	32	32.5	33	33.5	34	34.5	35
26.64	26.44	26.25	26.05	25.86	25.67	25.47	25.28	25.09	24.89	24.70	24.51	24.32	24.13
26.73	26.54	26.34	26.15	25.96	25.76	25.57	25.37	25.18	24.99	24.80	24.60	24.41	24.22
26.83	26.64	26.44	26.25	26.05	25.86	25.66	25.47	25.28	25.08	24.89	24.70	24.50	24.31
26.93	26.73	26.54	26.34	26.15	25.95	25.76	25.56	25.37	25.18	24.98	24.79	24.60	24.41
27.02	26.83	26.63	26.44	26.24	26.05	25.85	25.66	25.46	25.27	25.08	24.88	24.69	24.50
27.12	26.92	26.73	26.53	26.34	26.14	25.95	25.75	25.56	25.37	25.17	24.98	24.79	24.59
27.22	27.02	26.83	26.63	26.43	26.24	26.04	25.85	25.65	25.46	25.27	25.07	24.88	24.69
27.31	27.12	26.92	26.73	26.53	26.33	26.14	25.94	25.75	25.56	25.36	25.17	24.97	24.78
27.41	27.21	27.02	26.82	26.63	26.43	26.23	26.04	25.84	25.65	25.46	25.26	25.07	24.87
27.51	27.31	27.11	26.92	26.72	26.53	26.33	26.14	25.94	25.75	25.55	25.36	25.16	24.97
27.61	27.41	27.21	27.01	26.82	26.62	26.43	26.23	26.04	25.84	25.65	25.45	25.26	25.06
27.70	27.51	27.31	27.11	26.91	26.72	26.52	26.33	26.13	25.94	25.74	25.55	25.35	25.16
27.80	27.60	27.41	27.21	27.01	26.81	26.62	26.42	26.23	26.03	25.84	25.64	25.45	25.25
27.90	27.70	27.50	27.30	27.11	26.91	26.71	26.52	26.32	26.13	25.93	25.74	25.54	25.35
27.99	27.80	27.60	27.40	27.20	27.01	26.81	26.61	26.42	26.22	26.03	25.83	25.64	25.44
28.09	27.89	27.70	27.50	27.30	27.10	26.91	26.71	26.51	26.32	26.12	25.93	25.73	25.54
28.19	27.99	27.79	27.60	27.40	27.20	27.00	26.81	26.61	26.41	26.22	26.02	25.83	25.63
28.29	28.09	27.89	27.69	27.49	27.30	27.10	26.90	26.71	26.51	26.31	26.12	25.92	25.73
28.39	28.19	27.99	27.79	27.59	27.39	27.20	27.00	26.80	26.61	26.41	26.21	26.02	25.82
28.48	28.28	28.09	27.89	27.69	27.49	27.29	27.10	26.90	26.70	26.50	26.31	26.11	25.92
28.58	28.38	28.18	27.98	27.79	27.59	27.39	27.19	26.99	26.80	26.60	26.40	26.21	26.01
28.68	28.48	28.28	28.08	27.88	27.68	27.49	27.29	27.09	26.89	26.70	26.50	26.30	26.11
28.78	28.58	28.38	28.18	27.98	27.78	27.58	27.39	27.19	26.99	26.79	26.60	26.40	26.20
28.87	28.68	28.48	28.28	28.08	27.88	27.68	27.48	27.28	27.09	26.89	26.69	26.50	26.30
28.97	28.77	28.57	28.37	28.18	27.98	27.78	27.58	27.38	27.18	26.99	26.79	26.59	26.39
29.07	28.87	28.67	28.47	28.27	28.07	27.88	27.68	27.48	27.28	27.08	26.88	26.69	26.49
29.17	28.97	28.77	28.57	28.37	28.17	27.97	27.77	27.58	27.38	27.18	26.98	26.78	26.59
29.27	29.07	28.87	28.67	28.47	28.27	28.07	27.87	27.67	27.47	27.28	27.08	26.88	26.68
29.37	29.17	28.97	28.77	28.57	28.37	28.17	27.97	27.77	27.57	27.37	27.17	26.98	26.78
29.46	29.26	29.06	28.86	28.66	28.46	28.26	28.07	27.87	27.67	27.47	27.27	27.07	26.87
29.56	29.36	29.16	28.96	28.76	28.56	28.36	28.16	27.96	27.77	27.57	27.37	27.17	26.97
29.66	29.46	29.26	29.06	28.86	28.66	28.46	28.26	28.06	27.86	27.66	27.46	27.27	27.07
29.76	29.56	29.36	29.16	28.96	28.76	28.56	28.36	28.16	27.96	27.76	27.56	27.36	27.16
29.86	29.66	29.46	29.26	29.06	28.86	28.66	28.46	28.26	28.06	27.86	27.66	27.46	27.26
29.96	29.76	29.56	29.35	29.15	28.95	28.75	28.55	28.35	28.15	27.96	27.76	27.56	27.36
30.06	29.86	29.65	29.45	29.25	29.05	28.85	28.65	28.45	28.25	28.05	27.85	27.65	27.46
30.16	29.95	29.75	29.55	29.35	29.15	28.95	28.75	28.55	28.35	28.15	27.95	27.75	27.55
30.25	30.05	29.85	29.65	29.45	29.25	29.05	28.85	28.65	28.45	28.25	28.05	27.85	27.65
30.35	30.15	29.95	29.75	29.55	29.35	29.15	28.95	28.75	28.55	28.35	28.15	27.95	27.75
30.45	30.25	30.05	29.85	29.65	29.45	29.24	29.04	28.84	28.64	28.44	28.24	28.04	27.84
30.55	30.35	30.15	29.95	29.75	29.54	29.34	29.14	28.94	28.74	28.54	28.34	28.14	27.94
30.65	30.45	30.25	30.05	29.84	29.64	29.44	29.24	29.04	28.84	28.64	28.44	28.24	28.04
30.75	30.55	30.35	30.14	29.94	29.74	29.54	29.34	29.14	28.94	28.74	28.54	28.34	28.14
30.85	30.65	30.44	30.24	30.04	29.84	29.64	29.44	29.24	29.04	28.84	28.64	28.43	28.23
30.95	30.75	30.54	30,34	30.14	29.94	29.74	29.54	29.34	29.13	28.93	28.73	28.53	28.33

Table B.2

Alcohol content (%vol)	Alcohol meter											
	22.5	23	23.5	24	24.5	25	25.5	26	26.5	27	27.5	28
34.5	33.48	33.28	33.07	32.87	32.67	32.46	32.26	32.06	31.86	31.65	31.45	31.25
34.6	33.58	33.38	33.17	32.97	32.77	32.56	32.36	32.16	31.96	31.75	31.55	31.35
34.7	33.68	33.48	33.27	33.07	32.87	32.66	32.46	32.26	32.06	31.85	31.65	31.45
34.8	33.78	33.58	33.37	33.17	32.97	32.76	32.56	32.36	32.16	31.95	31.75	31.55
34.9	33.88	33.68	33.47	33.27	33.07	32.86	32.66	32.46	32.26	32.05	31.85	31.65
35	33.98	33.78	33.57	33.37	33.17	32.96	32.76	32.56	32.36	32.15	31.95	31.75
35.1	34.08	33.88	33.67	33.47	33.27	33.06	32.86	32.66	32.46	32.25	32.05	31.85
35.2	34.18	33.98	33.77	33.57	33.37	33.16	32.96	32.76	32.56	32.35	32.15	31.95
35.3	34.28	34.08	33.87	33.67	33.47	33.26	33.06	32.86	32.66	32.45	32.25	32.05
35.4	34.38	34.18	33.97	33.77	33.57	33.36	33.16	32.96	32.76	32.55	32.35	32.15
35.5	34.48	34.28	34.07	33.87	33.67	33.46	33.26	33.06	32.86	32.65	32.45	32.25
35.6	34.58	34.38	34.17	33.97	33.77	33.56	33.36	33.16	32.96	32.75	32.55	32.35
35.7	34.68	34.48	34.27	34.07	33.87	33.66	33.46	33.26	33.06	32.85	32.65	32.45
35.8	34.78	34.58	34.37	34.17	33.97	33.76	33.56	33.36	33.16	32.96	32.75	32.55
35.9	34.88	34.68	34.48	34.27	34.07	33.87	33.66	33.46	33.26	33.05	32.85	32.65
36	34.98	34.78	34.58	34.37	34.17	33.97	33.76	33.56	33.36	33.15	32.95	32.75
36.1	35.08	34.88	34.68	34.47	34.27	34.07	33.86	33.66	33.46	33.25	33.05	32.85
36.2	35.18	34.98	34.78	34.57	34.37	34.17	33.96	33.76	33.56	33.35	33.15	32.95
36.3	35.28	35.08	34.88	34.67	34.47	34.27	34.06	33.86	33.66	33.45	33.25	33.05
36.4	35.38	35.18	34.98	34.77	34.57	34.37	34.16	33.96	33.76	33.55	33.35	33.15
36.5	35.48	35.28	35.08	34.87	34.67	34.47	34.26	34.06	33.86	33.65	33.45	33.25
36.6	35.58	35.38	35.18	34.97	34.77	34.57	34.36	34.16	33.96	33.76	33.55	33.35
36.7	35.68	35.48	35.28	35.07	34.87	34.67	34.46	34.26	34.06	33.86	33.65	33.45
36.8	35.78	35.58	35.38	35.17	34.97	34.77	34.57	34.36	34.16	33.96	33.75	33.55
36.9	35.88	35.68	35.48	35.27	35.07	34.87	34.67	34.46	34.26	34.06	33.85	33.65
37	35.98	35.78	35.58	35.38	35.17	34.97	34.77	34.56	34.36	34.16	33.95	33.75
37.1	36.08	35.88	35.68	35.48	35.27	35.07	34.87	34.66	34.46	34.26	34.05	33.85
37.2	36.19	35.98	35.78	35.58	35.37	35.17	34.97	34.76	34.56	34.36	34.16	33.95
37.3	36.29	36.08	35.88	35.68	35.47	35.27	35.07	34.86	34.66	34.46	34.26	34.05
37.4	36.39	36.18	35.98	35.78	35.57	35.37	35.17	34.97	34.76	34.56	34.36	34.15
37.5	36.49	36.28	36.08	35.88	35.67	35.47	35.27	35.07	34.86	34.66	34.46	34.25
37.6	36.59	36.38	36.18	35.98	35.78	35.57	35.37	35.17	34.96	34.76	34.56	34.36
37.7	36.69	36.48	36.28	36.08	35.88	35.67	35.47	35.27	35.06	34.86	34.66	34.46
37.8	36.79	36.58	36.38	36.18	35.98	35.77	35.57	35.37	35.17	34.96	34.76	34.56
37.9	36.89	36.69	36.48	36.28	36.08	35.87	35.67	35.47	35.27	35.06	34.86	34.66
38	36.99	36.79	36.58	36.38	36.18	35.98	35.77	35.57	35.37	35.16	34.96	34.76
38.1	37.09	36.89	36.68	36.48	36.28	36.08	35.87	35.67	35.47	35.27	35.06	34.86
38.2	37.19	36.99	36.78	36.58	36.38	36.18	35.97	35.77	35.57	35.37	35.16	34.96
38.3	37.29	37.09	36.88	36.68	36.48	36.28	36.07	35.87	35.67	35.47	35.26	35.06
38.4	37.39	37.19	36.99	36.78	36.58	36.38	36.18	35.97	35.77	35.57	35.37	35.16
38.5	37.49	37.29	37.09	36.88	36.68	36.48	36.28	36.07	35.87	35.67	35.47	35.26
38.6	37.59	37.39	37.19	36.98	36.78	36.58	36.38	36.17	35.97	35.77	35.57	35.36
38.7	37.69	37.49	37.29	37.08	36.88	36.68	36.48	36.28	36.07	35.87	35.67	35.47
38.8	37.79	37.59	37.39	37.19	36.98	36.78	36.58	36.38	36.17	35.97	35.77	35.57
38.9	37.89	37.69	37.49	37.29	37.08	36.88	36.68	36.48	36.28	36.07	35.87	35.67

(Cont' d) Unit: %vol

Temperature/℃													
28.5	29	29.5	30	30.5	31	31.5	32	32.5	33	33.5	34	34.5	35
31.05	30.85	30.64	30.44	30.24	30.04	29.84	29.64	29.43	29.23	29.03	28.83	28.63	28.43
31.15	30.94	30.74	30.54	30.34	30.14	29.94	29.73	29.53	29.33	29.13	28.93	28.73	28.53
31.25	31.04	30.84	30.64	30.44	30.24	30.03	29.83	29.63	29.43	29.23	29.03	28.83	28.63
31.35	31.14	30.94	30.74	30.54	30.34	30.13	29.93	29.73	29.53	29.33	29.13	28.93	28.73
31.45	31.24	31.04	30.84	30.64	30.43	30.23	30.03	29.83	29.63	29.43	29.23	29.02	28.82
31.55	31.34	31.14	30.94	30.74	30.53	30.33	30.13	29.93	29.73	29.53	29.32	29.12	28.92
31.64	31.44	31.24	31.04	30.84	30.63	30.43	30.23	30.03	29.83	29.62	29.42	29.22	29.02
31.74	31.54	31.34	31.14	30.93	30.73	30.53	30.33	30.13	29.93	29.72	29.52	29.32	29.12
31.84	31.64	31.44	31.24	31.03	30.83	30.63	30.43	30.23	30.02	29.82	29.62	29.42	29.22
31.94	31.74	31.54	31.34	31.13	30.93	30.73	30.53	30.33	30.12	29.92	29.72	29.52	29.32
32.04	31.84	31.64	31.44	31.23	31.03	30.83	30.63	30.42	30.22	30.02	29.82	29.62	29.42
32.14	31.94	31.74	31.54	31.33	31.13	30.93	30.73	30.52	30.32	30.12	29.92	29.72	29.51
32.24	32.04	31.84	31.64	31.43	31.23	31.03	30.83	30.62	30.42	30.22	30.02	29.82	29.61
32.34	32.14	31.94	31.74	31.53	31.33	31.13	30.93	30.72	30.52	30.32	30.12	29.91	29.71
32.44	32.24	32.04	31.84	31.63	31.43	31.23	31.03	30.82	30.62	30.42	30.22	30.01	29.81
32.54	32.34	32.14	31.94	31.73	31.53	31.33	31.13	30.92	30.72	30.52	30.32	30.11	29.91
32.64	32.44	32.24	32.04	31.83	31.63	31.43	31.23	31.02	30.82	30.62	30.42	30.21	30.01
32.74	32.54	32.34	32.14	31.93	31.73	31.53	31.33	31.12	30.92	30.72	30.52	30.31	30.11
32.84	32.64	32.44	32.24	32.03	31.83	31.63	31.43	31.22	31.02	30.82	30.62	30.41	30.21
32.95	32.74	32.54	32.34	32.13	31.93	31.73	31.53	31.32	31.12	30.92	30.71	30.51	30.31
33.05	32.84	32.64	32.44	32.23	32.03	31.83	31.63	31.42	31.22	31.02	30.81	30.61	30.41
33.15	32.94	32.74	32.54	32.33	32.13	31.93	31.73	31.52	31.32	31.12	30.91	30.71	30.51
33.25	33.04	32.84	32.64	32.43	32.23	32.03	31.83	31.62	31.42	31.22	31.01	30.81	30.61
33.35	33.14	32.94	32.74	32.54	32.33	32.13	31.93	31.72	31.52	31.32	31.12	30.91	30.71
33.45	33.24	33.04	32.84	32.64	32.43	32.23	32.03	31.82	31.62	31.42	31.22	31.01	30.81
33.55	33.34	33.14	32.94	32.74	32.53	32.33	32.13	31.92	31.72	31.52	31.32	31.11	30.91
33.65	33.45	33.24	33.04	32.84	32.63	32.43	32.23	32.02	31.82	31.62	31.42	31.21	31.01
33.75	33.55	33.34	33.14	32.94	32.73	32.53	32.33	32.13	31.92	31.72	31.52	31.31	31.11
33.85	33.65	33.44	33.24	33.04	32.83	32.63	32.43	32.23	32.02	31.82	31.62	31.41	31.21
33.95	33.75	33.54	33.34	33.14	32.94	32.73	32.53	32.33	32.12	31.92	31.72	31.51	31.31
34.05	33.85	33.65	33.44	33.24	33.04	32.83	32.63	32.43	32.22	32.02	31.82	31.62	31.41
34.15	33.95	33.75	33.54	33.34	33.14	32.93	32.73	32.53	32.32	32.12	31.92	31.72	31.51
34.25	34.05	33.85	33.64	33.44	33.24	33.04	32.83	32.63	32.43	32.22	32.02	31.82	31.61
34.35	34.15	33.95	33.75	33.54	33.34	33.14	32.93	32.73	32.53	32.32	32.12	31.92	31.71
34.45	34.25	34.05	33.85	33.64	33.44	33.24	33.03	32.83	32.63	32.42	32.22	32.02	31.81
34.56	34.35	34.15	33.95	33.74	33.54	33.34	33.13	32.93	32.73	32.53	32.32	32.12	31.92
34.66	34.45	34.25	34.05	33.85	33.64	33.44	33.24	33.03	32.83	32.63	32.42	32.22	32.02
34.76	34.55	34.35	34.15	33.95	33.74	33.54	33.34	33.13	32.93	32.73	32.52	32.32	32.12
34.86	34.66	34.45	34.25	34.05	33.84	33.64	33.44	33.24	33.03	32.83	32.63	32.42	32.22
34.96	34.76	34.55	34.35	34.15	33.95	33.74	33.54	33.34	33.13	32.93	32.73	32.52	32.32
35.06	34.86	34.66	34.45	34.25	34.05	33.84	33.64	33.44	33.23	33.03	32.83	32.62	32.42
35.16	34.96	34.76	34.55	34.35	34.15	33.95	33.74	33.54	33.34	33.13	32.93	32.73	32.52
35.26	35.06	34.86	34.66	34.45	34.25	34.05	33.84	33.64	33.44	33.23	33.03	32.83	32.62
35.36	35.16	34.96	34.76	34.55	34.35	34.15	33.94	33.74	33.54	33.34	33.13	32.93	32.73
35.47	35.26	35.06	34.86	34.66	34.45	34.25	34.05	33.84	33.64	33.44	33.23	33.03	32.83

Table B.2

Alcohol content (%vol)	Alcohol meter											
	22.5	23	23.5	24	24.5	25	25.5	26	26.5	27	27.5	28
39	37.99	37.79	37.59	37.39	37.19	36.98	36.78	36.58	36.38	36.17	35.97	35.77
39.1	38.09	37.89	37.69	37.49	37.29	37.08	36.88	36.68	36.48	36.28	36.07	35.87
39.2	38.19	37.99	37.79	37.59	37.39	37.18	36.98	36.78	36.58	36.38	36.17	35.97
39.3	38.29	38.09	37.89	37.69	37.49	37.29	37.08	36.88	36.68	36.48	36.28	36.07
39.4	38.39	38.19	37.99	37.79	37.59	37.39	37.18	36.98	36.78	36.58	36.38	36.17
39.5	38.49	38.29	38.09	37.89	37.69	37.49	37.29	37.08	36.88	36.68	36.48	36.28
39.6	38.60	38.39	38.19	37.99	37.79	37.59	37.39	37.19	36.98	36.78	36.58	36.38
39.7	38.70	38.49	38.29	38.09	37.89	37.69	37.49	37.29	37.08	36.88	36.68	36.48
39.8	38.80	38.60	38.39	38.19	37.99	37.79	37.59	37.39	37.19	36.98	36.78	36.58
39.9	38.90	38.70	38.50	38.29	38.09	37.89	37.69	37.49	37.29	37.09	36.88	36.68
40	39.00	38.80	38.60	38.39	38.19	37.99	37.79	37.59	37.39	37.19	36.98	36.78
40.1	39.10	38.90	38.70	38.50	38.29	38.09	37.89	37.69	37.49	37.29	37.09	36.88
40.2	39.20	39.00	38.80	38.60	38.40	38.19	37.99	37.79	37.59	37.39	37.19	36.99
40.3	39.30	39.10	38.90	38.70	38.50	38.30	38.09	37.89	37.69	37.49	37.29	37.09
40.4	39.40	39.20	39.00	38.80	38.60	38.40	38.20	37.99	37.79	37.59	37.39	37.19
40.5	39.50	39.30	39.10	38.90	38.70	38.50	38.30	38.10	37.89	37.69	37.49	37.29
40.6	39.60	39.40	39.20	39.00	38.80	38.60	38.40	38.20	38.00	37.80	37.59	37.39
40.7	39.70	39.50	39.30	39.10	38.90	38.70	38.50	38.30	38.10	37.90	37.70	37.49
40.8	39.80	39.60	39.40	39.20	39.00	38.80	38.60	38.40	38.20	38.00	37.80	37.60
40.9	39.90	39.70	39.50	39.30	39.10	38.90	38.70	38.50	38.30	38.10	37.90	37.70
41	40.00	39.80	39.60	39.40	39.20	39.00	38.80	38.60	38.40	38.20	38.00	37.80
41.1	40.10	39.90	39.70	39.50	39.30	39.10	38.90	38.70	38.50	38.30	38.10	37.90
41.2	40.20	40.00	39.81	39.61	39.41	39.21	39.01	38.80	38.60	38.40	38.20	38.00
41.3	40.31	40.11	39.91	39.71	39.51	39.31	39.11	38.91	38.71	38.51	38.30	38.10
41.4	40.41	40.21	40.01	39.81	39.61	39.41	39.21	39.01	38.81	38.61	38.41	38.21
41.5	40.51	40.31	40.11	39.91	39.71	39.51	39.31	39.11	38.91	38.71	38.51	38.31
41.6	40.61	40.41	40.21	40.01	39.81	39.61	39.41	39.21	39.01	38.81	38.61	38.41
41.7	40.71	40.51	40.31	40.11	39.91	39.71	39.51	39.31	39.11	38.91	38.71	38.51
41.8	40.81	40.61	40.41	40.21	40.01	39.81	39.61	39.41	39.21	39.01	38.81	38.61
41.9	40.91	40.71	40.51	40.31	40.11	39.91	39.71	39.51	39.31	39.11	38.91	38.71
42	41.01	40.81	40.61	40.41	40.21	40.01	39.82	39.62	39.42	39.22	39.02	38.82
42.1	41.11	40.91	40.71	40.51	40.32	40.12	39.92	39.72	39.52	39.32	39.12	38.92
42.2	41.21	41.01	40.81	40.62	40.42	40.22	40.02	39.82	39.62	39.42	39.22	39.02
42.3	41.31	41.11	40.91	40.72	40.52	40.32	40.12	39.92	39.72	39.52	39.32	39.12
42.4	41.41	41.21	41.02	40.82	40.62	40.42	40.22	40.02	39.82	39.62	39.42	39.22
42.5	41.51	41.31	41.12	40.92	40.72	40.52	40.32	40.12	39.92	39.72	39.53	39.33
42.6	41.61	41.42	41.22	41.02	40.82	40.62	40.42	40.22	40.03	39.83	39.63	39.43
42.7	41.71	41.52	41.32	41.12	40.92	40.72	40.52	40.33	40.13	39.93	39.73	39.53
42.8	41.81	41.62	41.42	41.22	41.02	40.82	40.63	40.43	40.23	40.03	39.83	39.63
42.9	41.92	41.72	41.52	41.32	41.12	40.93	40.73	40.53	40.33	40.13	39.93	39.73
43	42.02	41.82	41.62	41.42	41.23	41.03	40.83	40.63	40.43	40.23	40.03	39.84
43.1	42.12	41.92	41.72	41.52	41.33	41.13	40.93	40.73	40.53	40.34	40.14	39.94
43.2	42.22	42.02	41.82	41.63	41.43	41.23	41.03	40.83	40.64	40.44	40.24	40.04
43.3	42.32	42.12	41.92	41.73	41.53	41.33	41.13	40.94	40.74	40.54	40.34	40.14
43.4	42.42	42.22	42.02	41.83	41.63	41.43	41.23	41.04	40.84	40.64	40.44	40.24

(Cont' d) Unit: %vol

Temperature/℃													
28.5	29	29.5	30	30.5	31	31.5	32	32.5	33	33.5	34	34.5	35
35.57	35.36	35.16	34.96	34.76	34.55	34.35	34.15	33.94	33.74	33.54	33.34	33.13	32.93
35.67	35.47	35.26	35.06	34.86	34.66	34.45	34.25	34.05	33.84	33.64	33.44	33.23	33.03
35.77	35.57	35.36	35.16	34.96	34.76	34.55	34.35	34.15	33.94	33.74	33.54	33.34	33.13
35.87	35.67	35.47	35.26	35.06	34.86	34.66	34.45	34.25	34.05	33.84	33.64	33.44	33.23
35.97	35.77	35.57	35.37	35.16	34.96	34.76	34.55	34.35	34.15	33.95	33.74	33.54	33.34
36.07	35.87	35.67	35.47	35.26	35.06	34.86	34.66	34.45	34.25	34.05	33.84	33.64	33.44
36.18	35.97	35.77	35.57	35.37	35.16	34.96	34.76	34.55	34.35	34,15	33.95	33.74	33.54
36.28	36.07	35.87	35.67	35.47	35.26	35.06	34.86	34.66	34.45	34.25	34.05	33.84	33.64
36.38	36.18	35.97	35.77	35.57	35.37	35.16	34.96	34.76	34.56	34.35	34.15	33.95	33.74
36.48	36.28	36.08	35.87	35.67	35.47	35.27	35.06	34.86	34.66	34.45	34.25	34.05	33.85
36.58	36.38	36.18	35.97	35.77	35.57	35.37	35.17	34.96	34.76	34.56	34.35	34.15	33.95
36.68	36.48	36.28	36.08	35.87	35.67	35.47	35.27	35.06	34.86	34.66	34.46	34.25	34.05
36.78	36.58	36.38	36.18	35.98	35.77	35.57	35.37	35.17	34.96	34.76	34.56	34.35	34.15
36.89	36.68	36.48	36.28	36.08	35.88	35.67	35.47	35.27	35.07	34.86	34.66	34.46	34.25
36.99	36.79	36.58	36.38	36.18	35.98	35.78	35.57	35.37	35.17	34.97	34.76	34.56	34.36
37.09	36.89	36.69	36.48	36.28	36.08	35.88	35.68	35.47	35.27	35.07	34.86	34.66	34.46
37.19	36.99	36.79	36.59	36.38	36.18	35.98	35.78	35.57	35.37	35.17	34.97	34.76	34.56
37.29	37.09	36.89	36.69	36.49	36.28	36.08	35.88	35.68	35.47	35.27	35.07	34.87	34.66
37.39	37.19	36.99	36.79	36.59	36.39	36.18	35.98	35.78	35.58	35.37	35.17	34.97	34.77
37.50	37.29	37.09	36.89	36.69	36.49	36.29	36.08	35.88	35.68	35.48	35.27	35.07	34.87
37.60	37.40	37.20	36.99	36.79	36.59	36.39	36.19	35.98	35.78	35.58	35.38	35.17	34.97
37.70	37.50	37.30	37.10	36.89	36.69	36.49	36.29	36.09	35.88	35.68	35.48	35.28	35.07
37.80	37.60	37.40	37.20	37.00	36.79	36.59	36.39	36.19	35.99	35.78	35.58	35.38	35.18
37.90	37.70	37.50	37.30	37.10	36.90	36.69	36.49	36.29	36.09	35.89	35.68	35.48	35.28
38.01	37.80	37.60	37.40	37.20	37.00	36.80	36.60	36.39	36.19	35.99	35.79	35.58	35.38
38.11	37.91	37.71	37.50	37.30	37.10	36.90	36.70	36.50	36.29	36.09	35.89	35.69	35.48
38.21	38.01	37.81	37.61	37.40	37.20	37.00	36.80	36.60	36.40	36.19	35.99	35.79	35.59
38.31	38.11	37.91	37.71	37.51	37.31	37.10	36.90	36.70	36.50	36.30	36.09	35.89	35.69
38.41	38.21	38.01	37.81	37.61	37.41	37.21	37.01	36.80	36.60	36.40	36.20	36.00	35.79
38.51	38.31	38.11	37.91	37.71	37.51	37.31	37.11	36.91	36.70	36.50	36.30	36.10	35.90
38.62	38.42	38.22	38.01	37.81	37.61	37.41	37.21	37.01	36.81	36.61	36.40	36.20	36.00
38.72	38.52	38.32	38.12	37.92	37.72	37.51	37.31	37.11	36.91	36.71	36.51	36.30	36.10
38.82	38.62	38.42	38.22	38.02	37.82	37.62	37.42	37.21	37.01	36.81	36.61	36.41	36.20
38.92	38.72	38.52	38.32	38.12	37.92	37.72	37.52	37.32	37.12	36.91	36.71	36.51	36.31
39.02	38.82	38.62	38.42	38.22	38.02	37.82	37.62	37.42	37.22	37.02	36.81	36.61	36.41
39.13	38.93	38.73	38.53	38.33	38.12	37.92	37.72	37.52	37.32	37.12	36.92	36.72	36.51
39.23	39.03	38.83	38.63	38.43	38.23	38.03	37.83	37.62	37.42	37.22	37.02	36.82	36.62
39.33	39.13	38.93	38.73	38.53	38.33	38.13	37.93	37.73	37.53	37.33	37.12	36.92	36.72
39.43	39.23	39.03	38.83	38.63	38.43	38.23	38.03	37.83	37.63	37.43	37.23	37.03	36.82
39.53	39.33	39.14	38.94	38.74	38.53	38.33	38.13	37.93	37.73	37.53	37.33	37.13	36.93
39.64	39.44	39.24	39.04	38.84	38.64	38.44	38.24	38.04	37.84	37.63	37.43	37.23	37.03
39.74	39.54	39.34	39.14	38.94	38.74	38.54	38.34	38.14	37.94	37.74	37.54	37.33	37.13
39.84	39.64	39.44	39.24	39.04	38.84	38.64	38.44	38.24	38.04	37.84	37.64	37.44	37.24
39.94	39.74	39.54	39.34	39.15	38.95	38.75	38.55	38.34	38.14	37.94	37.74	37.54	37.34
40.04	39.85	39.65	39.45	39.25	39.05	38.85	38.65	38.45	38.25	38.05	37.85	37.64	37.44

Table B.2

Alcohol content (%vol)	Alcohol meter											
	22.5	23	23.5	24	24.5	25	25.5	26	26.5	27	27.5	28
43.5	42.52	42.32	42.13	41.93	41.73	41.53	41.34	41.14	40.94	40.74	40.54	40.35
43.6	42.62	42.42	42.23	42.03	41.83	41.64	41.44	41.24	41.04	40.84	40.65	40.45
43.7	42.72	42.52	42.33	42.13	41.93	41.74	41.54	41.34	41.14	40.95	40.75	40.55
43.8	42.82	42.62	42.43	42.23	42.03	41.84	41.64	41.44	41.25	41.05	40.85	40.65
43.9	42.92	42.73	42.53	42.33	42.14	41.94	41.74	41.54	41.35	41.15	40.95	40.75
44	43.02	42.83	42.63	42.43	42.24	42.04	41.84	41.65	41.45	41.25	41.05	40.86
44.1	43.12	42.93	42.73	42.53	42.34	42.14	41.94	41.75	41.55	41.35	41.16	40.96
44.2	43.22	43.03	42.83	42.64	42.44	42.24	42.05	41.85	41.65	41.45	41.26	41.06
44.3	43.32	43.13	42.93	42.74	42.54	42.34	42.15	41.95	41.75	41.56	41.36	41.16
44.4	43.43	43.23	43.03	42.84	42.64	42.45	42.25	42.05	41.86	41.66	41.46	41.26
44.5	43.53	43.33	43.13	42.94	42.74	42.55	42.35	42.15	41.96	41.76	41.56	41.37
44.6	43.63	43.43	43.24	43.04	42.84	42.65	42.45	42.26	42.06	41.86	41.67	41.47
44.7	43.73	43.53	43.34	43.14	42.95	42.75	42.55	42.36	42.16	41.96	41.77	41.57
44.8	43.83	43.63	43.44	43.24	43.05	42.85	42.65	42.46	42.26	42.07	41.87	41.67
44.9	43.93	43.73	43.54	43.34	43.15	42.95	42.76	42.56	42.36	42.17	41.97	41.77
45	44.03	43.83	43.64	43.44	43.25	43.05	42.86	42.66	42.47	42.27	42.07	41.88
45.1	44.13	43.94	43.74	43.55	43.35	43.16	42.96	42.76	42.57	42.37	42.17	41.98
45.2	44.23	44.04	43.84	43.65	43.45	43.26	43.06	42.87	42.67	42.47	42.28	42.08
45.3	44.33	44.14	43.94	43.75	43.55	43.36	43.16	42.97	42.77	42.57	42.38	42.18
45.4	44.43	44.24	44.04	43.85	43.65	43.46	43.26	43.07	42.87	42.68	42.48	42.28
45.5	44.53	44.34	44.14	43.95	43.76	43.56	43.37	43.17	42.97	42.78	42.58	42.39
45.6	44.63	44.44	44.25	44.05	43.86	43.66	43.47	43.27	43.08	42.88	42.68	42.49
45.7	44.73	44.54	44.35	44.15	43.96	43.76	43.57	43.37	43.18	42.98	42.79	42.59
45.8	44.84	44.64	44.45	44.25	44.06	43.86	43.67	43.47	43.28	43.08	42.89	42.69
45.9	44.94	44.74	44.55	44.35	44.16	43.97	43.77	43.58	43.38	43.19	42.99	42.80
46	45.04	44.84	44.65	44.46	44.26	44.07	43.87	43.68	43.48	43.29	43.09	42.90
46.1	45.14	44.94	44.75	44.56	44.36	44.17	43.97	43.78	43.58	43.39	43.19	43.00
46.2	45.24	45.04	44.85	44.66	44.46	44.27	44.08	43.88	43.69	43.49	43.30	43.10
46.3	45.34	45.15	44.95	44.76	44.57	44.37	44.18	43.98	43.79	43.59	43.40	43.20
46.4	45.44	45.25	45.05	44.86	44.67	44.47	44.28	44.08	43.89	43.70	43.50	43.31
46.5	45.54	45.35	45.15	44.96	44.77	44.57	44.38	44.19	43.99	43.80	43.60	43.41
46.6	45.64	45.45	45.26	45.06	44.87	44.68	44.48	44.29	44.09	43.90	43.70	43.51
46.7	45.74	45.55	45.36	45.16	44.97	44.78	44.58	44.39	44.20	44.00	43.81	43.61
46.8	45.84	45.65	45.46	45.26	45.07	44.88	44.68	44.49	44.30	44.10	43.91	43.71
46.9	45.94	45.75	45.56	45.37	45.17	44.98	44.79	44.59	44.40	44.20	44.01	43.82
47	46.04	45.85	45.66	45.47	45.27	45.08	44.89	44.69	44.50	44.31	44.11	43.92
47.1	46.14	45.95	45.76	45.57	45.37	45.18	44.99	44.80	44.60	44.41	44.21	44.02
47.2	46.24	46.05	45.86	45.67	45.48	45.28	45.09	44.90	44.70	44.51	44.32	44.12
47.3	46.35	46.15	45.96	45.77	45.58	45.38	45.19	45.00	44.81	44.61	44.42	44.22
47.4	46.45	46.25	46.06	45.87	45.68	45.49	45.29	45.10	44.91	44.71	44.52	44.33
47.5	46.55	46.36	46.16	45.97	45.78	45.59	45.39	45.20	45.01	44.82	44.62	44.43
47.6	46.65	46.46	46.26	46.07	45.88	45.69	45.50	45.30	45.11	44.92	44.72	44.53
47.7	46.75	46.56	46.37	46.17	45.98	45.79	45.60	45.41	45.21	45.02	44.83	44.63
47.8	46.85	46.66	46.47	46.28	46.08	45.89	45.70	45.51	45.31	45.12	44.93	44.74
47.9	46.95	46.76	46.57	46.38	46.18	45.99	45.80	45.61	45.42	45.22	45.03	44.84

(Cont' d) Unit: %vol

Temperature/℃													
28.5	29	29.5	30	30.5	31	31.5	32	32.5	33	33.5	34	34.5	35
40.15	39.95	39.75	39.55	39.35	39.15	38.95	38.75	38.55	38.35	38.15	37.95	37.75	37.55
40.25	40.05	39.85	39.65	39.45	39.25	39.05	38.85	38.65	38.45	38.25	38.05	37.85	37.65
40.35	40.15	39.95	39.75	39.56	39.36	39.16	38.96	38.76	38.56	38.36	38.16	37.95	37.75
40.45	40.25	40.06	39.86	39.66	39.46	39.26	39.06	38.86	38.66	38.46	38.26	38.06	37.86
40.56	40.36	40.16	39.96	39.76	39.56	39.36	39.16	38.96	38.76	38.56	38.36	38.16	37.96
40.66	40.46	40.26	40.06	39.86	39.66	39.46	39.27	39.07	38.87	38.67	38.47	38.26	38.06
40.76	40.56	40.36	40.16	39.97	39.77	39.57	39.37	39.17	38.97	38.77	38.57	38.37	38.17
40.86	40.66	40.47	40.27	40.07	39.87	39.67	39.47	39.27	39.07	38.87	38.67	38.47	38.27
40.96	40.77	40.57	40.37	40.17	39.97	39.77	39.57	39.37	39.18	38.98	38.78	38.58	38.37
41.07	40.87	40.67	40.47	40.27	40.07	39.88	39.68	39.48	39.28	39.08	38.88	38.68	38.48
41.17	40.97	40.77	40.57	40.38	40.18	39.98	39.78	39.58	39.38	39.18	38.98	38.78	38.58
41.27	41.07	40.87	40.68	40.48	40.28	40.08	39.88	39.68	39.48	39.29	39.09	38.89	38.69
41.37	41.18	40.98	40.78	40.58	40.38	40.18	39.99	39.79	39.59	39.39	39.19	38.99	38.79
41.47	41.28	41.08	40.88	40.68	40.49	40.29	40.09	39.89	39.69	39.49	39.29	39.09	38.89
41.58	41.38	41.18	40.98	40.79	40.59	40.39	40.19	39.99	39.79	39.60	39.40	39.20	39.00
41.68	41.48	41.28	41.09	40.89	40.69	40.49	40.29	40.10	39.90	39.70	39.50	39.30	39.10
41.78	41.58	41.39	41.19	40.99	40.79	40.60	40.40	40.20	40.00	39.80	39.60	39.40	39.20
41.88	41.69	41.49	41.29	41.09	40.90	40.70	40.50	40.30	40.10	39.91	39.71	39.51	39.31
41.99	41.79	41.59	41.39	41.20	41.00	40.80	40.60	40.41	40.21	40.01	39.81	39.61	39.41
42.09	41.89	41.69	41.50	41.30	41.10	40.90	40.71	40.51	40.31	40.11	39.91	39.71	39.51
42.19	41.99	41.80	41.60	41.40	41.21	41.01	40.81	40.61	40.41	40.22	40.02	39.82	39.62
42.29	42.10	41.90	41.70	41.51	41.31	41.11	40.91	40.72	40.52	40.32	40.12	39.92	39.72
42.39	42.20	42.00	41.81	41.61	41.41	41.21	41.02	40.82	40.62	40.42	40.22	40.03	39.83
42.50	42.30	42.10	41.91	41.71	41.51	41.32	41.12	40,92	40.72	40.53	40.33	40.13	39.93
42.60	42.40	42.21	42.01	41.81	41.62	41.42	41.22	41.02	40.83	40.63	40.43	40.23	40.03
42.70	42.51	42.31	42.11	41.92	41.72	41.52	41.33	41.13	40.93	40.73	40.53	40.34	40.14
42.80	42.61	42.41	42.22	42.02	41.82	41.63	41.43	41.23	41.03	40.84	40.64	40.44	40.24
42.91	42.71	42.51	42.32	42.12	41.93	41.73	41.53	41.33	41.14	40.94	40.74	40.54	40.35
43.01	42.81	42.62	42.42	42.22	42.03	41.83	41.63	41.44	41.24	41.04	40.85	40.65	40.45
43.11	42.91	42.72	42.52	42.33	42.13	41.93	41.74	41.54	41.34	41.15	40.95	40.75	40.55
43.21	43.02	42.82	42.63	42.43	42.23	42.04	41.84	41.64	41.45	41.25	41.05	40.85	40.66
43.31	43.12	42.92	42.73	42.53	42.34	42.14	41.94	41.75	41.55	41.35	41.16	40.96	40.76
43.42	43.22	43.03	42.83	42.64	42.44	42.24	42.05	41.85	41.65	41.46	41.26	41.06	40.86
43.52	43.32	43.13	42.93	42.74	42.54	42.35	42.15	41.95	41.76	41.56	41.36	41.17	40.97
43.62	43.43	43.23	43.04	42.84	42.65	42.45	42.25	42.06	41.86	41.66	41.47	41.27	41.07
43.72	43.53	43.33	43.14	42.94	42.75	42.55	42.36	42.16	41.96	41.77	41.57	41.37	41.18
43.83	43.63	43.44	43.24	43.05	42.85	42.66	42.46	42.26	42.07	41.87	41.67	41.48	41.28
43.93	43.73	43.54	43.34	43.15	42.95	42.76	42.56	42.37	42.17	41.97	41.78	41.58	41.38
44.03	43.84	43.64	43.45	43.25	43.06	42.86	42.67	42.47	42.27	42.08	41.88	41.68	41.49
44.13	43.94	43.74	43.55	43.35	43.16	42.96	42.77	42.57	42.38	42.18	41.98	41.79	41.59
44.24	44.04	43.85	43.65	43.46	43.26	43.07	42.87	42.68	42.48	42.28	42.09	41.89	41.70
44.34	44.14	43.95	43.75	43.56	43.37	43.17	42.98	42.78	42.58	42.39	42.19	42.00	41.80
44.44	44.25	44.05	43.86	43.66	43.47	43.27	43.08	42.88	42.69	42.49	42.30	42.10	41.90
44.54	44.35	44.15	43.96	43.77	43.57	43.38	43.18	42.99	42.79	42.60	42.40	42.20	42.01
44.64	44.45	44.26	44.06	43.87	43.67	43.48	43.28	43.09	42.89	42.70	42.50	42.31	42.11

Table B.2

Alcohol content (%vol)	Alcohol meter											
	22.5	23	23.5	24	24.5	25	25.5	26	26.5	27	27.5	28
48	47.05	46.86	46.67	46.48	46.29	46.09	45.90	45.71	45.52	45.33	45.13	44.94
48.1	47.15	46.96	46.77	46.58	46.39	46.20	46.00	45.81	45.62	45.43	45.23	45.04
48.2	47.25	47.06	46.87	46.68	46.49	46.30	46.11	45.91	45.72	45.53	45.34	45.14
48.3	47.35	47.16	46.97	46.78	46.59	46.40	46.21	46.02	45.82	45.63	45.44	45.25
48.4	47.45	47.26	47.07	46.88	46.69	46.50	46.31	46.12	45.92	45.73	45.54	45.35
48.5	47.55	47.36	47.17	46.98	46.79	46.60	46.41	46.22	46.03	45.83	45.64	45.45
48.6	47.65	47.46	47.27	47.08	46.89	46.70	46.51	46.32	46.13	45.94	45.74	45.55
48.7	47.75	47.57	47.38	47.18	46.99	46.80	46.61	46.42	46.23	46.04	45.85	45.65
48.8	47.86	47.67	47.48	47.29	47.10	46.90	46.71	46.52	46.33	46.14	45.95	45.76
48.9	47.96	47.77	47.58	47.39	47.20	47.01	46.82	46.62	46.43	46.24	46.05	45.86
49	48.06	47.87	47.68	47.49	47.30	47.11	46.92	46.73	46.54	46.34	46.15	45.96
49.1	48.16	47.97	47.78	47.59	47.40	47.21	47.02	46.83	46.64	46.45	46.25	46.06
49.2	48.26	48.07	47.88	47.69	47.50	47.31	47.12	46.93	46.74	46.55	46.36	46.16
49.3	48.36	48.17	47.98	47.79	47.60	47.41	47.22	47.03	46.84	46.65	46.46	46.27
49.4	48.46	48.27	48.08	47.89	47.70	47.51	47.32	47.13	46.94	46.75	46.56	46.37
49.5	48.56	48.37	48.18	47.99	47.80	47.61	47.42	47.23	47.04	46.85	46.66	46.47
49.6	48.66	48.47	48.28	48.09	47.91	47.72	47.53	47.34	47.15	46.95	46.76	46.57
49.7	48.76	48.57	48.38	48.20	48.01	47.82	47.63	47.44	47.25	47.06	46.87	48.68
49.8	48.86	48.67	48.49	48.30	48.11	47.92	47.73	47.54	47.35	47.16	46.97	46.78
49.9	48.96	48.77	48.59	48.40	48.21	48.02	47.83	47.64	47.45	47.26	47.07	46.88
50	49.06	48.88	48.69	48.50	48.31	48.12	47.93	47.74	47.55	47.36	47.17	46.98

(Cont' d) Unit: %vol

Temperature/℃													
28.5	29	29.5	30	30.5	31	31.5	32	32.5	33	33.5	34	34.5	35
44.75	44.55	44.36	44.17	43.97	43.78	43.58	43.39	43.19	43.00	42.80	42.61	42.41	42.21
44.85	44.66	44.46	44.27	44.07	43.88	43.69	43.49	43.30	43.10	42.91	42.71	42.51	42.32
44.95	44.76	44.56	44.37	44.18	43.98	43.79	43.59	43.40	43.20	43.01	42.81	42.62	42.42
45.05	44.86	44.67	44.47	44.28	44.09	43.89	43.70	43.50	43.31	43.11	42.92	42.72	42.53
45.16	44.96	44.77	44.58	44.38	44.19	43.99	43.80	43.61	43.41	43.22	43.02	42.83	42.63
45.26	45.06	44.87	44.68	44.49	44.29	44.10	43.90	43.71	43.51	43.32	43.12	42.93	42.73
45.36	45.17	44.97	44.78	44.59	44.39	44.20	44.01	43.81	43.62	43.42	43.23	43.03	42.84
45.46	45.27	45.08	44.88	44.69	44.50	44.30	44.11	43.92	43.72	43.53	43.33	43.14	42.94
45.56	45.37	45.18	44.99	44.79	44.60	44.41	44.21	44.02	43.82	43.63	43.44	43.24	43.05
45.67	45.47	45.28	45.09	44.90	44.70	44.51	44.32	44.12	43.93	43.73	43.54	43.34	43.15
45.77	45.58	45.38	45.19	45.00	44.81	44.61	44.42	44.23	44.03	43.84	43.64	43.45	43.25
45.87	45.68	45.49	45.29	45.10	44.91	44.72	44.52	34.33	44.13	43.94	43.75	43.55	43.36
45.97	45.78	45.59	45.40	45.20	45.01	44.82	44.63	44.43	44.24	44.04	43.85	43.66	43.46
46.08	45.88	45.69	45.50	45.31	45.11	44.92	44.73	44.53	44.34	44.15	43.95	43.76	43.56
46.18	45.99	45.79	45.60	45.41	45.22	45.02	44.83	44.64	44.44	44.25	44.06	43.86	43.67
46.28	46.09	45.90	45.70	45.51	45.32	45.13	44.93	44.74	44.55	44.35	44.16	43.97	43.77
46.38	46.19	46.00	45.81	45.61	45.42	45.23	45.04	44.84	44.65	44.46	44.26	44.07	43.88
46.48	46.29	46.10	45.91	45.72	45.53	45.33	45.14	44.95	44.75	44.56	44.37	44.17	43.98
46.59	46.40	46.20	46.01	45.82	45.63	45.44	45.24	45.05	44.86	44.66	44.47	44.28	44.08
46.69	46.50	46.31	46.11	45.92	45.73	45.54	45.35	45.15	44.96	44.77	44.57	44.38	44.19
46.79	46.60	46.41	46.22	46.03	45.83	45.64	45.45	45.26	45.06	44.87	44.68	44.49	44.29

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