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奶 酒

Milk wines

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中国国家标准化管理委员会

前 言

本标准的附录 A、附录 B 为规范性附录。

本标准由全国食品工业标准化技术委员会提出。

本标准由全国酿酒标准化技术委员会归口。

本标准起草单位：内蒙古河套酒业集团股份有限公司、中国食品发酵工业研究院、内蒙古自治区酒业协会、内蒙古奶酒研究所、包头龙驹乳业有限责任公司、内蒙古标准化院。

本标准主要起草人：许聪、杨玉珍、郭新光、马飞、郝寻梅、唐芳。

奶 酒

1 范围

本标准规定了奶酒的术语和定义、产品分类、要求、分析方法、检验规则和标志、包装、运输、贮存。本标准适用于奶酒的生产、检验与销售。

2 规范性引用文件

下列文件中的条款通过本标准的引用而成为本标准的条款。凡是注日期的引用文件，其随后所有的修改单(不包括勘误的内容)或修订版均不适用于本标准，然而，鼓励根据本标准达成协议的各方研究是否可使用这些文件的最新版本。凡是不注日期的引用文件，其最新版本适用于本标准。

GB/T 191 包装储运图示标志

GB 317 白砂糖

GB/T 601 化学试剂 标准滴定溶液的制备

GB/T 603 化学试剂 试验方法中所用制剂及制品的制备(GB/T 603—2002, ISO 6353-1:1982, NEQ)

GB 2757 蒸馏酒及配制酒卫生标准

GB 2758 发酵酒卫生标准

GB/T 5009.48 蒸馏酒及配制酒卫生标准的分析方法

GB/T 6682 分析实验室用水规格和试验方法(GB/T 6682—2008, ISO 3696:1987, MOD)

GB/T 6914 生鲜牛乳收购标准

GB 10344 预包装食品酒标签通则

GB 11674 乳清粉卫生标准

GB 19301 鲜乳卫生标准

QB/T 3782 脱盐乳清粉

JJF 1070 定量包装商品净含量计量检验规则

定量包装商品计量监督管理办法(国家质量监督检验检疫总局[2005]第75号令)

3 术语和定义

下列术语和定义适用于本标准。

3.1

奶酒 milk wines

以动物乳、乳清或乳清粉等为主要原料，经发酵等工艺酿制而成的饮料酒。

3.2

发酵型奶酒 fermented milk wines

以牛奶、乳清或乳清粉等为主要原料，经发酵、过滤、杀菌等工艺酿制而成的发酵酒。

注：指牛奶酒。如以马奶或羊奶为主要原料发酵酿制而成的，应称为马奶酒或羊奶酒，并执行相应的产品标准。

3.3

蒸馏型奶酒 distilled milk wines

以动物乳、乳清或乳清粉等为主要原料，经发酵、蒸馏等工艺酿制而成的蒸馏酒。

4 产品分类

4.1 按加工工艺分为发酵型奶酒和蒸馏型奶酒。

4.2 按含糖量发酵型奶酒分为：干型、半干型、半甜型和甜型。

5 要求

5.1 原辅料要求

5.1.1 牛乳应符合 GB/T 6914 和 GB 19301 的要求。

5.1.2 乳清粉应符合 QB/T 3782 和 GB 11674 的要求。

5.1.3 白砂糖应符合 GB 317 的要求。

5.2 感官要求

5.2.1 发酵型奶酒

发酵型奶酒的感官要求应符合表 1 的规定。

表 1 发酵型奶酒感官要求

项 目	干型、半干型	半甜型、甜型
外观	淡黄色或淡黄绿色，清亮透明。允许有少量蛋白沉淀	
香气	具有清雅、纯正的乳香，香气优雅	
口味	酒体丰满，舒适，爽口	酒体醇厚，酸甜协调
风格	具有本品典型风格	

5.2.2 蒸馏型奶酒

蒸馏型奶酒的感官要求应符合表 2 的规定。

表 2 蒸馏型奶酒感官要求

项 目	要 求
外观	无色、清亮透明，无悬浮物、无沉淀
香气	具有纯正、清雅的乳香与酒香
口味	酒体绵柔、醇和，无异味
风格	具有本品典型风格

5.3 理化要求

5.3.1 发酵型奶酒

发酵型奶酒的理化要求应符合表 3 的规定。

表 3 发酵型奶酒理化要求

项 目	干型	半干型	半甜型	甜型
酒精度 ^a /(%vol)	≤ 18			
总酸(以乳酸计)/(g/L)	4.0~8.0			
总糖(以葡萄糖计)/(g/L)	≤15.0	15.1~40.0	40.1~70.0	≥70.1
氨基酸态氮/(g/L)	≥ 0.05			

^a 酒精度标签标示值与实测值之差不得超过±1.0%vol。

5.3.2 蒸馏型奶酒

蒸馏型奶酒的理化要求应符合表 4 的规定。

表 4 蒸馏型奶酒理化要求

项 目	要 求
酒精度*/(%vol)	19~48
总酸(以乳酸计)/(g/L) \geq	0.5
总酯(以乙酸乙酯计)/(g/L) \leq	2.0
甲醇 ^b /(g/L) \leq	0.1
氨基酸态氮/(g/L) \geq	0.01
^a 酒精度标签标示值与实测值之差不得超过 $\pm 1.0\%$ vol。 ^b 甲醇按 100%乙醇折算。	

5.4 卫生要求

发酵型奶酒的卫生要求应符合 GB 2758 的规定；

蒸馏型奶酒的卫生要求应符合 GB 2757 的规定。

5.5 净含量

按国家质量监督检验检疫总局[2005]第 75 号令执行。

6 分析方法

本标准中所用的水,在未注明其他要求时,应符合 GB/T 6682 的规格。所用试剂,在未注明其他规格时,均指分析纯(AR)。

6.1 感官检查

6.1.1 酒样的准备

将酒样密码编号,置于水浴中,调温至 20℃~25℃。将洁净、干燥的评酒杯对应酒样编号,对号注入酒样约 25 mL。

6.1.2 外观评价

将注入酒样的评酒杯置于明亮处,举杯齐眉,用眼观察杯中酒的透明度、澄清度以及有无沉淀物等,做好详细记录。

6.1.3 香气与口味评价

手握杯柱,慢慢将酒杯置于鼻孔下方,嗅闻其挥发香气,慢慢摇动酒杯,嗅闻香气。用手握酒杯腹部 2 min,摇动后,再嗅闻香气。依据上述程序,判断是原料香或有其他异香,写出评语。

饮入少量酒样(约 2 mL)于口中,尽量均匀分布于味觉区,仔细品评口感,回味及后味,记录口感特征。

6.1.4 风格评价

依据外观、香气、口味的特征,综合评价酒样的风格及典型性程度,写出评价结论。

6.2 酒精度

6.2.1 原理

试样经过蒸馏,用酒精计测定馏出液中酒精的含量。

6.2.2 仪器

6.2.2.1 电炉:500 W~800 W。

6.2.2.2 冷凝管:直形。

6.2.2.3 酒精计:标准温度 20℃,分度值为 0.5。

6.2.2.4 温度计:50℃,分度值为 0.1℃。

6.2.2.5 量筒:100 mL。

6.2.3 分析步骤

在约 20℃时,用容量瓶量取试样 100 mL,全部移入 500 mL 蒸馏瓶中。用 100 mL 水分次洗涤容量瓶,洗液并入蒸馏瓶中,加数粒玻璃珠。装上冷凝管,通入冷水,用原 100 mL 容量瓶接收馏出液(外加冰浴)。加热蒸馏,直至收集馏出液体积约 95 mL 时,停止蒸馏。于水浴中冷却至约 20℃,用水定

容。摇匀。倒入 100 mL 量筒中,测量馏出液的温度与酒精度。按测得的实际温度和酒精度标示值,发酵型奶酒查附录 A;蒸馏型奶酒查附录 B,换算成 20 °C 时的酒精度。

所得结果表示至一位小数。

6.2.4 精密度

在重复性条件下获得的两次独立测定结果的绝对差值不得超过算术平均值的 5%。

6.3 总酸、氨基酸态氮

6.3.1 原理

氨基酸是两性化合物,分子中的氨基与甲醛反应后失去碱性,而使羧基呈酸性。用氢氧化钠标准溶液滴定羧基,通过氢氧化钠标准溶液消耗的量可以计算出氨基酸态氮的含量。

6.3.2 试剂和溶液

6.3.2.1 甲醛溶液:36%~38%(无缩合沉淀)。

6.3.2.2 无二氧化碳的水:按 GB/T 603 制备。

6.3.2.3 氢氧化钠标准滴定溶液(0.1 mol/L):按 GB/T 601 配制和标定。

6.3.3 仪器

6.3.3.1 酸度计或自动电位滴定仪:精度 0.01 pH。

6.3.3.2 磁力搅拌器。

6.3.3.3 分析天平:感量 0.1 mg。

6.3.4 分析步骤

按仪器使用说明书调试和校正酸度计。

吸取试样 10 mL 于 150 mL 烧杯中,加入无二氧化碳的水 50 mL。烧杯中放入磁力搅拌棒,置于电磁搅拌器上,开启搅拌,用氢氧化钠标准滴定溶液(6.3.2.3)滴定,开始时可快速滴加氢氧化钠标准滴定溶液,当滴定至 pH=7.0 时,放慢滴定速度,每次加半滴氢氧化钠标准滴定溶液,直至 pH=8.20 为终点。记录消耗 0.1 mol/L 氢氧化钠标准滴定溶液的体积(V_1)。加入甲醛溶液(6.3.2.1)10 mL,继续用氢氧化钠标准滴定溶液滴定至 pH=9.20,记录加甲醛后消耗氢氧化钠标准滴定溶液的体积(V_2)。同时做空白试验,分别记录不加甲醛溶液及加入甲醛溶液时,空白试验所消耗氢氧化钠标准滴定溶液的体积(V_3 、 V_4)。

6.3.5 结果计算

a) 试样中总酸含量按式(1)计算:

$$X_1 = \frac{(V_1 - V_3) \times c \times 90}{V \times 1000} \times 1000 \dots\dots\dots(1)$$

式中:

X_1 ——试样中总酸的含量,单位为克每升(g/L);

V_1 ——测定试样时,消耗氢氧化钠标准滴定溶液的体积,单位为毫升(mL);

V_3 ——空白试验时,消耗氢氧化钠标准滴定溶液的体积,单位为毫升(mL);

c ——氢氧化钠标准滴定溶液的浓度,单位为摩尔每升(mol/L);

90——乳酸的摩尔质量的数值,单位为克每摩尔(g/mol)[$M(\text{C}_3\text{H}_6\text{O}_3)=90$];

V ——吸取试样的体积,单位为毫升(mL)。

b) 试样中氨基酸态氮含量按式(2)计算:

$$X_2 = \frac{(V_2 - V_4) \times c \times 14}{V \times 1000} \times 1000 \dots\dots\dots(2)$$

式中:

X_2 ——试样中氨基酸态氮的含量,单位为克每升(g/L);

V_2 ——加甲醛后,测定试样时消耗氢氧化钠标准滴定溶液的体积,单位为毫升(mL);

V_4 ——加甲醛后,空白试验时消耗氢氧化钠标准滴定溶液的体积,单位为毫升(mL);

c ——氢氧化钠标准滴定溶液的浓度,单位为摩尔每升(mol/L);

14——氮的摩尔质量的数值,单位为克每摩尔(g/mol)[$M(\text{N})=14$];

V ——吸取试样的体积,单位为毫升(mL)。

所得结果表示至一位小数。

6.3.6 精密度

在重复性条件下获得的两次独立测定结果的绝对差值不得超过算术平均值的5%。

6.4 总糖

6.4.1 廉爱农法

适用于甜型酒和半甜型酒。

6.4.1.1 原理

费林溶液与还原糖共沸,生成氧化亚铜沉淀。以次甲基蓝为指示液,用试样水解液滴定沸腾状态的费林溶液。达到终点时,稍微过量的还原糖将次甲基蓝还原成无色为终点,依据试样水解液的消耗体积,计算总糖含量。

6.4.1.2 试剂

6.4.1.2.1 费林甲液:称取硫酸铜($\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$)69.28 g,加水溶解并定容至1 000 mL。

6.4.1.2.2 费林乙液:称取酒石酸钾钠346 g及氢氧化钠100 g,加水溶解并定容至1 000 mL,摇匀,过滤,备用。

6.4.1.2.3 葡萄糖标准溶液(2.5 g/L):称取经103℃~105℃烘干至恒重的无水葡萄糖2.5 g(精确至0.000 1 g),加水溶解,并加浓盐酸5 mL,再用水定容至1 000 mL。

6.4.1.2.4 次甲基蓝指示液(10 g/L):称取次甲基蓝1.0 g,加水溶解并定容至100 mL。

6.4.1.2.5 盐酸溶液(6 mol/L):量取浓盐酸50 mL,加水稀释至100 mL。

6.4.1.2.6 甲基红指示液(1 g/L):称取甲基红0.10 g,溶于乙醇并稀释至100 mL。

6.4.1.2.7 氢氧化钠溶液(200 g/L):称取氢氧化钠20 g,用水溶解并稀释至100 mL。

6.4.1.3 仪器

6.4.1.3.1 分析天平:感量0.1 mg。

6.4.1.3.2 分析天平:感量0.01 g。

6.4.1.3.3 电炉:300 W~500 W。

6.4.1.4 分析步骤

6.4.1.4.1 标定费林溶液的预滴定

准确吸取费林甲、乙液各5 mL于250 mL锥形瓶中,加水30 mL,混合后置于电炉上加热至沸腾。滴入葡萄糖标准溶液(6.4.1.2.3),保持沸腾,待试液蓝色即将消失时,加入次甲基蓝指示液(6.4.1.2.4)两滴,继续用葡萄糖标准溶液滴定至蓝色消失为终点。记录消耗葡萄糖标准溶液的体积(V)。

6.4.1.4.2 费林溶液的标定

准确吸取费林甲、乙液各5 mL于250 mL锥形瓶中,加水30 mL。混匀后,加入比预滴定体积(V)少1 mL的葡萄糖标准溶液(6.4.1.2.3),置于电炉上加热至沸,加入次甲基蓝指示液(6.4.1.2.4)两滴,保持沸腾2 min,继续用葡萄糖标准溶液滴定至蓝色刚好消失为终点,并记录消耗葡萄糖标准溶液的总体积(V_1)。全部滴定操作应在3 min内完成。

费林溶液的浓度按式(3)计算:

$$m_1 = \frac{m \times V_1}{1\ 000} \dots\dots\dots(3)$$

式中:

m_1 ——费林甲、乙液各5 mL相当于葡萄糖的质量,单位为克(g);

m ——称取葡萄糖的质量,单位为克(g);

V_1 ——正式标定时,消耗葡萄糖标准溶液的的总体积,单位为毫升(mL)。

6.4.1.4.3 试样的测定

吸取试样2 mL~10 mL(控制水解液总糖量为1 g/L~2 g/L)于500 mL容量瓶中,加水50 mL和盐酸溶液(6.4.1.2.5)5 mL,在68℃~70℃水浴中加热15 min。冷却后,加入甲基红指示液(6.4.1.2.6)两滴,

用氢氧化钠溶液(6.4.1.2.7)中和至红色消失(近似于中性)。加水定容,摇匀,用滤纸过滤后备用。

测定时,以试样水解液代替葡萄糖标准溶液,操作步骤同6.4.1.4.2。

6.4.1.5 结果计算

试样中总糖含量按式(4)计算:

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

式中:

X ——试样中总糖的含量,单位为克每升(g/L);

m_1 ——费林甲、乙液各5 mL相当于葡萄糖的质量,单位为克(g);

V_2 ——滴定时消耗试样稀释液的体积,单位为毫升(mL);

V_3 ——吸取试样的体积,单位为毫升(mL)。

所得结果表示至一位小数。

6.4.1.6 精密度

在重复性条件下获得的两次独立测定结果的绝对差值不得超过算术平均值的5%。

6.4.2 亚铁氰化钾滴定法

适用于干型酒和半干型酒。

6.4.2.1 原理

费林溶液与还原糖共沸,在碱性溶液中将铜离子还原成亚铜离子,并与溶液中的亚铁氰化钾络合而呈黄色。以次甲基蓝为指示剂,达到终点时,稍微过量的还原糖将次甲基蓝还原成无色为终点。依据试样水解液的消耗体积,计算总糖含量。

6.4.2.2 试剂和溶液

6.4.2.2.1 甲溶液:称取硫酸铜($\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$) 15.0 g及次甲基蓝 0.05 g,加水溶解并定容至1 000 mL,摇匀备用。

6.4.2.2.2 乙溶液:称取酒石酸钾钠 50 g、氢氧化钠 54 g、亚铁氰化钾 4 g,加水溶解并定容至1 000 mL,摇匀备用。

6.4.2.2.3 葡萄糖标准溶液(1 g/L):称取经103 °C~105 °C烘干至恒重的无水葡萄糖 1 g(精确至0.000 1 g),加水溶解,并加浓盐酸 5 mL,用水定容至1 000 mL,摇匀备用。

6.4.2.3 仪器

6.4.2.3.1 分析天平:感量 0.1 mg。

6.4.2.3.2 分析天平:感量 0.01 g。

6.4.2.3.3 电炉:300 W~500 W。

6.4.2.4 分析步骤

6.4.2.4.1 空白试验

准确吸取甲溶液(6.4.2.2.1)、乙溶液(6.4.2.2.2)各5 mL于100 mL锥形瓶中,加入葡萄糖标准溶液(6.4.2.2.3)9 mL,混匀后置于电炉上加热,在2 min内沸腾,然后以每滴4 s~5 s的速度继续滴入葡萄糖标准溶液,直至蓝色消失立即呈现黄色为终点,记录消耗葡萄糖标准溶液的总量(V_0)。

6.4.2.4.2 试样的测定

a) 吸取试样 2 mL~10 mL(控制水解液含糖量在1 g/L~2 g/L)于100 mL容量瓶中,加水 30 mL和盐酸溶液(6.4.1.2.5)5 mL,在68 °C~70 °C水浴中加热水解 15 min。冷却后,加入甲基红指示液(6.4.1.2.6)两滴,用氢氧化钠溶液(6.4.1.2.7)中和至红色消失(近似于中性),加水定容至100 mL,摇匀,用滤纸过滤后,作为试样水解液备用。

b) 预滴定:准确吸取甲溶液(6.4.2.2.1)、乙溶液(6.4.2.2.2)各5 mL及试样水解液[6.4.2.4.2a)] 5 mL于100 mL锥形瓶中,摇匀后置于电炉上加热至沸腾,用葡萄糖标准溶液(6.4.2.2.3)滴定至终点,记录消耗葡萄糖标准溶液的体积。

c) 滴定:准确吸取甲溶液(6.4.2.2.1)、乙溶液(6.4.2.2.2)各5 mL及试样水解液[6.4.2.4.2a)]

5 mL 于 100 mL 锥形瓶中,加入比预滴定少 1.00 mL 的葡萄糖标准溶液(6.4.2.2.3),摇匀后置于电炉上加热至沸腾,继续用葡萄糖标准溶液滴定至终点。记录消耗葡萄糖标准溶液的体积(V)。接近终点时,滴入的葡萄糖标准溶液的用量应控制在 0.5 mL~1.0 mL。

6.4.2.5 结果计算

试样中总糖含量按式(5)计算:

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

式中:

X——试样中总糖的含量,单位为克每升(g/L);

V_0 ——空白试验时,消耗葡萄糖标准溶液的体积,单位为毫升(mL);

V——试样测定时,消耗葡萄糖标准溶液的体积,单位为毫升(mL);

c——葡萄糖标准溶液的浓度,单位为克每毫升(g/mL);

n——试样的稀释倍数。

所得结果表示至一位小数。

6.4.2.6 精密度

在重复性条件下获得的两次独立测定结果的绝对差值不得超过算术平均值的 5%。

6.5 总酯

6.5.1 指示剂法

6.5.1.1 原理

用碱中和样品中的游离酸,再准确加入一定量的碱,加热回流使酯类皂化。通过消耗碱的量计算出总酯的含量。

6.5.1.2 试剂和溶液

6.5.1.2.1 氢氧化钠标准滴定溶液 [$c(\text{NaOH})=0.1 \text{ mol/L}$]:按 GB/T 601 配制与标定。

6.5.1.2.2 氢氧化钠标准溶液 [$c(\text{NaOH})=3.5 \text{ mol/L}$]:按 GB/T 601 配制。

6.5.1.2.3 硫酸标准滴定溶液 [$c(1/2 \text{ H}_2\text{SO}_4)=0.1 \text{ mol/L}$]:按 GB/T 601 配制与标定。

6.5.1.2.4 乙醇(无酯)溶液[40%(体积分数)]:量取 95%乙醇 600 mL 于 1 000 mL 回流瓶中,加氢氧化钠标准溶液(6.5.1.2.2)5 mL,加热回流皂化 1 h。然后移入蒸馏器中重蒸,再配成 40%(体积分数)乙醇溶液。

6.5.1.2.5 酚酞指示剂(10 g/L):按 GB/T 603 配制。

6.5.1.3 仪器

6.5.1.3.1 全玻璃蒸馏器:500 mL。

6.5.1.3.2 全玻璃回流装置:回流瓶 1 000 mL、250 mL(冷凝管不短于 45 cm)。

6.5.1.3.3 碱式滴定管:25 mL 或 50 mL。

6.5.1.3.4 酸式滴定管:25 mL 或 50 mL。

6.5.1.4 分析步骤

吸取样品 50.0 mL 于 250 mL 回流瓶中,加两滴酚酞指示剂(6.5.1.2.5),以氢氧化钠标准滴定溶液(6.5.1.2.1)滴定至粉红色(切勿过量),记录消耗氢氧化钠标准滴定溶液的毫升数(也可作为总酸含量计算)。再准确加入氢氧化钠标准滴定溶液(6.5.1.2.1)25.00 mL(若样品总酯含量高时,可加入 50.00 mL),摇匀,放入几颗沸石或玻璃珠,装上冷凝管(冷却水温度宜低于 15 ℃),于沸水浴上回流 30 min,取下,冷却。然后,用硫酸标准滴定溶液(6.5.1.2.3)进行滴定,使微红色刚好完全消失为其终点,记录消耗硫酸标准滴定溶液的体积。同时吸取乙醇(无酯)溶液(6.5.1.2.4)50 mL,按上述方法同样操作做空白试验,记录消耗硫酸标准滴定溶液的体积。

6.5.1.5 结果计算

试样中的总酯含量按式(6)计算:

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

式中:

X ——样品中总酯的质量分数(以乙酸乙酯计),单位为克每升(g/L);

c ——硫酸标准滴定溶液的实际浓度,单位为摩尔每升(mol/L);

V_0 ——空白试验样品消耗硫酸标准滴定溶液的体积,单位为毫升(mL);

V_1 ——样品消耗硫酸标准滴定溶液的体积,单位为毫升(mL);

88——乙酸乙酯的摩尔质量的数值,单位为克每摩尔(g/mol)[$M(C_4H_8O_2)=88$];

50.0——吸取样品的体积,单位为毫升(mL)。

所得结果应表示至两位小数。

6.5.1.6 精密度

在重复性条件下获得的两次独立测定结果的绝对差值不应超过平均值的2%。

6.5.2 电位滴定法

6.5.2.1 原理

用碱中和样品中的游离酸,再加入一定量的碱,回流皂化。用硫酸溶液进行中和滴定,当滴定接近等当点时,利用pH变化指示终点。

6.5.2.2 试剂和溶液

同6.5.1.2。

6.5.2.3 仪器

6.5.2.3.1 电位滴定仪(或酸度计):精度 ± 0.02 pH。

6.5.2.3.2 同6.5.1.3.1。

6.5.2.3.3 同6.5.1.3.2。

6.5.2.3.4 同6.5.1.3.3。

6.5.2.3.5 同6.5.1.3.4。

6.5.2.4 分析步骤

按使用说明书安装调试仪器,根据液温进行校正定位。

吸取样品50.0 mL于250 mL回流瓶中,加两滴酚酞指示剂(6.5.1.2.5),以氢氧化钠标准滴定溶液(6.5.1.2.1)滴定至粉红色(切勿过量),记录消耗氢氧化钠标准滴定溶液的毫升数(也可作为总酸含量计算)。再准确加入氢氧化钠标准滴定溶液(6.5.1.2.1)25.00 mL(若样品总酯含量高时,可加入50.00 mL),摇匀,放入几颗沸石或玻璃珠,装上冷凝管(冷却水温度宜低于15℃),于沸水浴上回流30 min,取下,冷却。将样液移入100 mL小烧杯中,用10 mL水分次冲洗回流瓶,洗液并入小烧杯。插入电极,放入一枚转子,置于电磁搅拌器上,开始搅拌,初始阶段可快速滴加硫酸标准滴定溶液(6.5.1.2.3),当样液pH=9.00后,放慢滴定速度,每次滴加半滴溶液,直至pH=8.70为其终点,记录消耗硫酸标准滴定溶液的体积。同时吸取乙醇(无酯)溶液(6.5.1.2.4)50.00 mL,按上述方法同样操作做空白试验,记录消耗硫酸标准滴定溶液的体积。

6.5.2.5 结果计算

同6.5.1.5。

6.5.2.6 精密度

同6.5.1.6。

6.6 甲醇

按GB/T 5009.48检验。

6.7 净含量

按JJF 1070检验。

7 检验规则

7.1 抽样

7.1.1 按表5抽取样本,从每箱中任取一瓶,单件包装净含量小于500 mL,总取样量不足1 500 mL

时,可按比例增加抽样量。

表 5 抽样表

批量范围/箱	样本数/箱	单位样本数/瓶
50 以下	3	3
50~1 200	5	2
1 201~35 000	8	1
35 000 以上	13	1

7.1.2 采样后应立即贴上标签,注明:样品名称、品种规格、数量、制造者名称、采样时间与地点、采样人。将样品分为两份,一份样品封存,保留 1 个月备查;另一份样品立即送化实验室,进行感官、理化和卫生检验。

7.2 检验分类

7.2.1 出厂检验

7.2.1.1 产品出厂前,应由生产企业的质量检验部门按本标准规定逐批进行检验。检验合格并签发质量合格证明的产品,方可出厂。

7.2.1.2 出厂检验项目

发酵型奶酒——感官要求、酒精度、总酸、总糖、氨基酸态氮、菌落总数、净含量和标签。

蒸馏型奶酒——感官要求、酒精度、总酸、总酯、甲醇、净含量和标签。

7.2.2 型式检验

7.2.2.1 一般情况下,型式检验每年进行一次。有下列情况之一时,亦应进行型式检验:

- 更换设备或停产半年以上,重新恢复生产时;
- 出厂检验结果与上次型式检验有较大差异时;
- 原辅材料有较大改变时。

7.2.2.2 型式检验项目:5.2~5.5 规定的全部项目。

7.3 判定规则

7.3.1 若受检样品项目全部合格时,判整批产品为合格。

7.3.2 微生物指标如有一项不符合要求,判整批产品为不合格。

7.3.3 其余指标如有一项(或两项)不符合要求时,可以在同批产品中抽取两倍量样品进行复验,以复验结果为准;若复验结果仍有一项不合格时,判整批产品为不合格。

8 标志、包装、运输、贮存

8.1 标志

8.1.1 产品标签除按 GB 10344 规定执行外,还应注明产品类型;发酵型奶酒应标明其含糖量。

8.1.2 包装标志应按 GB/T 191 的规定执行。

8.2 包装

包装材料应符合食品卫生要求。包装容器应封装严密、无渗漏。

8.3 运输

8.3.1 运输工具应清洁、卫生。产品不得与有毒、有害、有腐蚀性、易挥发或有异味的物品混装混运。

8.3.2 搬运时应轻拿轻放,不得扔摔、撞击、挤压。

8.3.3 运输过程中不得暴晒、雨淋、受潮。

8.4 贮存

8.4.1 产品不得与有毒、有害、有腐蚀性、易挥发或有异味的物品同库贮存。

8.4.2 产品应贮存于阴凉、干燥、通风的库房中;不得露天堆放、日晒、雨淋;不得直接接触潮湿地面,远离热源。

8.4.3 发酵型奶酒产品宜在 5℃~25℃ 贮存。

附 录
(规范性
温度 20 ℃时酒精计

表 A.1 温度 20 ℃时酒精计浓度与温度换算表

溶液温度/℃	酒精计									
	1	2	3	4	5	6	7	8	9	10
5	2.0	3.0	4.0	5.1	6.2	7.3	8.4	9.6	10.7	11.8
6	2.0	3.0	4.0	5.1	6.2	7.3	8.4	9.5	10.6	11.8
7	1.9	3.0	4.0	5.1	6.1	7.2	8.4	9.5	10.6	11.7
8	1.9	2.9	4.0	5.0	6.1	7.2	8.3	9.4	10.5	11.6
9	1.9	2.9	4.0	5.0	6.0	7.1	8.2	9.3	10.4	11.5
10	1.8	2.9	3.9	5.0	6.0	7.1	8.2	9.3	10.3	11.4
11	1.8	2.8	3.9	4.9	6.0	7.0	8.1	9.2	10.2	11.3
12	1.7	2.8	3.8	4.8	5.9	6.9	8.0	9.1	10.1	11.2
13	1.7	2.7	3.7	4.8	5.8	6.8	7.9	9.0	10.0	11.1
14	1.6	2.6	3.6	4.7	5.7	6.7	7.8	8.9	9.9	11.0
15	1.5	2.5	3.5	4.6	5.6	6.6	7.7	8.8	9.8	10.8
16	1.4	2.4	3.4	4.5	5.5	6.5	7.6	8.6	9.6	10.7
17	1.3	2.3	3.3	4.4	5.4	6.4	7.4	8.5	9.5	10.5
18	1.2	2.2	3.2	4.2	5.3	6.3	7.3	8.3	9.3	10.4
19	1.1	2.1	3.1	4.1	5.1	6.1	7.2	8.2	9.2	10.2
20	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
21	0.9	1.9	2.9	3.9	4.8	5.8	6.8	7.8	8.8	9.8
22	0.7	1.7	2.7	3.7	4.7	5.7	6.7	7.7	8.6	9.6
23	0.6	1.6	2.6	3.6	4.6	5.5	6.5	7.5	8.4	9.4
24	0.4	1.4	2.4	3.4	4.4	5.4	6.3	7.3	8.3	9.2
25	0.3	1.3	2.3	3.2	4.2	5.2	6.2	7.1	8.1	9.0
26	0.1	1.1	2.1	3.1	4.0	5.0	6.0	6.9	7.9	8.8
27	0.0	1.0	1.9	2.9	3.9	4.8	5.8	6.7	7.7	8.6
28	—	0.8	1.8	2.7	3.7	4.6	5.6	6.5	7.5	8.4
29	—	0.6	1.6	2.5	3.5	4.4	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

A

附录)

浓度与温度换算表

(酒精度范围 1%vol~21%vol, 间隔 1%vol)

单位为%vol

示值/%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

附 录
(规范性
温度 20 ℃ 时酒精计

表 B.1 酒精计温度(t)、酒精度(ALC)换算表

酒精度/ (%vol)	酒精计											
	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

B

附录)

浓度与温度换算表

(温度范围 10 ℃~22 ℃, 间隔 0.5 ℃)

单位为%vol

温度/℃												
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	19.27	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

表 B.1

酒精度/ (%vol)	酒精计											
	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

(续)

单位为%vol

温度/℃												
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

表 B.1

酒精度/ (%vol)	酒精计											
	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

(续)

单位为%vol

温度/℃												
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

表 B.1

酒精度/ (%vol)	酒精计											
	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	36.88	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

(续)

单位为%vol

温度/℃												
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

表 B.1

酒精度/ (%vol)	酒精计											
	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

(续)

单位为% vol

温度/℃												
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
39.62	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

表 B.1

酒精度/ (%vol)	酒精计											
	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
41.2	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
41.6	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

(续)

单位为%vol

温度/℃												
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

表 B.1

酒精度/ (%vol)	酒精计											
	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	49.50	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

(续)

单位为%vol

温度/℃												
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

表 B.1

酒精度/ (%vol)	酒精计											
	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	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

表 B.2 酒精计温度(t)、酒精度(ALC)换算表

酒精度/ (%vol)	酒精计											
	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	16.99	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	17.18	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

(续)

单位为%vol

温度/℃												
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

(温度范围 22.5 ℃ ~35 ℃ ,间隔 0.5 ℃)

单位为%vol

温度/℃													
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	15.56	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

表 B.2

酒精度/ (%vol)	酒精计											
	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	20.66	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	21.35
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

(续)

单位为%vol

温度/℃													
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

表 B.2

酒精度/ (%vol)	酒精计											
	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	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	28.70	28.51	28.31	28.11	27.91	27.72	27.52	27.32	27.13	26.93	26.74

(续)

单位为%vol

温度/℃													
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

表 B.2

酒精度/ (%vol)	酒精计											
	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

(续)

单位为%vol

温度/℃													
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

表 B.2

酒精度/ (%vol)	酒精计											
	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

(续)

单位为%vol

温度/℃													
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

表 B.2

酒精度/ (%vol)	酒精计											
	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

(续)

单位为%vol

温度/℃													
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

表 B.2

酒精度/ (%vol)	酒精计											
	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

(续)

单位为%vol

温度/℃													
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

表 B.2

酒精度/ (%vol)	酒精计											
	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	46.68
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

(续)

单位为%vol

温度/℃													
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