

# 中华人民共和国国家环境保护标准

HJ 1001-2018

## 水质 总大肠菌群、粪大肠菌群和 大肠埃希氏菌的测定 酶底物法

Water quality—Determination of total coliforms, fecal coliforms and

*Escherichia coli*—Enzyme substrate method

(发布稿)

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## 前 言

为贯彻《中华人民共和国环境保护法》和《中华人民共和国水污染防治法》，保护生态环境，保障人体健康，规范水中总大肠菌群、粪大肠菌群和大肠埃希氏菌的测定方法，制定本标准。

本标准规定了测定地表水、地下水、生活污水和工业废水中总大肠菌群、粪大肠菌群和大肠埃希氏菌的酶底物法。

本标准的附录A为规范性附录，附录B和附录C为资料性附录。

本标准首次发布。

本标准由生态环境部生态环境监测司、法规与标准司组织制订。

本标准起草单位：上海市环境监测中心。

本标准验证单位江苏省环境监测中心、浙江省环境监测中心、常州市环境监测中心、上海市松江区环境监测站、上海市长宁区环境监测站和上海市青浦区环境监测站。

本标准生态环境部2018年12月26日批准。

本标准自2019年6月1日起实施。

本标准由生态环境部解释。

# 水质 总大肠菌群、粪大肠菌群和大肠埃希氏菌

## 的测定 酶底物法

### 1 适用范围

本标准规定了测定水中总大肠菌群、粪大肠菌群和大肠埃希氏菌的酶底物法。

本标准适用于地表水、地下水、生活污水和工业废水中总大肠菌群、粪大肠菌群和大肠埃希氏菌的测定。

本方法的检出限为 10 MPN/L。

### 2 规范性引用文件

本标准引用了下列文件或其中的条款。凡是不注日期的引用文件，其有效版本适用于本标准。

GB/T 6682 分析实验用水规格和实验方法

GB/T 14581 水质 湖泊和水库采样技术指导

HJ 494 水质 采样技术指导

HJ/T 91 地表水和污水监测技术规范

### 3 术语和定义

下列术语和定义适用于本标准。

#### 3.1

**总大肠菌群 total coliforms**

37℃培养 24 h，能产生β-半乳糖苷酶（β-D-galactosidase），分解选择性培养基中的邻硝基苯-β-D-吡喃半乳糖苷（ONPG）生成黄色的邻硝基苯酚的肠杆菌科细菌。

#### 3.2

**粪大肠菌群 fecal coliforms**

又称耐热大肠菌群（thermotolerant coliforms）。44.5℃培养 24 h，能产生β-半乳糖苷酶（β-D-galactosidase），分解选择性培养基中的邻硝基苯-β-D-吡喃半乳糖苷（ONPG）生成黄色的邻硝基苯酚的肠杆菌科细菌。

#### 3.3

**大肠埃希氏菌 Escherichia coli**

俗称大肠杆菌。37℃培养 24 h，能产生β-半乳糖苷酶（β-D-galactosidase），分解选择性培养基中的邻硝基苯-β-D-吡喃半乳糖苷（ONPG）生成黄色的邻硝基苯酚，同时产生β-葡萄糖醛酸酶（β-Glucuronidase），分解选择性培养基中的 4-甲基伞形酮-β-D-葡萄糖醛酸苷

(MUG) 释放出荧光物质 (4-甲基伞形酮) 的肠杆菌科细菌。

### 3.4

#### 最大可能数 most probable number (MPN)

又称稀释培养计数, 是一种基于泊松分布的间接计数法。利用统计学原理, 根据一定体积不同稀释度样品经培养后产生的目标微生物阳性数, 查表估算一定体积样品中目标微生物存在的数量 (单位体积存在目标微生物的最大可能数)。

## 4 方法原理

在特定温度下培养特定的时间, 总大肠菌群、粪大肠菌群、大肠埃希氏菌能产生 $\beta$ -半乳糖苷酶, 将选择性培养基中的无色底物邻硝基苯- $\beta$ -D-吡喃半乳糖苷 (ONPG) 分解为黄色的邻硝基苯酚 (ONP); 大肠埃希氏菌同时又能产生 $\beta$ -葡萄糖醛酸酶, 将选择性培养基中的 4-甲基伞形酮- $\beta$ -D-葡萄糖醛酸苷 (MUG) 分解为 4-甲基伞形酮, 在紫外灯照射下产生荧光。统计阳性反应出现数量, 查 MPN 表, 分别计算样品中总大肠菌群、粪大肠菌群、大肠埃希氏菌的浓度值。

## 5 干扰和消除

5.1 活性氯具有氧化性, 能破坏微生物细胞内的酶活性, 导致细胞死亡, 可在样品采集 (8.1) 时加入硫代硫酸钠溶液 (6.4) 消除干扰。

5.2 重金属离子具有细胞毒性, 能破坏微生物细胞内的酶活性, 导致细胞死亡, 可在样品采集 (8.1) 时加入乙二胺四乙酸二钠溶液 (6.5) 消除干扰。

## 6 试剂和材料

除非另有说明, 分析时均使用符合国家标准分析纯试剂, 实验用水应满足 GB/T 6682 中三级水的要求。

### 6.1 培养基。

本标准采用 Minimal Medium ONPG-MUG 培养基。每 100 ml 样品需使用培养基粉末  $2.7 \text{ g} \pm 0.5 \text{ g}$ , 所含基本成分如下:

硫酸铵 $[(\text{NH}_4)_2\text{SO}_4]$	0.5 g
硫酸锰 ( $\text{MnSO}_4$ )	0.05 mg
硫酸锌 ( $\text{ZnSO}_4$ )	0.05 mg
硫酸镁 ( $\text{MgSO}_4$ )	10 mg
氯化钠 ( $\text{NaCl}$ )	1 g
氯化钙 ( $\text{CaCl}_2$ )	5 mg
亚硫酸钠 ( $\text{Na}_2\text{SO}_3$ )	4 mg
两性霉素 B (Amphotericin B)	0.1 mg
邻硝基苯- $\beta$ -D-吡喃半乳糖苷 (ONPG)	50 mg

4-甲基伞形酮-β-D-葡萄糖醛酸苷 (MUG)	7.5 mg
茄属植物萃取物 (Solanium 萃取物)	50 mg
N-2-羟乙基哌嗪-N-2-乙磺酸钠盐 (HEPES 钠盐)	0.53 g
N-2-羟乙基哌嗪-N-2-乙磺酸 (HEPES)	0.69 g

也可采用市售商品化培养基制品。

6.2 硫代硫酸钠 ( $\text{Na}_2\text{S}_2\text{O}_3 \cdot 5\text{H}_2\text{O}$ )。

6.3 乙二胺四乙酸二钠 ( $\text{C}_{10}\text{H}_{14}\text{N}_2\text{O}_8\text{Na}_2 \cdot 2\text{H}_2\text{O}$ )。

6.4 硫代硫酸钠溶液:  $\rho(\text{Na}_2\text{S}_2\text{O}_3) = 0.10 \text{ g/ml}$ 。

称取 15.7 g 硫代硫酸钠 (6.2), 溶于适量水中, 定容至 100 ml, 临用现配。

6.5 乙二胺四乙酸二钠溶液:  $\rho(\text{C}_{10}\text{H}_{14}\text{N}_2\text{O}_8\text{Na}_2 \cdot 2\text{H}_2\text{O}) = 0.15 \text{ g/ml}$ 。

称取 15 g 乙二胺四乙酸二钠 (6.3), 溶于适量水中, 定容至 100 ml, 此溶液保质期为 30 d。

6.6 97 孔定量盘: 含 49 个大孔, 48 个小孔。其中, 每个小孔可容纳 0.186 ml 样品, 大孔中 48 个大孔每个可容纳 1.86 ml 样品, 一个顶部大孔可容纳 11 ml 样品。也可采用经环氧乙烷灭菌的市售商品化成品。

6.7 标准阳性比色盘。

6.8 无菌水: 取适量实验用水, 经 121℃ 高压蒸汽灭菌 20 min, 备用。

## 7 仪器和设备

7.1 采样瓶: 具螺旋帽或磨口塞的 100 ml、250 ml、500 ml 广口玻璃瓶。

注: 在采集不存在或不考虑余氧、金属离子干扰的样品时, 可采用市售无菌采样瓶或无菌采样袋。

7.2 高压蒸汽灭菌器: 121℃ 可调。

7.3 恒温培养箱: 允许温度偏差  $37^\circ\text{C} \pm 1^\circ\text{C}$ 、 $44.5^\circ\text{C} \pm 0.5^\circ\text{C}$ 。

7.4 程控定量封口机: 用于 97 孔定量盘 (6.6) 的封口。

7.5 紫外灯: 365~366 nm。

7.6 移液管: 1 ml  $\pm$  0.01 ml、10 ml  $\pm$  0.1 ml。也可采用计量合格的可调式移液器。

7.7 三角瓶: 100 ml。

7.8 量筒: 100 ml  $\pm$  1 ml。

7.9 一般实验室常用仪器和设备。

注: 三角瓶、移液管、采样瓶等玻璃器皿及采样器具要在试验前按无菌操作要求包扎, 121℃ 高压蒸汽灭菌 20 min, 烘干, 备用。

## 8 样品

### 8.1 样品采集

点位布设及采样频次按照 GB/T 14581、HJ/T 494 和 HJ/T 91 的相关规定执行。

采集微生物样品时, 采样瓶 (7.1) 不得用样品洗涤, 采集样品于灭菌的采样瓶中。

采集河流、湖库等地表水样品时，可握住瓶子下部直接将带塞采样瓶插入水中，约距水面 10~15 cm 处，瓶口朝水流方向，拔瓶塞，使样品灌入瓶内然后盖上瓶塞，将采样瓶从水中取出。如果没有水流，可握住瓶子水平往前推。采样量一般为采样瓶容量的 80%左右。样品采集完毕后，迅速扎上无菌包装纸。

从龙头装置采集样品时，不要选用漏水龙头，采水前将龙头打开至最大，放水 3~5 min，然后将龙头关闭，用火焰灼烧约 3 min 灭菌或用 70%~75%的酒精对龙头进行消毒，开足龙头，再放水 1 min，以充分除去水管中的滞留杂质。采样时控制水流速度，小心接入瓶内。

采集地表水、废水样品及一定深度的样品时，也可使用灭菌过的专用采样装置采样。

在同一采样点进行分层采样时，应自上而下进行，以免不同层次的搅扰。

如果采集的是含有活性氯的样品，需在采样瓶灭菌前加入硫代硫酸钠溶液（6.4），以除去活性氯对细菌的抑制作用（每 125 ml 容积加入 0.1 ml 的硫代硫酸钠溶液）；如果采集的是重金属离子含量较高的样品，则在采样瓶灭菌前加入乙二胺四乙酸二钠溶液（6.5），以消除干扰（每 125 ml 容积加入 0.3 ml 的乙二胺四乙酸二钠溶液）。

注：15.7 mg 硫代硫酸钠（6.2）可去除样品中 1.5 mg 活性氯，硫代硫酸钠用量可根据样品实际活性氯量调整。

## 8.2 样品保存

采样后应在 2 h 内检测，否则，应 10℃ 以下冷藏但不得超过 6 h。实验室接样后，不能立即开展检测的，将样品于 4℃ 以下冷藏并在 2 h 内检测。

## 9 分析步骤

### 9.1 样品稀释

根据样品污染程度确定接种量（见表 1），避免接种样品培养后 97 孔定量盘（6.6）出现全部阳性或全部阴性。接种量小于 100 ml 时，应稀释样品后接种，接种量为 10 ml 时，取 10 ml 样品加入到盛有 90 ml 无菌水（6.8）的三角瓶（7.7）中混匀制成 1:10 的稀释样品，其他接种量的稀释样品依次类推。对于未知样品，可选用多个接种量进行检测。

表 1 样品接种量参考表

样品类型		接种量 (ml)					
		10 <sup>2</sup>	10	1	0.1	10 <sup>-2</sup>	
地表水	水源水	▲					
	湖泊（水库）	▲					
	河流	▲	▲	▲			
废水	生活污水	▲	▲	▲	▲		
	工业废水	处理前		▲	▲	▲	▲
		处理后	▲				
地下水		▲					



## 9.2 接种

量取 100 ml 样品或稀释样品于灭菌后的三角瓶，加入  $2.7 \text{ g} \pm 0.5 \text{ g}$  培养基（6.1）粉末，充分混匀，完全溶解后，全部倒入 97 孔定量盘（6.6）内，以手抚平 97 孔定量盘背面，赶除孔内气泡，然后用程控定量封口机（7.4）封口。观察 97 孔定量盘颜色，若出现类似或深于标准阳性比色盘（6.7）的颜色，则需排查样品、培养基、无菌水等一系列因素后，终止试验或重新操作。

注：9.1、9.2 步骤在野外操作时应避开明显局部污染源，建议使用一次性手套、口罩、酒精灯等。

## 9.3 培养

测定总大肠菌群和大肠埃希氏菌时，将封口后的 97 孔定量盘放入恒温培养箱（7.3）中  $37^\circ\text{C} \pm 1^\circ\text{C}$  下培养 24 h。

测定粪大肠菌群时，将封口后的 97 孔定量盘放入的恒温培养箱中  $44.5^\circ\text{C} \pm 0.5^\circ\text{C}$  下培养 24 h。

## 9.4 对照试验

### 9.4.1 空白对照

每次试验都要用无菌水（6.8）按照步骤 9.1~9.3 进行实验室空白测定。培养后的 97 孔定量盘不得有任何颜色反应，否则，该次样品测定结果无效，应查明原因后重新测定。

### 9.4.2 阴性和阳性对照

总大肠菌群、大肠埃希氏菌、粪大肠菌群的阴性、阳性菌株参考表 2。

表 2 阴性、阳性菌株参考表

检测指标	阳性菌种	阴性菌种
总大肠菌群	大肠埃希氏菌、 产气肠杆菌 ( <i>Enterobacter aerogenes</i> )	金黄色葡萄球菌 ( <i>Staphylococcus aureus</i> )、 假单胞菌属 ( <i>Pseudomonas sp.</i> )
大肠埃希氏菌	大肠埃希氏菌	金黄色葡萄球菌、 假单胞菌属
粪大肠菌群	大肠埃希氏菌 (耐热型)、 克雷伯氏菌属 ( <i>Klebsiella trevisan</i> ) (耐热型)	产气肠杆菌、 粪链球菌 ( <i>Streptococcus faecalis</i> )、 假单胞菌属

将标准菌株制成 300~3000 个/ml 的菌悬液，将菌悬液按接种（9.2）和培养（9.3）要求操作，阳性菌株应呈现阳性反应；阴性菌株呈现阴性反应，否则，该次样品测定结果无效，应重新测定。

注：可先制备较高浓度菌悬液，采用血球计数器在显微镜下对其浓度进行初步测定，然后根据实际情况用无菌水（6.8）稀释至 300~3000 个/ml。

### 9.4.3 结果判读与计数

将培养 24 h 后的 97 孔定量盘进行结果判读，样品变黄色判断为总大肠菌群或粪大肠菌群阳性；样品变黄色且在紫外灯（7.5）照射下有蓝色荧光，判断为大肠埃希氏菌阳性。如果结果可疑，可延长培养至 28 h 进行结果判读，超过 28 h 后出现的颜色反应不作为阳性结果。可使用保质期内的标准阳性比色盘以辅助判读，参见附录 A。

分别记录 97 孔定量盘中大孔和小孔的阳性孔数量。

## 10 结果计算与表示

### 10.1 结果计算

从 97 孔定量盘法 MPN 表（见附录 B）中查得每 100 ml 样品中总大肠菌群、粪大肠菌群数或大肠埃希氏菌的 MPN 值（置信区间参见附录 C）后，再根据样品不同的稀释度，按照公式（1）换算样品中总大肠菌群、粪大肠菌群数或大肠埃希氏菌浓度（MPN/L）：

$$C = \frac{MPN\text{值} \times 1000}{f} \quad (1)$$

式中：C——样品中总大肠菌群、粪大肠菌群数或大肠埃希氏菌浓度，MPN/L；

MPN 值——每 100 ml 样品中总大肠菌群、粪大肠菌群数或大肠埃希氏菌浓度，MPN/100 ml；

1000——将 C 单位由 MPN/ml 转换为 MPN/L；

f——最大接种量，ml。

### 10.2 结果表示

测定结果保留两位有效数字，当测定结果  $\geq 100$  MPN/L 时，以科学计数法表示；若 97 孔均为阴性，可报告为总大肠菌群、粪大肠菌群数或大肠埃希氏菌未检出或  $< 10$  MPN/L。

## 11 精密度和准确度

### 11.1 精密度

6 个实验室分别对低浓度（地下水，浓度均值为  $6.0 \times 10^2$  MPN/L）、中浓度（地表水，浓度均值为  $4.0 \times 10^4$  MPN/L）和高浓度（生活污水，浓度均值为  $9.0 \times 10^7$  MPN/L）三个不同浓度细菌总数的样品及有证标准样品（浓度为 2000 MPN/L）进行了 6 次重复测定：实验室内相对标准偏差范围分别为 0.26%~1.3%、0.65%~2.0%、1.3%~3.7%和 0.68%~2.8%；实验室间相对标准偏差分别为 9.9%、1.3%、4.2%和 1.3%；重复性限为 0.17、0.18、0.21 和 0.18；再现性限为 1.8、0.23、0.38 和 0.20；实验室间置信区间见表 3。

表 3 总大肠菌群实验室间 95%置信区间表

低浓度 (MPN/L)		中浓度 (MPN/L)		高浓度 (MPN/L)		有证标准样品 (MPN/L)	
均值	95%置信区间	均值	95%置信区间	均值	95%置信区间	均值	95%置信区间
6.4×10 <sup>2</sup>	5.5×10 <sup>2</sup> ~7.4×10 <sup>2</sup>	4.0×10 <sup>4</sup>	3.5×10 <sup>4</sup> ~4.6×10 <sup>4</sup>	4.1×10 <sup>6</sup>	3.7×10 <sup>6</sup> ~4.6×10 <sup>6</sup>	1.4×10 <sup>3</sup>	1.8×10 <sup>3</sup> ~2.3×10 <sup>3</sup>

6 个实验室分别对低浓度（地下水，浓度均值为 70 MPN/L）、中浓度（地表水，浓度均值为 9.0×10<sup>3</sup> MPN/L）和高浓度（生活污水，浓度均值为 2.0×10<sup>6</sup> MPN/L）三个不同浓度细菌总数的样品及有证标准样品（浓度为 2000 MPN/L）进行了 6 次重复测定：实验室内相对标准偏差范围分别为 0.69%~1.9%、0.93%~2.9%、5.4%~21%和 1.8%~3.0%；实验室间相对标准偏差分别为 9.6%、1.6%、15%和 3.7%；重复性限为 0.23、0.21、0.58 和 0.19；再现性限为 1.7、0.26、0.90 和 0.35；实验室间置信区间见表 4。

表 4 大肠埃希氏菌实验室间置信区间表

低浓度 (MPN/L)		中浓度 (MPN/L)		高浓度 (MPN/L)		有证标准样品 (MPN/L)	
均值	95%置信区间	均值	95%置信区间	均值	95%置信区间	均值	95%置信区间
59	39~90	8.5×10 <sup>3</sup>	7.3×10 <sup>3</sup> ~9.9×10 <sup>3</sup>	1.5×10 <sup>6</sup>	1.3×10 <sup>6</sup> ~1.7×10 <sup>6</sup>	7.7×10 <sup>2</sup>	1.7×10 <sup>3</sup> ~2.3×10 <sup>3</sup>

6 个实验室分别对低浓度（地下水，浓度均值为 1.0×10<sup>2</sup> MPN/L）、中浓度（地表水，浓度均值为 1.3×10<sup>4</sup> MPN/L）和高浓度（生活污水，浓度均值为 3.0×10<sup>6</sup> MPN/L）三个不同浓度细菌总数的样品及有证标准样品（浓度为 3700 MPN/L）进行了 6 次重复测定：实验室内相对标准偏差范围分别为 0.40%~2.4%、1.3%~2.9%、3.4%~17%和 2.4%~9.2%；实验室间相对标准偏差分别为 8.9%、6.4%、6.6%、6.4%；重复性限为 0.22、0.26、0.58 和 0.55；再现性限为 1.6、0.76、0.64 和 0.75；实验室间置信区间见表 5。

表 5 粪大肠菌群实验室间置信区间表

低浓度 (MPN/L)		中浓度 (MPN/L)		高浓度 (MPN/L)		有证标准样品 (MPN/L)	
均值	95%置信区间	均值	95%置信区间	均值	95%置信区间	均值	95%置信区间
92	62~1.3×10 <sup>2</sup>	1.1×10 <sup>4</sup>	9.5×10 <sup>3</sup> ~1.4×10 <sup>4</sup>	1.8×10 <sup>6</sup>	1.6×10 <sup>6</sup> ~2.1×10 <sup>6</sup>	1.4×10 <sup>3</sup>	2.5×10 <sup>3</sup> ~5.4×10 <sup>3</sup>

## 11.2 准确度

6 家实验室对总大肠菌群有证标准样品（2000 MPN/L）进行了 6 次重复测定：实验室内相对误差范围为-6.4%~-3.5%；相对误差的最终值为-4.7%±1.2%。

6 家实验室对大肠埃希氏菌群标准样品（2000 MPN/L）进行了 6 次重复测定：实验室内相对误差范围为-15%~-6.3%；相对误差的最终值为-13%±3.3%。

6家实验室对粪大肠菌群的有证标准样品（3700 MPN/L）进行了6次重复测定：实验室内的相对误差范围为-17%~-0.81%；相对误差的最终值为-13%±6.1%。

注：微生物检测数据为偏态分布，其测定结果全部经以10为底对数转换后进行计算。

## 12 质量保证和质量控制

12.1 每批样品按对照试验（9.4）进行空白对照测定，定期使用有证标准菌株进行阳性和阴性对照试验。

12.2 每20个样品或每批次样品（≤20个/批）测定一个平行双样。

12.3 对每批次培养基须使用有证标准菌株进行培养基质量检验。

12.4 定期使用有证标准菌株/标准样品进行质量控制。

## 13 废物处理

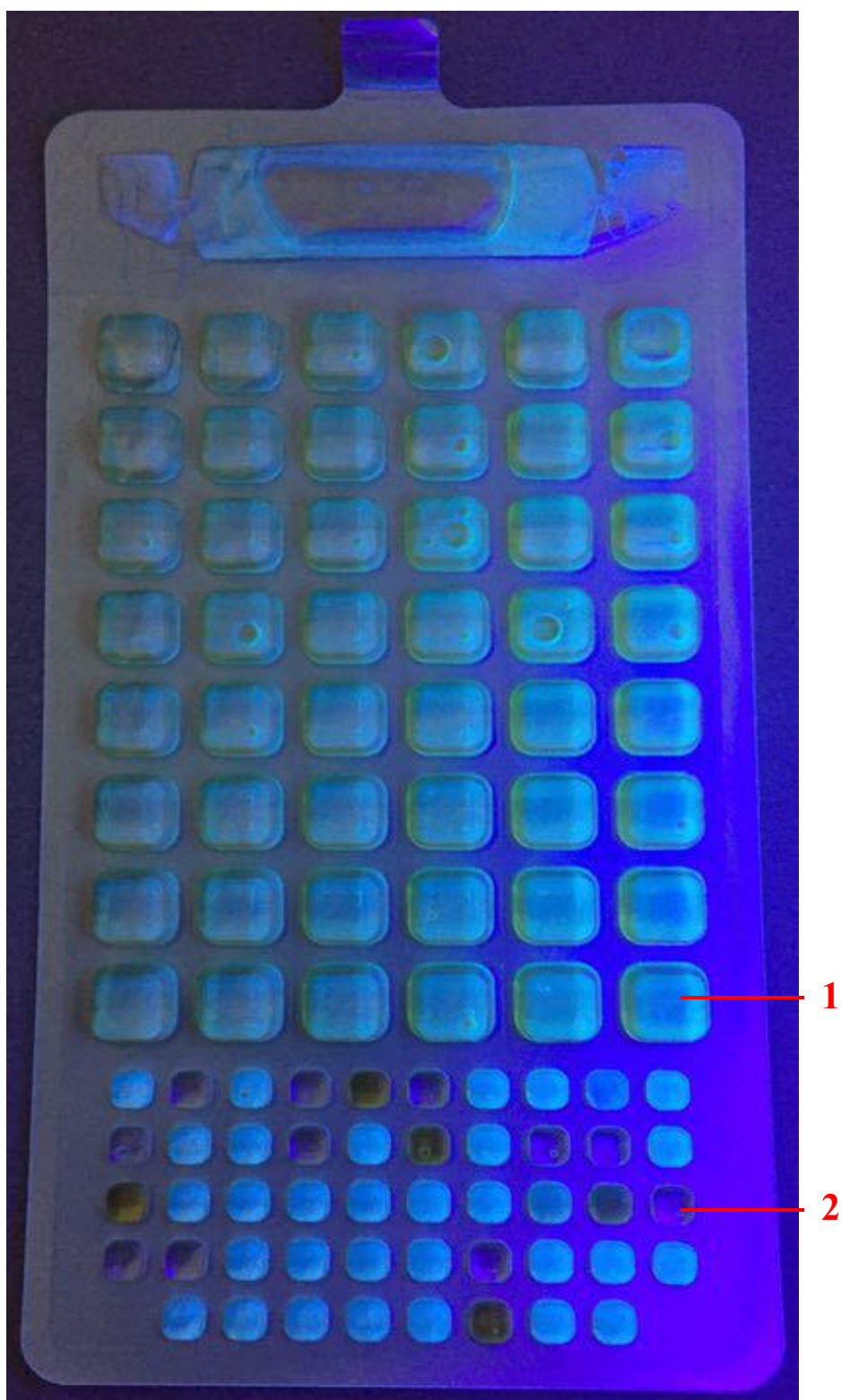
实验中产生的废物经121℃高压蒸汽灭菌20 min后，作为一般废物处理。

附录 A  
(资料性附录)  
结果判定参考图片



1——总大肠菌群、粪大肠菌群阳性（黄色）；2——总大肠菌群、粪大肠菌群阴性（无色）。

图 A.1 总大肠菌群、粪大肠菌群酶底物法阴性、阳性结果参考图



1——大肠埃希氏菌阳性（黄色且荧光）；2——大肠埃希氏菌阴性（无荧光）。

图 A. 2 大肠埃希氏菌酶底物法阴性、阳性结果参考图





图 A.3 标准阳性比色盘

附录 B  
 (规范性附录)  
 97 孔定量盘法 MPN 表

表 B.1 97 孔定量盘法 MPN 表 (MPN/100 ml)

大孔阳 性格数	小孔阳性格数											
	0	1	2	3	4	5	6	7	8	9	10	11
0	<1.0	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0	11.0
1	1.0	2.0	3.0	4.0	5.0	6.0	7.1	8.1	9.1	10.1	11.1	12.1
2	2.0	3.0	4.1	5.1	6.1	7.1	8.1	9.2	10.2	11.2	12.2	13.3
3	3.1	4.1	5.1	6.1	7.2	8.2	9.2	10.3	11.3	12.4	13.4	14.5
4	4.1	5.2	6.2	7.2	8.3	9.3	10.4	11.4	12.5	13.5	14.6	15.6
5	5.2	6.3	7.3	8.4	9.4	10.5	11.5	12.6	13.7	14.7	15.8	16.9
6	6.3	7.4	8.4	9.5	10.6	11.6	12.7	13.8	14.9	16.0	17.0	18.1
7	7.5	8.5	9.6	10.7	11.8	12.8	13.9	15.0	16.1	17.2	18.3	19.4
8	8.6	9.7	10.8	11.9	13.0	14.1	15.2	16.3	17.4	18.5	19.6	20.7
9	9.8	10.9	12.0	13.1	14.2	15.3	16.4	17.6	18.7	19.8	20.9	22.0
10	11.0	12.1	13.2	14.4	15.5	16.6	17.7	18.9	20.0	21.1	22.3	23.4
11	12.2	13.4	14.5	15.6	16.8	17.9	19.1	20.2	21.4	22.5	23.7	24.8
12	13.5	14.6	15.8	16.9	18.1	19.3	20.4	21.6	22.8	23.9	25.1	26.3
13	14.8	16.0	17.1	18.3	19.5	20.6	21.8	23.0	24.2	25.4	26.6	27.8
14	16.1	17.3	18.5	19.7	20.9	22.1	23.3	24.5	25.7	26.9	28.1	29.3
15	17.5	18.7	19.9	21.1	22.3	23.5	24.7	25.9	27.2	28.4	29.6	30.9
16	18.9	20.1	21.3	22.6	23.8	25.0	26.2	27.5	28.7	30.0	31.2	32.5
17	20.3	21.6	22.8	24.1	25.3	26.6	27.8	29.1	30.3	31.6	32.9	34.1
18	21.8	23.1	24.3	25.6	26.9	28.1	29.4	30.7	32.0	33.3	34.6	35.9
19	23.3	24.6	25.9	27.2	28.5	29.8	31.1	32.4	33.7	35.0	36.3	37.6
20	24.9	26.2	27.5	28.8	30.1	31.5	32.8	34.1	35.4	36.8	38.1	39.5
21	26.5	27.9	29.2	30.5	31.8	33.2	34.5	35.9	37.3	38.6	40.0	41.4
22	28.2	29.5	30.9	32.3	33.6	35.0	36.4	37.7	39.1	40.5	41.9	43.3



续表

大孔阳 性格数	小孔阳性格数											
	0	1	2	3	4	5	6	7	8	9	10	11
23	29.9	31.3	32.7	34.1	35.5	36.8	38.3	39.7	41.1	42.5	43.9	45.4
24	31.7	33.1	34.5	35.9	37.3	38.8	40.2	41.7	43.1	44.6	46.0	47.5
25	33.6	35.0	36.4	37.9	39.3	40.8	42.2	43.7	45.2	46.7	48.2	49.7
26	35.5	36.9	38.4	39.9	41.4	42.8	44.3	45.9	47.4	48.9	50.4	52.0
27	37.4	38.9	40.4	42.0	43.5	45.0	46.5	48.1	49.6	51.2	52.8	54.4
28	39.5	41.0	42.6	44.1	45.7	47.3	48.8	50.4	52.0	53.6	55.2	56.9
29	41.7	43.2	44.8	46.4	48.0	49.6	51.2	52.8	54.5	56.1	57.8	59.5
30	43.9	45.5	47.1	48.7	50.4	52.0	53.7	55.4	57.1	58.8	60.5	62.2
31	46.2	47.9	49.5	51.2	52.9	54.6	56.3	58.1	59.8	61.6	63.3	65.1
32	48.7	50.4	52.1	53.8	55.6	57.3	59.1	60.9	62.7	64.5	66.3	68.2
33	51.2	53.0	54.8	56.5	58.3	60.2	62.0	63.8	65.7	67.6	69.5	71.4
34	53.9	55.7	57.6	59.4	61.3	63.1	65.0	67.0	68.9	70.8	72.8	74.8
35	56.8	58.6	60.5	62.4	64.4	66.3	68.3	70.3	72.3	74.3	76.3	78.4
36	59.8	61.7	63.7	65.7	67.7	69.7	71.7	73.8	75.9	78.0	80.1	82.3
37	62.9	65.0	67.0	69.1	71.2	73.3	75.4	77.6	79.8	82.0	84.2	86.5
38	66.3	68.4	70.6	72.7	74.9	77.1	79.4	81.6	83.9	86.2	88.6	91.0
39	70.0	72.2	74.4	76.7	78.9	81.3	83.6	86.0	88.4	90.9	93.4	95.9
40	73.8	76.2	78.5	80.9	83.3	85.7	88.2	90.8	93.3	95.9	98.5	101.2
41	78.0	80.5	83.0	85.5	88.0	90.6	93.3	95.9	98.7	101.4	104.3	107.1
42	82.6	85.2	87.8	90.5	93.2	96.0	98.8	101.7	104.6	107.6	110.6	113.7
43	87.6	90.4	93.2	96.0	99.0	101.9	105.0	108.1	111.2	114.5	117.8	121.1
44	93.1	96.1	99.1	102.2	105.4	108.6	111.9	115.3	118.7	122.3	125.9	129.6
45	99.3	102.5	105.8	109.2	112.6	116.2	119.8	123.6	127.4	131.4	135.4	139.6
46	106.3	109.8	113.4	117.2	121.0	125.0	129.1	133.3	137.6	142.1	146.7	151.5
47	114.3	118.3	122.4	126.6	130.9	135.4	140.1	145.0	150.0	155.3	160.7	166.4
48	123.9	128.4	133.1	137.9	143.0	148.3	153.9	159.7	165.8	172.2	178.9	186.0
49	135.5	140.8	146.4	152.3	158.5	165.0	172.0	179.3	187.2	195.6	204.6	214.3

续表

大孔阳 性格数	小孔阳性格数											
	12	13	14	15	16	17	18	19	20	21	22	23
0	12.0	13.0	14.1	15.1	16.1	17.1	18.1	19.1	20.2	21.2	22.2	23.3
1	13.2	14.2	15.2	16.2	17.3	18.3	19.3	20.4	21.4	22.4	23.5	24.5
2	14.3	15.4	16.4	17.4	18.5	19.5	20.6	21.6	22.7	23.7	24.8	25.8
3	15.5	16.5	17.6	18.6	19.7	20.8	21.8	22.9	23.9	25.0	26.1	27.1
4	16.7	17.8	18.8	19.9	21.0	22.0	23.1	24.2	25.3	26.3	27.4	28.5
5	17.9	19.0	20.1	21.2	22.2	23.3	24.4	25.5	26.6	27.7	28.8	29.9
6	19.2	20.3	21.4	22.5	23.6	24.7	25.8	26.9	28.0	29.1	30.2	31.3
7	20.5	21.6	22.7	23.8	24.9	26.0	27.1	28.3	29.4	30.5	31.6	32.8
8	21.8	22.9	24.1	25.2	26.3	27.4	28.6	29.7	30.8	32.0	33.1	34.3
9	23.2	24.3	25.4	26.6	27.7	28.9	30.0	31.2	32.3	33.5	34.6	35.8
10	24.6	25.7	26.9	28.0	29.2	30.3	31.5	32.7	33.8	35.0	36.2	37.4
11	26.0	27.2	28.3	29.5	30.7	31.9	33.0	34.2	35.4	36.6	37.8	39.0
12	27.5	28.6	29.8	31.0	32.2	33.4	34.6	35.8	37.0	38.2	39.5	40.7
13	29.0	30.2	31.4	32.6	33.8	35.0	36.2	37.5	38.7	39.9	41.2	42.4
14	30.5	31.7	33.0	34.2	35.4	36.7	37.9	39.1	40.4	41.6	42.9	44.2
15	32.1	33.3	34.6	35.8	37.1	38.4	39.6	40.9	42.2	43.4	44.7	46.0
16	33.7	35.0	36.3	37.5	38.8	40.1	41.4	42.7	44.0	45.3	46.6	47.9
17	35.4	36.7	38.0	39.3	40.6	41.9	43.2	44.5	45.9	47.2	48.5	49.8
18	37.2	38.5	39.8	41.1	42.4	43.8	45.1	46.5	47.8	49.2	50.5	51.9
19	39.0	40.3	41.6	43.0	44.3	45.7	47.1	48.4	49.8	51.2	52.6	54.0
20	40.8	42.2	43.6	44.9	46.3	47.7	49.1	50.5	51.9	53.3	54.7	56.1
21	42.8	44.1	45.5	46.9	48.4	49.8	51.2	52.6	54.1	55.5	56.9	58.4
22	44.8	46.2	47.6	49.0	50.5	51.9	53.4	54.8	56.3	57.8	59.3	60.8
23	46.8	48.3	49.7	51.2	52.7	54.2	55.6	57.1	58.6	60.2	61.7	63.2
24	49.0	50.5	52.0	53.5	55.0	56.5	58.0	59.5	61.1	62.6	64.2	65.8

续表

大孔阳 性格数	小孔阳性格数											
	12	13	14	15	16	17	18	19	20	21	22	23
25	51.2	52.7	54.3	55.8	57.3	58.9	60.5	62.0	63.6	65.2	66.8	68.4
26	53.5	55.1	56.7	58.2	59.8	61.4	63.0	64.7	66.3	67.9	69.6	71.2
27	56.0	57.6	59.2	60.8	62.4	64.1	65.7	67.4	69.1	70.8	72.5	74.2
28	58.5	60.2	61.8	63.5	65.2	66.9	68.6	70.3	72.0	73.7	75.5	77.3
29	61.2	62.9	64.6	66.3	68.0	69.8	71.5	73.3	75.1	76.9	78.7	80.5
30	64.0	65.7	67.5	69.3	71.0	72.9	74.7	76.5	78.3	80.2	82.1	84.0
31	66.9	68.7	70.5	72.4	74.2	76.1	78.0	79.9	81.8	83.7	85.7	87.6
32	70.0	71.9	73.8	75.7	77.6	79.5	81.5	83.5	85.4	87.5	89.5	91.5
33	73.3	75.2	77.2	79.2	81.2	83.2	85.2	87.3	89.3	91.4	93.6	95.7
34	76.8	78.8	80.8	82.9	85.0	87.1	89.2	91.4	93.5	95.7	97.9	100.2
35	80.5	82.6	84.7	86.9	89.1	91.3	93.5	95.7	98.0	100.3	102.6	105.0
36	84.5	86.7	88.9	91.2	93.5	95.8	98.1	100.5	102.9	105.3	107.7	110.2
37	88.8	91.1	93.4	95.8	98.2	100.6	103.1	105.6	108.1	110.7	113.3	115.9
38	93.4	95.8	98.3	100.8	103.4	105.9	108.6	111.2	113.9	116.6	119.4	122.2
39	98.4	101.0	103.6	106.3	109.0	111.8	114.6	117.4	120.3	123.2	126.1	129.2
40	103.9	106.7	109.5	112.4	115.3	118.2	121.2	124.3	127.4	130.5	133.7	137.0
41	110.0	113.0	116.0	119.1	122.2	125.4	128.7	132.0	135.4	138.8	142.3	145.9
42	116.9	120.1	123.4	126.7	130.1	133.6	137.2	140.8	144.5	148.3	152.2	156.1
43	124.6	128.1	131.7	135.4	139.1	143.0	147.0	151.0	155.2	159.4	163.8	168.2
44	133.4	137.4	141.4	145.5	149.7	154.1	158.5	163.1	167.9	172.7	177.7	182.9
45	143.9	148.3	152.9	157.6	162.4	167.4	172.6	178.0	183.5	189.2	195.1	201.2
46	156.5	161.6	167.0	172.5	178.2	184.2	190.4	196.8	203.5	210.5	217.8	225.4
47	172.3	178.5	185.0	191.8	198.9	206.4	214.2	222.4	231.0	240.0	249.5	259.5
48	193.5	201.4	209.8	218.7	228.2	238.2	248.9	260.3	272.3	285.1	298.7	313.0
49	224.7	235.9	248.1	261.3	275.5	290.9	307.6	325.5	344.8	365.4	387.3	410.6

续表

大孔阳 性格数	小孔阳性格数											
	24	25	26	27	28	29	30	31	32	33	34	35
0	24.3	25.3	26.4	27.4	28.4	29.5	30.5	31.5	32.6	33.6	34.7	35.7
1	25.6	26.6	27.7	28.7	29.8	30.8	31.9	32.9	34.0	35.0	36.1	37.2
2	26.9	27.9	29.0	30.0	31.1	32.2	33.2	34.3	35.4	36.5	37.5	38.6
3	28.2	29.3	30.4	31.4	32.5	33.6	34.7	35.8	36.8	37.9	39.0	40.1
4	29.6	30.7	31.8	32.8	33.9	35.0	36.1	37.2	38.3	39.4	40.5	41.6
5	31.0	32.1	33.2	34.3	35.4	36.5	37.6	38.7	39.9	41.0	42.1	43.2
6	32.4	33.5	34.7	35.8	36.9	38.0	39.2	40.3	41.4	42.6	43.7	44.8
7	33.9	35.0	36.2	37.3	38.4	39.6	40.7	41.9	43.0	44.2	45.3	46.5
8	35.4	36.6	37.7	38.9	40.0	41.2	42.3	43.5	44.7	45.9	47.0	48.2
9	37.0	38.1	39.3	40.5	41.6	42.8	44.0	45.2	46.4	47.6	48.8	50.0
10	38.6	39.7	40.9	42.1	43.3	44.5	45.7	46.9	48.1	49.3	50.6	51.8
11	40.2	41.4	42.6	43.8	45.0	46.3	47.5	48.7	49.9	51.2	52.4	53.7
12	41.9	43.1	44.3	45.6	46.8	48.1	49.3	50.6	51.8	53.1	54.3	55.6
13	43.6	44.9	46.1	47.4	48.6	49.9	51.2	52.5	53.7	55.0	56.3	57.6
14	45.4	46.7	48.0	49.3	50.5	51.8	53.1	54.4	55.7	57.0	58.3	59.6
15	47.3	48.6	49.9	51.2	52.5	53.8	55.1	56.4	57.8	59.1	60.4	61.8
16	49.2	50.5	51.8	53.2	54.5	55.8	57.2	58.5	59.9	61.2	62.6	64.0
17	51.2	52.5	53.9	55.2	56.6	58.0	59.3	60.7	62.1	63.5	64.9	66.3
18	53.2	54.6	56.0	57.4	58.8	60.2	61.6	63.0	64.4	65.8	67.2	68.6
19	55.4	56.8	58.2	59.6	61.0	62.4	63.9	65.3	66.8	68.2	69.7	71.1
20	57.6	59.0	60.4	61.9	63.3	64.8	66.3	67.7	69.2	70.7	72.2	73.7
21	59.9	61.3	62.8	64.3	65.8	67.3	68.8	70.3	71.8	73.3	74.9	76.4
22	62.3	63.8	65.3	66.8	68.3	69.8	71.4	72.9	74.5	76.1	77.6	79.2
23	64.7	66.3	67.8	69.4	71.0	72.5	74.1	75.7	77.3	78.9	80.5	82.2
24	67.3	68.9	70.5	72.1	73.7	75.3	77.0	78.6	80.3	81.9	83.6	85.2

续表

大孔阳 性格数	小孔阳性格数											
	24	25	26	27	28	29	30	31	32	33	34	35
25	70.0	71.7	73.3	75.0	76.6	78.3	80.0	81.7	83.3	85.1	86.8	88.5
26	72.9	74.6	76.3	78.0	79.7	81.4	83.1	84.8	86.6	88.4	90.1	91.9
27	75.9	77.6	79.4	81.1	82.9	84.6	86.4	88.2	90.0	91.9	93.7	95.5
28	79.0	80.8	82.6	84.4	86.3	88.1	89.9	91.8	93.7	95.6	97.5	99.4
29	82.4	84.2	86.1	87.9	89.8	91.7	93.7	95.6	97.5	99.5	101.5	103.5
30	85.9	87.8	89.7	91.7	93.6	95.6	97.6	99.6	101.6	103.7	105.7	107.8
31	89.6	91.6	93.6	95.6	97.7	99.7	101.8	103.9	106.0	108.2	110.3	112.5
32	93.6	95.7	97.8	99.9	102.0	104.2	106.3	108.5	110.7	113.0	115.2	117.5
33	97.8	100.0	102.2	104.4	106.6	108.9	111.2	113.5	115.8	118.2	120.5	122.9
34	102.4	104.7	107.0	109.3	111.7	114.0	116.4	118.9	121.3	123.8	126.3	128.8
35	107.3	109.7	112.2	114.6	117.1	119.6	122.2	124.7	127.3	129.9	132.6	135.3
36	112.7	115.2	117.8	120.4	123.0	125.7	128.4	131.1	133.9	136.7	139.5	142.4
37	118.6	121.3	124.0	126.8	129.6	132.4	135.3	138.2	141.2	144.2	147.3	150.3
38	125.0	127.9	130.8	133.8	136.8	139.9	143.0	146.2	149.4	152.6	155.9	159.2
39	132.2	135.3	138.5	141.7	145.0	148.3	151.7	155.1	158.6	162.1	165.7	169.4
40	140.3	143.7	147.1	150.6	154.2	157.8	161.5	165.3	169.1	173.0	177.0	181.1
41	149.5	153.2	157.0	160.9	164.8	168.9	173.0	177.2	181.5	185.8	190.3	194.8
42	160.2	164.3	168.6	172.9	177.3	181.9	186.5	191.3	196.1	201.1	206.2	211.4
43	172.8	177.5	182.3	187.3	192.4	197.6	202.9	208.4	214.0	219.8	225.8	231.8
44	188.2	193.6	199.3	205.1	211.0	217.2	223.5	230.0	236.7	243.6	250.8	258.1
45	207.5	214.1	220.9	227.9	235.2	242.7	250.4	258.4	266.7	275.3	284.1	293.3
46	233.3	241.5	250.0	258.9	268.2	277.8	287.8	298.1	308.8	319.9	331.4	343.3
47	270.0	280.9	292.4	304.4	316.9	330.0	343.6	357.8	372.5	387.7	403.4	419.8
48	328.2	344.1	360.9	378.4	396.8	416.0	436.0	456.9	478.6	501.2	524.7	549.3
49	435.2	461.1	488.4	517.2	547.5	579.4	613.1	648.8	686.7	727.0	770.1	816.4

续表

大孔阳 性格数	小孔阳性格数												
	36	37	38	39	40	41	42	43	44	45	46	47	48
0	36.8	37.8	38.9	40.0	41.0	42.1	43.1	44.2	45.3	46.3	47.4	48.5	49.5
1	38.2	39.3	40.4	41.4	42.5	43.6	44.7	45.7	46.8	47.9	49.0	50.1	51.2
2	39.7	40.8	41.9	43.0	44.0	45.1	46.2	47.3	48.4	49.5	50.6	51.7	52.8
3	41.2	42.3	43.4	44.5	45.6	46.7	47.8	48.9	50.0	51.2	52.3	53.4	54.5
4	42.8	43.9	45.0	46.1	47.2	48.3	49.5	50.6	51.7	52.9	54.0	55.1	56.3
5	44.4	45.5	46.6	47.7	48.9	50.0	51.2	52.3	53.5	54.6	55.8	56.9	58.1
6	46.0	47.1	48.3	49.4	50.6	51.7	52.9	54.1	55.2	56.4	57.6	58.7	59.9
7	47.7	48.8	50.0	51.2	52.3	53.5	54.7	55.9	57.1	58.3	59.4	60.6	61.8
8	49.4	50.6	51.8	53.0	54.1	55.3	56.5	57.7	59.0	60.2	61.4	62.6	63.8
9	51.2	52.4	53.6	54.8	56.0	57.2	58.4	59.7	60.9	62.1	63.4	64.6	65.8
10	53.0	54.2	55.5	56.7	57.9	59.2	60.4	61.7	62.9	64.2	65.4	66.7	67.9
11	54.9	56.1	57.4	58.6	59.9	61.2	62.4	63.7	65.0	66.3	67.5	68.8	70.1
12	56.8	58.1	59.4	60.7	62.0	63.2	64.5	65.8	67.1	68.4	69.7	71.0	72.4
13	58.9	60.2	61.5	62.8	64.1	65.4	66.7	68.0	69.3	70.7	72.0	73.3	74.7
14	60.9	62.3	63.6	64.9	66.3	67.6	68.9	70.3	71.6	73.0	74.4	75.7	77.1
15	63.1	64.5	65.8	67.2	68.5	69.9	71.3	72.6	74.0	75.4	76.8	78.2	79.6
16	65.3	66.7	68.1	69.5	70.9	72.3	73.7	75.1	76.5	77.9	79.3	80.8	82.2
17	67.7	69.1	70.5	71.9	73.3	74.8	76.2	77.6	79.1	80.5	82.0	83.5	84.9
18	70.1	71.5	73.0	74.4	75.9	77.3	78.8	80.3	81.8	83.3	84.8	86.3	87.8
19	72.6	74.1	75.5	77.0	78.5	80.0	81.5	83.1	84.6	86.1	87.6	89.2	90.7
20	75.2	76.7	78.2	79.8	81.3	82.8	84.4	85.9	87.5	89.1	90.7	92.2	93.8
21	77.9	79.5	81.1	82.6	84.2	85.8	87.4	89.0	90.6	92.2	93.8	95.4	97.1
22	80.8	82.4	84.0	85.6	87.2	88.9	90.5	92.1	93.8	95.5	97.1	98.8	100.5
23	83.8	85.4	87.1	88.7	90.4	92.1	93.8	95.5	97.2	98.9	100.6	102.4	104.1
24	86.9	88.6	90.3	92.0	93.8	95.5	97.2	99.0	100.7	102.5	104.3	106.1	107.9

续表

大孔阳 性格数	小孔阳性格数												
	36	37	38	39	40	41	42	43	44	45	46	47	48
25	90.2	92.0	93.7	95.5	97.3	99.1	100.9	102.7	104.5	106.3	108.2	110.0	111.9
26	93.7	95.5	97.3	99.2	101.0	102.9	104.7	106.6	108.5	110.4	112.3	114.2	116.2
27	97.4	99.3	101.2	103.1	105.0	106.9	108.8	110.8	112.7	114.7	116.7	118.7	120.7
28	101.3	103.3	105.2	107.2	109.2	111.2	113.2	115.2	117.3	119.3	121.4	123.5	125.6
29	105.5	107.5	109.5	111.6	113.7	115.7	117.8	120.0	122.1	124.2	126.4	128.6	130.8
30	109.9	112.0	114.2	116.3	118.5	120.6	122.8	125.1	127.3	129.5	131.8	134.1	136.4
31	114.7	116.9	119.1	121.4	123.6	125.9	128.2	130.5	132.9	135.3	137.7	140.1	142.5
32	119.8	122.1	124.5	126.8	129.2	131.6	134.0	136.5	139.0	141.5	144.0	146.6	149.1
33	125.4	127.8	130.3	132.8	135.3	137.8	140.4	143.0	145.6	148.3	150.9	153.7	156.4
34	131.4	134.0	136.6	139.2	141.9	144.6	147.4	150.1	152.9	155.7	158.6	161.5	164.4
35	138.0	140.8	143.6	146.4	149.2	152.1	155.0	158.0	161.0	164.0	167.1	170.2	173.3
36	145.3	148.3	151.3	154.3	157.3	160.5	163.6	166.8	170.0	173.3	176.6	179.9	183.3
37	153.5	156.7	159.9	163.1	166.5	169.8	173.2	176.7	180.2	183.7	187.3	191.0	194.7
38	162.6	166.1	169.6	173.2	176.8	180.4	184.2	188.0	191.8	195.7	199.7	203.7	207.7
39	173.1	176.9	180.7	184.7	188.7	192.7	196.8	201.0	205.3	209.6	214.0	218.5	223.0
40	185.2	189.4	193.7	198.1	202.5	207.1	211.7	216.4	221.1	226.0	231.0	236.0	241.1
41	199.5	204.2	209.1	214.0	219.1	224.2	229.4	234.8	240.2	245.8	251.5	257.2	263.1
42	216.7	222.2	227.7	233.4	239.2	245.2	251.3	257.5	263.8	270.3	276.9	283.6	290.5
43	238.1	244.5	251.0	257.7	264.6	271.7	278.9	286.3	293.8	301.5	309.4	317.4	325.7
44	265.6	273.3	281.2	289.4	297.8	306.3	315.1	324.1	333.3	342.8	352.4	362.3	372.4
45	302.6	312.3	322.3	332.5	343.0	353.8	364.9	376.2	387.9	399.8	412.0	424.5	437.4
46	355.5	368.1	381.1	394.5	408.3	422.5	437.1	452.0	467.4	483.3	499.6	516.3	533.5
47	436.6	454.1	472.1	490.7	509.9	529.8	550.4	571.7	593.8	616.7	640.5	665.3	691.0
48	574.8	601.5	629.4	658.6	689.3	721.5	755.6	791.5	829.7	870.4	913.9	960.6	1011.2
49	866.4	920.8	980.4	1046.2	1119.9	1203.3	1299.7	1413.6	1553.1	1732.9	1986.3	2419.6	>2419.6

附录 C

(资料性附录)

97 孔定量盘法 MPN 表对应 95%置信区间

表 C.1 97 孔定量盘法 MPN 表对应 95%置信区间 (MPN/100 ml)

大孔阳 性格数	小孔阳性格数						
	0	1	2	3	4	5	6
0	0.0~3.7	0.0~3.7	0.3~5.6	0.6~7.3	1.1~8.9	1.7~10.5	2.3~12.1
1	0.1~5.5	0.3~5.9	0.6~7.3	1.1~8.9	1.7~10.5	2.3~12.1	3.0~13.7
2	0.3~7.1	0.7~7.4	1.2~9.0	1.6~10.6	2.3~12.1	3.0~13.7	3.7~15.3
3	0.7~8.9	1.2~9.1	1.7~10.6	2.3~12.1	3.0~13.7	3.6~15.3	4.4~16.9
4	1.7~9.5	1.8~10.8	2.4~12.2	2.9~13.7	3.6~15.3	4.5~16.9	5.2~18.5
5	2.3~11.9	2.5~12.7	2.9~13.9	3.7~15.3	4.3~16.9	5.2~18.5	6.0~20.1
6	2.9~13.7	3.2~14.4	3.7~15.3	4.4~16.9	5.3~18.5	6.0~20.1	6.8~21.7
7	3.6~14.9	3.9~15.6	4.4~16.9	5.1~18.5	6.1~20.1	6.9~21.7	7.8~22.9
8	4.5~16.9	4.5~17.2	5.2~18.6	5.9~20.2	6.7~21.8	7.8~23.4	8.7~24.6
9	4.7~18.4	5.6~19.5	6.0~20.3	6.8~21.8	7.6~23.4	8.5~25.1	9.5~26.4
10	5.7~20.1	6.5~21.1	7.1~22.0	7.7~23.6	8.6~25.1	9.6~26.8	10.6~27.5
11	6.8~21.4	7.4~22.3	7.8~23.6	8.7~25.3	9.7~26.8	10.7~28.2	11.4~29.3
12	7.8~23.4	8.2~24.6	8.8~25.7	9.4~27.0	10.4~28.6	11.5~30.0	12.6~31.2
13	8.5~25.1	9.2~26.4	9.9~27.4	10.5~28.8	11.6~30.4	12.7~31.8	13.4~33.1
14	9.3~26.8	10.3~28.2	11.0~29.2	11.7~30.7	12.4~32.3	13.6~33.7	14.8~35.0
15	10.1~28.6	10.8~30.0	11.9~30.9	12.6~32.6	13.7~34.1	14.9~35.2	15.7~36.5
16	11.3~30.4	12.4~31.8	12.7~32.6	13.9~34.5	14.6~35.8	15.9~37.1	17.2~38.5
17	12.1~32.2	12.9~33.7	14.0~35.0	14.8~36.5	16.1~37.7	16.9~39.2	18.2~40.6
18	13.4~33.9	14.2~35.7	15.4~37.1	15.7~38.4	17.1~39.8	18.4~41.3	19.2~42.7
19	14.4~36.1	15.1~37.6	16.4~39.1	17.3~40.2	18.1~41.8	19.5~43.4	20.9~44.9
20	15.8~38.1	16.6~39.7	17.5~41.2	18.3~42.7	19.7~44.2	20.6~45.7	22.1~47.2
21	16.8~40.1	18.2~41.3	18.5~43.1	19.4~44.8	20.8~46.4	21.7~47.9	23.3~49.5
22	17.9~42.3	18.8~44.0	19.6~45.5	21.2~47.2	22.0~48.8	23.6~50.3	24.5~51.3



续表

大孔阳 性格数	小孔阳性格数						
	0	1	2	3	4	5	6
23	19.0~44.4	20.5~46.0	21.4~47.7	22.3~49.2	23.9~51.0	24.8~52.2	25.8~53.8
24	20.7~46.6	21.7~48.1	23.3~50.1	24.2~51.9	25.2~53.3	26.1~54.7	27.1~56.4
25	22.0~48.9	22.9~51.2	23.8~52.6	25.5~54.0	26.5~55.9	28.3~57.3	29.3~59.0
26	23.2~52.0	24.9~53.7	25.9~55.4	26.9~56.5	27.9~58.6	29.7~60.1	30.7~61.8
27	24.5~54.5	26.2~55.9	27.3~57.4	28.3~59.7	29.3~60.8	31.2~63.0	32.3~64.7
28	25.9~57.0	27.7~58.8	28.7~60.7	30.6~62.5	30.8~63.8	32.8~65.9	33.9~67.5
29	28.1~59.8	29.1~61.4	30.2~63.4	31.3~65.4	33.3~67.2	34.4~68.5	35.5~70.7
30	29.6~62.6	30.7~64.5	31.8~66.6	33.8~68.0	34.9~70.1	36.1~72.2	38.3~74.0
31	31.1~65.5	32.3~67.5	34.4~69.3	35.5~71.7	36.7~73.7	37.9~75.6	39.1~77.6
32	32.8~69.0	33.9~70.9	36.1~73.0	37.3~75.0	38.5~77.2	39.7~79.1	42.1~81.2
33	34.5~72.3	36.7~74.3	38.0~76.4	39.2~78.6	40.5~80.6	42.9~83.0	44.2~85.1
34	37.4~75.8	38.6~77.9	39.9~80.0	41.2~82.2	43.7~84.6	45.0~86.9	46.4~89.2
35	39.4~79.5	40.7~81.5	42.0~83.7	43.3~86.2	44.6~88.6	47.3~90.4	48.7~93.0
36	41.4~83.4	42.8~85.4	44.1~87.8	45.5~90.3	46.9~92.7	49.7~95.3	51.1~97.5
37	43.6~87.4	45.0~89.6	46.5~92.0	47.9~95.6	50.7~98.3	52.2~100.1	53.8~102.6
38	46.0~91.7	47.5~96.2	48.9~98.5	51.9~101.0	53.4~102.9	55.0~105.7	56.6~107.7
39	48.5~98.5	50.0~101.1	53.0~103.6	54.6~106.2	56.3~108.8	57.9~111.4	59.6~113.8
40	51.2~103.6	52.8~106.2	56.0~109.0	57.7~111.7	59.4~114.6	61.1~117.2	62.9~120.2
41	54.1~109.0	55.8~111.8	57.5~114.9	60.9~118.0	62.8~121.0	64.6~124.1	66.5~126.3
42	57.3~115.4	59.1~118.3	60.9~121.9	62.8~125.0	66.5~128.0	68.4~131.7	70.4~135.3
43	60.7~123.1	62.7~126.0	64.6~129.1	68.5~132.1	70.5~136.7	72.7~140.4	74.8~143.9
44	64.6~130.6	66.6~135.3	68.7~138.7	70.9~142.2	75.1~145.4	77.4~150.0	79.8~154.0
45	68.8~140.4	71.1~144.2	73.4~148.9	75.7~152.6	78.1~156.6	80.6~160.7	83.1~165.2
46	71.6~151.7	76.1~155.9	78.7~159.9	81.3~163.9	83.9~168.3	86.7~176.8	89.5~181.9
47	79.3~163.7	82.0~168.0	84.8~177.0	85.3~181.9	88.2~187.2	91.3~192.7	97.2~198.8
48	83.5~181.9	86.5~187.2	89.7~192.9	92.9~199.0	99.2~206.3	102.8~212.4	106.7~222.4
49	88.7~203.4	92.1~209.3	98.7~219.3	102.6~228.4	106.8~235.5	111.2~243.4	115.9~260.5

续表

大孔阳 性格数	小孔阳性格数						
	7	8	9	10	11	12	13
0	2.9~13.7	3.7~15.3	4.5~15.8	5.2~16.9	5.9~18.5	6.9~20.1	7.8~21.2
1	3.7~15.3	4.3~16.2	5.2~17.2	6.0~18.5	6.8~20.1	7.6~21.7	8.7~22.2
2	4.4~16.9	5.3~17.8	6.0~18.6	6.8~20.1	7.7~21.7	8.5~22.9	9.4~24.0
3	5.1~18.3	6.1~18.8	6.9~20.2	7.7~21.8	8.6~23.6	9.5~24.1	10.2~25.3
4	5.9~19.5	6.9~20.5	7.8~21.8	8.7~23.4	9.6~24.6	10.3~25.7	10.9~26.9
5	6.8~21.2	7.6~21.9	8.5~23.4	9.4~25.1	10.4~26.4	11.0~27.0	11.7~28.6
6	7.7~22.0	8.6~23.6	9.5~25.1	10.5~26.8	11.1~27.5	11.8~28.8	12.5~30.4
7	8.7~24.0	9.6~25.3	10.6~26.9	11.6~28.2	12.3~29.3	12.6~30.5	13.7~31.9
8	9.7~25.7	10.4~26.9	11.4~28.6	12.4~30.0	13.1~30.7	13.9~32.3	14.6~33.8
9	10.5~27.0	11.5~28.6	12.6~30.4	13.3~31.2	14.0~32.6	14.7~34.2	15.9~35.2
10	11.6~28.8	12.7~30.4	13.4~31.8	14.1~33.1	14.9~34.5	16.1~35.7	16.8~37.1
11	12.4~30.7	13.6~32.3	14.3~33.8	15.5~35.0	15.8~36.1	17.0~37.7	18.3~39.1
12	13.7~32.6	14.9~34.2	15.7~35.2	15.9~36.5	17.2~38.1	18.0~39.2	19.3~40.6
13	14.6~34.5	15.8~35.7	16.6~37.1	17.4~38.5	18.2~39.9	19.5~41.3	20.3~42.7
14	16.0~36.1	16.8~37.7	17.6~39.1	18.4~40.6	19.7~41.8	20.6~43.4	22.0~44.4
15	17.0~38.1	17.8~39.7	18.6~41.2	19.4~42.3	20.8~44.0	21.6~44.9	23.1~46.5
16	18.0~40.2	18.8~41.6	19.6~42.7	21.0~44.4	21.9~45.7	23.4~47.2	24.3~48.8
17	19.0~42.0	20.4~43.4	21.3~44.9	22.2~46.5	27.3~48.0	24.6~49.5	25.5~51.0
18	20.7~44.2	21.6~45.7	22.4~47.2	23.3~48.8	24.9~50.3	25.8~51.2	26.7~52.8
19	21.8~46.5	22.7~48.0	23.6~49.5	25.2~51.0	26.1~52.0	27.0~53.7	27.9~55.4
20	23.0~48.8	23.9~50.3	25.5~51.2	26.4~52.8	27.4~54.5	28.3~56.2	30.1~57.6
21	24.2~51.0	25.8~52.0	26.8~53.7	27.7~55.4	28.7~57.1	30.5~58.6	31.5~60.1
22	26.2~52.9	27.1~54.5	28.1~56.2	29.1~58.0	30.9~59.7	31.9~60.8	32.9~62.5
23	26.7~55.4	28.5~57.1	29.5~58.9	30.5~60.2	32.3~61.8	33.4~63.6	34.4~65.4
24	28.9~58.0	29.9~59.8	30.9~61.3	32.8~63.0	33.9~64.7	34.9~66.1	36.0~67.8

续表

大孔阳 性格数	小孔阳性格数						
	7	8	9	10	11	12	13
25	30.3~60.7	31.3~62.5	33.3~64.2	34.4~66.0	35.4~67.3	36.5~69.0	37.6~70.7
26	31.8~63.5	32.8~65.4	34.9~66.6	36.0~68.5	37.1~70.4	38.2~72.2	40.4~73.7
27	33.3~66.1	35.4~67.8	36.5~69.7	37.6~71.7	38.8~73.4	41.0~75.0	42.2~77.2
28	35.0~69.1	37.1~71.0	38.2~73.0	39.4~74.4	41.7~76.4	41.7~77.9	44.1~80.0
29	36.6~72.3	38.8~74.1	40.0~75.9	41.2~77.8	42.4~79.5	44.8~81.4	46.0~83.3
30	39.5~75.8	40.7~77.6	41.9~79.5	43.1~81.4	45.6~83.3	46.8~85.3	48.1~87.3
31	41.4~79.5	42.6~81.4	43.9~83.3	46.4~85.3	47.7~87.3	49.0~89.5	50.3~91.6
32	43.4~83.3	44.7~85.3	46.0~87.3	48.6~89.5	49.9~91.6	51.3~93.9	52.6~94.6
33	45.5~87.2	46.8~89.2	49.5~91.6	50.9~93.9	52.3~94.6	53.7~96.2	55.1~98.5
34	47.7~91.5	50.5~93.8	50.5~94.6	51.9~96.2	54.8~98.5	56.2~101.0	57.7~103.6
35	50.1~94.6	51.5~96.4	53.0~98.8	55.9~101.2	57.4~103.6	59.0~106.2	60.5~109.0
36	52.6~99.5	54.1~101.4	55.6~103.8	58.7~106.4	60.3~109.1	61.9~111.8	63.5~114.7
37	55.3~104.5	56.9~107.0	60.0~109.4	61.7~112.2	63.3~114.9	65.0~117.5	66.7~120.2
38	58.2~110.3	59.8~112.8	63.2~115.4	64.9~118.3	66.6~121.0	68.4~123.1	70.2~126.0
39	61.3~115.5	63.0~119.2	66.6~121.6	68.4~124.2	70.2~127.6	72.1~130.6	74.0~133.7
40	66.5~123.1	66.5~125.4	70.2~128.9	72.2~132.1	74.1~135.0	76.1~137.0	78.2~140.4
41	68.4~130.5	72.3~133.7	74.3~136.1	76.4~139.3	78.5~142.7	80.6~146.2	82.8~149.1
42	72.5~138.2	74.6~142.1	78.8~145.4	81.0~148.8	83.3~151.7	85.6~155.9	87.9~159.8
43	77.0~147.2	79.3~151.7	81.6~155.5	86.3~158.2	88.7~163.3	91.2~167.8	93.8~172.1
44	82.2~158.1	84.7~162.7	87.2~167.2	92.2~172.0	95.0~174.4	95.1~177.9	97.9~182.9
45	85.7~170.1	90.8~176.4	93.6~180.4	96.5~184.0	99.5~190.0	102.6~195.0	105.7~199.9
46	92.4~186.9	98.1~192.3	101.3~196.8	104.6~201.1	108.0~207.8	111.6~215.4	115.2~220.6
47	100.5~204.8	104.0~211.8	107.7~218.7	111.4~226.4	115.4~234.0	119.5~242.2	123.8~250.5
48	110.7~229.7	114.9~238.0	119.4~245.0	124.0~257.8	125.3~268.8	130.4~279.5	135.7~284.0
49	120.8~270.3	126.1~281.0	128.0~292.9	137.9~306.9	140.2~320.9	147.0~343.5	159.0~360.0

续表

大孔阳 性格数	小孔阳性格数						
	14	15	16	17	18	19	20
0	8.6~21.9	9.0~23.4	9.6~24.9	10.5~25.7	11.5~26.9	12.5~28.6	13.2~29.3
1	9.4~23.6	9.7~25.1	10.6~26.4	11.6~27.0	12.6~28.6	13.3~30.0	14.0~30.7
2	9.8~25.1	10.4~26.8	11.4~27.5	12.4~28.8	13.5~30.4	14.1~31.2	14.8~32.6
3	10.5~26.9	11.5~28.2	12.5~29.2	13.6~30.4	14.3~31.8	15.0~32.7	15.7~34.2
4	11.6~28.6	12.6~29.3	13.7~30.7	14.8~32.2	15.1~33.1	15.8~34.5	17.0~35.7
5	12.4~30.0	13.4~31.2	14.6~32.3	15.7~33.8	16.0~35.0	17.2~36.1	17.9~37.5
6	13.6~31.8	14.7~32.6	15.9~34.2	16.6~35.2	17.4~36.5	18.1~37.8	19.4~39.1
7	14.9~33.1	15.6~34.5	16.8~35.7	17.5~37.1	18.3~38.1	19.6~39.7	20.4~40.6
8	15.7~35.0	17.0~36.1	17.7~37.7	18.5~38.5	19.2~40.2	20.6~41.3	21.4~42.7
9	17.1~36.5	17.9~38.1	18.7~39.2	19.5~40.6	20.8~41.8	21.6~43.2	22.4~44.4
10	18.1~38.5	18.9~39.7	19.7~41.2	21.0~42.3	21.8~43.4	23.3~44.9	23.5~46.5
11	19.1~40.2	19.9~41.6	20.7~42.7	22.1~44.2	23.6~45.7	23.7~46.8	25.2~48.0
12	20.1~42.0	21.5~43.4	22.3~44.9	23.2~46.2	24.7~47.2	24.8~48.8	26.4~50.3
13	21.8~44.2	22.6~45.6	23.4~46.6	25.0~48.0	25.8~49.5	26.7~51.0	27.6~52.0
14	22.9~45.8	23.7~47.2	24.6~48.8	26.1~50.3	27.0~51.2	27.9~52.8	28.8~54.5
15	24.0~48.0	24.9~49.5	26.4~51.0	27.3~52.0	28.2~53.7	29.1~55.2	30.9~56.2
16	25.2~50.3	26.8~51.2	27.7~52.8	28.6~54.5	29.5~55.9	30.4~57.1	32.2~58.6
17	26.4~52.0	28.0~53.7	28.9~55.4	29.9~56.4	30.8~58.0	32.6~59.7	33.6~60.8
18	27.6~54.5	29.3~56.1	30.3~57.4	31.2~58.9	33.0~60.2	34.0~61.8	35.0~63.4
19	29.7~57.0	30.7~58.0	31.6~59.8	32.6~61.3	34.5~62.6	35.5~64.2	36.5~66.0
20	31.1~59.0	32.0~60.7	33.0~62.5	34.9~63.6	36.0~65.4	37.0~66.6	38.0~68.5
21	32.5~61.6	33.5~63.0	35.4~64.7	36.5~66.1	37.5~67.8	38.5~69.2	39.6~70.9
22	33.9~64.2	35.0~66.0	37.0~67.3	38.0~69.0	39.1~70.4	40.2~72.2	41.2~73.7
23	35.5~66.6	37.5~68.5	38.6~70.3	39.7~71.7	40.8~73.4	41.9~75.0	43.0~76.4
24	38.1~69.7	39.2~71.0	40.3~73.0	41.4~74.4	42.5~75.9	44.8~77.8	45.9~79.5

续表

大孔阳 性格数	小孔阳性格数						
	14	15	16	17	18	19	20
25	39.7~72.4	40.9~74.0	42.0~75.9	43.1~77.6	45.5~79.5	46.7~81.2	47.8~83.0
26	41.5~75.7	42.7~77.6	43.8~79.2	45.0~80.8	46.2~82.7	48.6~84.2	49.8~85.4
27	43.3~78.6	44.5~80.6	45.7~82.3	46.9~83.7	49.4~85.3	50.7~87.3	51.9~89.5
28	45.3~81.5	46.5~83.4	47.7~85.3	50.3~87.3	51.6~89.5	52.8~91.6	54.1~93.9
29	47.3~85.3	48.6~87.3	51.2~89.5	51.1~91.6	53.8~93.9	55.1~94.6	56.5~96.2
30	49.4~89.5	50.7~91.6	52.0~93.9	54.8~94.6	56.1~96.2	57.5~98.6	58.9~101.0
31	51.7~93.9	53.0~94.6	55.8~96.2	57.2~98.5	58.6~101.0	60.1~103.6	61.5~105.7
32	54.0~96.2	56.9~98.5	58.4~101.0	59.8~103.6	61.3~106.2	62.8~108.0	64.3~109.4
33	58.1~101.0	59.5~103.6	61.0~106.2	62.6~108.3	64.1~110.3	65.6~112.2	67.2~114.9
34	60.8~106.2	62.3~108.8	63.9~111.1	65.5~112.8	67.1~115.1	68.7~118.0	70.3~120.4
35	62.1~111.4	65.3~113.8	67.0~115.4	68.6~118.3	70.3~121.2	72.0~123.1	73.7~126.0
36	66.9~116.4	68.6~119.2	70.3~121.8	72.0~124.2	73.8~127.1	75.5~129.1	77.3~132.1
37	70.3~121.9	72.0~125.0	73.8~127.6	75.7~130.6	77.5~133.7	79.4~135.3	83.4~138.7
38	73.9~128.9	75.8~132.1	77.7~135.0	79.7~137.0	81.6~140.4	83.6~143.0	85.6~146.2
39	75.9~135.3	77.9~138.7	82.0~142.2	84.0~145.4	86.1~148.2	88.3~151.7	92.8~154.7
40	80.2~144.0	84.5~147.9	86.7~150.0	88.9~154.0	91.1~156.6	95.9~159.9	95.8~163.7
41	87.2~152.6	89.6~156.1	91.9~159.8	94.3~163.7	94.2~168.0	99.2~172.4	101.8~174.4
42	92.8~163.7	95.3~168.0	95.3~172.4	97.8~174.4	103.1~177.0	105.9~182.0	108.7~187.2
43	96.5~174.4	99.2~177.0	101.9~182.0	107.5~187.2	110.5~192.9	113.5~197.7	116.7~200.4
44	103.5~187.8	106.6~193.2	109.7~199.0	115.9~203.5	119.2~209.3	122.7~213.8	126.2~219.3
45	112.0~206.2	115.4~212.3	119.0~215.7	122.6~222.7	126.4~228.5	130.3~235.5	134.4~243.1
46	119.0~227.9	123.0~235.5	130.5~243.1	134.9~251.4	135.7~254.1	144.2~260.8	149.1~270.3
47	131.9~256.3	136.7~264.5	141.8~273.3	147.1~283.1	152.7~294.4	158.5~303.3	169.2~315.5
48	145.5~301.1	151.7~314.5	158.2~323.1	165.2~340.8	172.6~350.2	175.4~365.2	183.5~382.9
49	162.3~371.9	170.9~398.5	185.7~416.8	190.4~446.1	195.3~471.2	206.6~498.1	218.9~520.7

续表

大孔阳 性格数	小孔阳性格数						
	21	22	23	24	25	26	27
0	13.9~30.5	14.5~31.8	15.7~33.1	16.4~34.2	17.6~35.2	18.3~36.5	19.5~37.7
1	14.7~32.3	15.8~33.1	17.0~34.5	17.2~35.7	18.4~37.1	19.2~38.1	20.5~39.2
2	16.0~33.8	17.2~35.0	17.9~36.1	18.1~37.1	19.4~38.5	20.7~39.7	21.4~40.6
3	16.8~35.2	18.1~36.5	18.8~37.7	19.6~39.1	20.9~40.2	21.6~41.3	22.4~42.7
4	18.3~37.1	19.0~38.1	19.8~39.2	20.5~40.6	21.9~41.8	22.6~42.8	23.4~44.2
5	19.2~38.5	20.0~39.9	20.7~41.2	22.1~42.3	22.9~43.4	23.7~44.9	24.4~45.8
6	20.2~40.2	20.9~41.6	22.3~42.7	23.1~44.2	23.9~45.2	24.7~46.5	26.2~47.9
7	21.2~42.0	21.9~43.4	23.4~44.4	24.2~45.7	25.0~47.2	26.5~48.3	27.3~49.5
8	22.2~44.0	23.6~44.9	24.4~46.5	25.2~47.8	26.1~48.8	27.6~50.3	28.5~51.2
9	23.2~45.7	24.7~47.2	25.5~48.0	26.3~49.5	27.9~51.0	28.8~52.0	29.6~53.7
10	25.0~47.5	25.8~48.8	26.6~50.3	28.2~51.2	29.1~52.8	30.0~54.1	30.9~55.4
11	26.1~49.5	26.9~51.0	28.6~52.0	29.4~53.7	30.3~54.6	31.2~56.2	32.1~57.4
12	27.3~51.2	28.9~52.8	29.8~54.4	30.7~55.4	31.6~57.0	32.5~58.0	33.4~59.7
13	28.5~53.7	30.1~54.7	31.1~56.2	32.0~57.6	32.9~58.9	34.7~60.2	35.6~61.6
14	30.5~55.4	31.4~57.1	32.4~58.6	33.3~59.8	35.1~61.3	36.1~62.5	37.0~64.0
15	31.8~58.0	32.8~59.0	33.7~60.7	35.6~61.8	36.5~63.5	37.5~64.7	38.5~66.1
16	33.2~60.1	34.1~61.5	35.1~63.0	37.0~64.2	38.0~66.0	39.0~67.3	40.0~68.5
17	34.6~62.5	35.5~63.6	37.5~65.4	38.5~66.6	39.5~68.4	40.5~69.7	41.5~71.0
18	36.0~64.7	38.0~66.1	39.0~67.8	40.0~69.1	41.1~70.7	42.1~72.2	43.1~73.7
19	37.5~67.3	39.5~69.0	40.6~70.4	41.6~71.7	42.7~73.4	43.7~75.0	44.8~76.4
20	40.1~69.7	41.1~71.5	42.2~73.0	43.3~74.4	44.4~75.9	45.5~77.6	47.8~79.3
21	41.7~72.4	42.8~74.0	43.9~75.8	45.0~77.6	46.1~79.2	48.5~80.6	49.6~81.7
22	43.5~75.7	44.6~77.2	45.7~78.6	46.8~80.0	47.9~81.5	50.4~83.3	51.5~85.3
23	45.2~77.9	46.4~79.5	47.5~81.4	48.7~83.3	51.1~85.3	51.0~86.9	53.5~87.8
24	47.1~81.4	48.3~83.3	49.4~85.1	50.6~86.3	53.2~87.8	54.4~89.5	55.6~91.6

续表

大孔阳 性格数	小孔阳性格数						
	21	22	23	24	25	26	27
25	49.0~84.6	50.2~86.2	51.5~87.4	54.0~89.5	55.3~91.6	56.6~93.9	57.8~94.6
26	51.1~87.3	52.3~89.5	55.0~91.6	54.8~93.9	57.5~94.6	58.8~96.2	60.1~98.6
27	53.2~91.6	55.9~93.9	55.8~94.6	58.5~96.2	59.9~98.6	61.2~101.0	62.6~102.5
28	55.5~94.6	56.8~96.2	59.6~98.6	61.0~101.0	62.4~102.8	63.7~103.9	65.1~106.2
29	57.8~98.6	60.7~101.0	62.1~103.3	63.5~104.7	65.0~106.4	66.4~109.0	67.8~111.1
30	60.3~103.6	63.3~105.0	64.8~106.4	66.2~109.0	67.7~111.4	69.2~112.9	70.7~115.1
31	63.0~107.0	66.1~109.1	67.6~111.8	69.1~113.8	70.7~115.4	72.2~118.0	73.8~120.4
32	65.8~111.8	69.0~114.7	70.6~116.4	72.2~118.3	73.8~121.2	75.4~123.1	77.0~125.1
33	70.5~117.5	72.2~119.2	73.8~121.8	75.5~124.2	77.2~126.0	78.8~128.9	80.6~130.6
34	73.8~121.9	75.5~125.0	77.3~127.3	79.0~129.4	80.8~132.1	84.6~135.0	84.3~137.0
35	75.4~128.2	79.2~130.6	81.0~133.7	82.8~135.3	84.7~138.7	86.5~140.7	88.4~144.0
36	81.2~135.0	83.1~137.0	85.0~140.4	87.0~142.7	88.9~145.4	93.2~148.2	95.2~151.7
37	83.2~142.1	87.4~144.2	89.4~147.9	91.5~150.0	93.6~152.6	95.7~155.9	97.8~159.5
38	90.0~148.9	92.1~152.3	94.3~155.5	96.5~158.7	98.7~161.3	103.5~163.9	105.9~168.0
39	95.0~158.2	94.9~160.7	99.6~163.7	102.0~168.0	104.4~172.4	106.8~174.4	109.3~177.0
40	98.1~168.0	103.2~172.4	105.7~174.4	108.2~177.0	110.8~181.9	113.5~186.9	119.2~190.0
41	107.1~177.0	107.0~181.9	109.7~187.2	115.3~190.1	118.2~194.0	121.1~198.9	124.1~203.5
42	111.5~192.3	114.4~195.0	120.5~200.4	123.6~205.3	126.8~209.3	130.0~213.8	133.4~219.3
43	119.9~206.2	123.1~212.3	126.5~215.7	133.3~221.8	133.5~227.0	140.7~233.7	144.5~238.0
44	129.9~226.4	133.6~229.7	137.5~235.5	141.5~243.1	145.6~251.4	153.7~254.1	158.2~260.5
45	142.3~251.4	146.7~254.1	151.3~260.5	156.1~270.3	161.0~279.8	170.4~283.1	175.8~294.4
46	154.2~281.0	159.5~290.4	169.5~296.2	175.4~306.9	176.9~315.5	188.0~328.6	194.7~340.8
47	175.8~328.6	177.9~340.8	185.0~343.5	197.7~360.0	205.8~378.3	214.2~388.4	217.0~401.8
48	197.7~398.8	207.1~423.2	217.0~439.5	233.9~448.0	245.3~472.5	257.3~498.7	262.4~526.2
49	231.9~555.5	245.9~567.0	260.6~618.9	276.2~650.0	292.7~687.9	310.0~721.5	338.4~763.6

续表

大孔阳 性格数	小孔阳性格数						
	28	29	30	31	32	33	34
0	19.7~38.6	21.0~39.9	21.7~41.2	22.5~42.3	23.9~43.4	24.6~44.4	25.4~45.7
1	21.2~40.6	22.0~41.6	22.7~42.7	23.5~44.0	24.9~44.9	25.7~46.4	26.4~47.2
2	22.2~42.0	23.6~43.4	24.4~44.4	25.1~45.7	25.9~46.6	26.7~48.0	28.2~48.9
3	23.2~43.6	24.6~44.9	25.4~46.2	26.2~47.2	27.0~48.6	27.8~49.5	29.3~51.0
4	24.9~45.6	25.7~46.5	26.5~48.0	27.3~48.8	28.1~50.3	29.7~51.2	30.5~52.8
5	25.9~47.2	26.7~48.5	27.6~49.5	28.4~51.0	29.2~52.0	30.8~53.3	31.7~54.5
6	27.0~48.8	27.9~50.3	28.7~51.2	29.5~52.8	31.1~53.8	32.0~55.4	32.9~56.2
7	28.2~51.0	29.0~52.0	30.6~53.5	31.5~54.5	32.4~55.9	33.2~57.1	34.1~58.3
8	29.3~52.8	30.2~53.8	31.8~55.4	32.7~56.4	33.6~58.0	34.5~59.0	35.4~60.2
9	30.5~54.5	32.2~56.1	33.1~57.1	34.0~58.6	34.9~59.8	35.8~61.2	36.7~62.5
10	31.7~56.8	33.5~58.0	34.4~59.1	35.3~60.7	36.2~61.8	37.1~63.0	39.0~64.5
11	33.9~58.9	34.8~60.1	35.7~61.3	36.6~62.6	38.5~64.2	39.5~65.4	40.4~66.6
12	35.2~60.8	36.1~62.5	37.1~63.6	38.0~64.7	40.0~66.1	40.9~67.7	41.9~69.0
13	36.6~63.0	37.5~64.4	38.5~66.0	39.4~67.3	41.4~68.5	42.4~69.7	43.4~71.0
14	38.0~65.4	39.0~66.6	41.0~67.9	42.0~69.6	43.0~70.9	44.0~72.3	45.0~73.7
15	39.5~67.8	40.5~69.0	41.4~70.4	43.5~72.0	44.6~73.4	45.6~74.7	46.6~75.9
16	41.0~70.3	43.1~71.7	44.1~73.0	45.2~74.4	46.2~75.9	47.3~77.6	48.3~78.9
17	42.6~72.4	44.7~74.0	45.8~75.7	46.8~77.2	47.9~78.6	49.0~79.8	51.3~81.4
18	45.3~75.1	46.4~76.6	47.5~77.9	48.6~79.5	49.7~81.4	50.8~83.0	53.2~84.2
19	47.1~77.8	48.2~79.5	49.3~81.2	50.4~82.7	51.5~83.7	54.0~85.3	53.7~87.3
20	48.9~80.8	50.0~82.3	51.1~83.4	52.3~85.3	53.4~87.3	55.9~88.7	57.1~89.6
21	50.7~83.4	51.9~85.3	53.1~87.2	54.2~88.6	56.8~89.5	58.0~91.6	59.2~93.9
22	52.7~87.0	53.9~88.2	55.1~89.5	56.3~91.6	58.9~93.9	60.2~94.6	61.4~96.1
23	54.7~89.5	56.0~91.6	57.2~93.9	58.4~94.6	61.2~96.1	62.4~98.6	63.7~100.4
24	56.9~93.9	58.1~94.6	60.9~96.1	62.2~98.6	63.5~100.6	64.8~101.5	66.1~103.6



续表

大孔阳 性格数	小孔阳性格数						
	28	29	30	31	32	33	34
25	59.1~96.1	60.4~98.6	61.7~101.0	64.6~101.6	65.9~103.6	67.3~106.2	68.6~107.3
26	61.5~101.0	62.8~102.2	64.1~103.6	67.1~106.2	68.5~108.0	69.9~109.4	71.3~111.8
27	63.9~103.8	65.3~106.2	68.4~108.3	69.8~109.6	71.2~111.8	72.7~113.8	74.1~115.4
28	66.5~108.8	68.0~110.3	71.1~112.2	72.6~114.7	74.1~116.4	75.6~118.3	77.1~120.4
29	69.3~112.8	72.6~114.9	74.1~116.9	75.6~119.2	77.2~121.2	78.7~123.1	80.3~125.0
30	74.1~117.5	75.6~119.2	77.2~121.8	78.8~124.2	80.4~126.0	82.0~128.2	83.6~130.6
31	75.4~121.9	78.9~124.7	80.5~127.1	82.2~128.9	83.9~131.5	85.6~133.7	87.3~135.3
32	78.7~127.6	82.4~130.5	84.1~132.1	85.8~135.0	87.6~137.0	89.4~139.5	91.1~142.1
33	84.4~133.7	86.1~135.3	88.0~138.7	89.8~140.5	91.6~143.0	95.8~145.9	95.3~148.2
34	86.1~139.5	90.2~142.2	92.1~145.0	94.0~147.9	96.0~150.0	97.9~152.6	102.4~155.5
35	92.6~146.2	94.6~148.9	96.6~152.0	98.7~154.7	100.7~157.0	102.8~159.9	107.5~163.6
36	94.9~154.0	99.4~156.6	101.6~159.8	103.7~163.1	105.9~165.2	110.8~168.0	110.4~172.4
37	102.5~162.7	104.8~164.6	107.0~168.0	109.3~172.4	111.7~174.4	114.1~177.0	116.5~181.9
38	105.6~172.4	110.7~174.4	113.1~177.0	115.6~181.9	118.1~185.4	120.7~187.3	123.3~192.2
39	114.7~181.9	117.3~185.5	120.0~187.8	122.7~192.8	125.4~196.8	128.2~200.4	131.1~203.8
40	119.0~193.1	124.8~197.7	127.8~200.4	130.8~205.9	133.8~209.3	136.9~213.8	140.0~219.3
41	130.4~206.2	133.6~212.3	133.4~215.7	140.1~221.8	143.5~226.4	147.0~229.7	150.5~235.5
42	136.8~222.7	140.3~228.5	147.5~234.0	151.3~238.0	155.1~243.1	159.1~251.4	163.1~254.1
43	148.4~243.1	152.4~251.4	160.5~254.1	160.8~260.5	169.3~269.7	173.9~273.3	178.6~281.0
44	162.8~270.3	167.5~274.9	172.4~282.2	177.5~290.4	187.3~296.2	188.0~305.1	198.4~314.5
45	176.8~302.0	187.2~310.9	193.2~318.2	199.4~328.6	205.8~340.8	212.4~343.5	219.2~360.0
46	201.6~343.5	208.9~360.0	216.4~372.2	230.0~382.9	232.2~398.6	246.8~405.3	255.7~423.0
47	232.1~423.0	248.2~439.5	251.7~446.2	262.0~471.2	280.1~495.6	299.1~498.7	295.5~526.2
48	275.1~555.5	296.6~556.7	310.9~586.6	334.6~618.9	341.2~652.5	357.3~687.9	374.1~700.1
49	358.2~804.5	379.1~847.2	401.2~879.2	424.5~941.5	449.3~974.4	475.7~1048.9	549.0~1094.0

续表

大孔阳 性格数	小孔阳性格数						
	35	36	37	38	39	40	41
0	26.2~46.8	27.7~48.0	28.5~49.0	29.2~50.3	30.0~51.2	30.8~52.8	31.6~53.7
1	27.9~48.8	28.7~49.6	29.5~51.0	30.4~52.0	31.2~53.1	32.8~54.5	33.6~55.4
2	29.0~50.3	29.9~51.2	30.7~52.8	31.5~53.7	32.3~54.9	34.0~56.2	34.8~57.1
3	30.2~52.0	31.0~53.2	31.8~54.5	32.6~55.4	34.3~57.0	35.2~58.0	36.0~59.0
4	31.3~53.7	32.2~55.2	33.0~56.2	34.7~57.4	35.6~58.6	36.4~59.8	37.3~60.9
5	32.5~55.7	33.4~57.0	35.1~58.0	36.0~59.3	36.8~60.7	37.7~61.8	38.6~63.0
6	33.7~57.6	35.5~58.9	36.4~60.1	37.2~61.3	38.1~62.5	39.0~63.6	39.9~64.8
7	35.0~59.7	36.8~60.8	37.7~61.9	38.6~63.4	39.5~64.7	40.4~66.0	41.3~67.3
8	36.3~61.6	38.1~63.0	39.0~64.2	39.9~65.4	40.9~66.6	41.8~67.8	43.8~69.1
9	38.6~63.6	39.5~64.7	40.4~66.1	41.3~67.5	42.3~69.0	44.3~70.3	45.3~71.5
10	40.0~66.0	40.9~67.3	41.8~68.5	42.8~69.7	43.7~71.0	45.8~72.3	46.8~73.7
11	41.4~67.8	42.4~69.2	43.3~70.7	45.4~72.2	45.2~73.4	47.4~74.5	48.4~75.9
12	42.9~70.4	43.9~71.7	44.8~73.0	47.0~74.4	48.0~75.8	49.0~77.2	50.0~78.6
13	44.4~72.4	45.4~74.0	46.4~75.7	48.6~76.9	49.6~77.9	50.7~79.5	51.7~81.2
14	46.0~75.0	47.0~76.4	49.3~77.8	50.3~79.5	51.4~80.8	52.4~82.1	53.5~83.3
15	47.7~77.6	48.7~79.2	51.0~80.6	52.1~81.5	53.1~83.3	54.2~85.1	55.3~86.2
16	49.4~80.0	50.4~81.4	52.8~83.3	53.9~84.8	55.0~85.9	56.1~87.3	57.2~89.5
17	51.1~83.3	53.5~84.6	54.6~85.4	55.8~87.3	56.9~89.4	58.0~90.3	59.1~91.6
18	53.0~85.3	55.4~87.3	56.6~89.2	57.7~90.0	58.9~91.6	60.0~93.9	61.2~94.6
19	56.3~89.1	57.4~89.8	58.6~91.6	59.8~93.9	60.9~94.6	62.1~96.1	64.9~98.6
20	58.3~91.6	59.5~93.9	60.7~94.6	61.9~96.1	63.1~98.6	64.3~99.5	65.5~101.0
21	60.4~94.6	61.7~96.1	62.9~98.6	64.1~99.8	65.4~101.0	68.2~103.6	69.5~104.7
22	62.7~98.6	63.9~100.1	65.2~101.0	66.4~103.6	69.4~105.0	70.7~106.4	72.0~108.8
23	65.0~101.2	66.3~103.6	67.6~105.6	68.9~106.4	70.2~109.0	73.3~100.3	74.6~112.2
24	67.4~105.7	68.8~107.0	70.1~109.0	71.4~111.1	74.6~112.2	76.0~114.7	77.4~116.4

续表

大孔阳 性格数	小孔阳性格数						
	35	36	37	38	39	40	41
25	70.0~109.1	71.4~111.4	72.8~112.8	74.2~114.9	77.4~116.4	78.9~118.3	80.3~120.4
26	72.7~113.5	74.1~115.1	75.6~117.5	78.9~119.2	80.4~121.2	81.9~123.1	83.4~125.0
27	75.6~118.0	77.1~119.8	80.5~121.8	82.0~123.7	83.5~125.9	85.1~127.6	86.6~129.4
28	78.6~121.9	80.1~124.2	83.7~126.0	85.3~128.5	86.9~130.6	88.5~132.4	90.1~135.0
29	81.8~127.3	83.4~129.1	87.1~131.7	88.8~133.7	90.4~135.3	92.1~138.1	93.8~140.4
30	87.4~132.1	89.1~135.0	88.6~137.0	92.5~138.7	94.3~141.6	96.0~144.0	97.8~145.9
31	89.0~138.7	93.0~140.4	94.7~142.7	96.5~145.4	98.4~147.9	100.2~150.0	102.1~152.3
32	95.2~144.2	94.8~146.2	99.0~148.9	100.9~151.7	102.8~154.0	104.7~156.2	106.7~159.5
33	99.6~150.9	101.6~153.0	103.6~155.9	105.6~158.7	107.6~160.7	109.7~163.7	111.7~167.2
34	101.9~158.2	106.5~160.1	108.6~163.7	110.7~166.5	112.9~168.0	115.0~172.4	117.2~174.4
35	109.7~165.7	111.9~168.0	114.1~172.4	116.4~174.4	118.6~177.0	121.0~181.4	123.3~182.9
36	115.4~174.4	117.8~177.0	120.2~181.9	122.6~183.1	125.1~187.3	127.5~190.0	130.1~193.1
37	118.9~184.2	124.4~187.3	127.0~191.9	129.6~194.0	132.2~198.0	134.9~200.4	137.6~205.3
38	126.0~194.9	131.8~198.9	134.6~203.5	137.5~206.2	140.4~209.3	143.3~213.8	146.3~218.1
39	134.0~208.0	140.3~212.3	143.4~215.7	146.5~219.3	149.7~223.6	152.9~228.5	156.2~233.7
40	143.2~222.4	146.5~227.0	153.5~230.9	157.0~235.5	160.6~242.2	164.2~244.1	167.8~251.4
41	154.1~240.7	161.7~243.4	165.5~251.4	169.5~254.1	173.5~260.5	177.6~266.0	186.1~270.3
42	167.2~260.5	175.7~268.2	175.7~270.9	184.6~279.8	189.2~283.1	193.9~290.4	198.7~296.2
43	187.9~287.7	188.3~294.4	198.2~302.0	198.6~306.9	208.9~315.5	214.5~322.8	220.2~328.6
44	204.1~320.9	210.1~328.6	221.5~340.8	222.5~343.5	234.6~359.4	235.5~364.3	248.3~378.5
45	232.0~365.5	233.5~378.3	247.0~388.2	254.9~401.7	263.0~413.9	278.0~423.0	279.9~439.5
46	264.8~439.5	281.2~446.2	284.0~471.2	294.0~476.1	312.1~498.1	315.0~515.2	334.2~526.2
47	315.6~555.5	336.9~556.7	341.4~586.6	355.0~618.9	378.6~623.8	393.4~652.5	398.4~687.9
48	402.3~724.5	432.2~763.6	440.6~804.5	448.7~847.5	482.4~886.5	518.3~892.6	542.6~941.5
49	550.1~1174.6	583.8~1245.4	620.5~1282.0	660.6~1410.2	705.0~1509.0	754.6~1614.0	810.8~1750.7

续表

大孔阳 性格数	小孔阳性格数						
	42	43	44	45	46	47	48
0	33.3~54.7	34.1~56.1	34.9~57.1	35.7~58.1	37.5~59.5	38.3~60.7	39.2~61.6
1	34.5~56.6	35.3~58.0	36.1~58.9	37.0~60.1	38.7~61.3	39.6~62.5	40.5~63.6
2	35.7~58.6	36.5~59.7	37.4~60.8	38.2~61.8	40.0~63.0	40.9~64.2	41.8~65.4
3	36.9~60.2	37.8~61.5	38.6~62.6	40.5~63.8	41.4~65.0	42.2~66.1	43.1~67.3
4	38.2~62.5	40.0~63.5	40.9~64.7	41.8~66.0	42.7~67.3	43.6~68.4	44.5~69.4
5	39.5~64.2	41.4~65.4	42.3~66.6	43.2~67.8	44.1~69.0	45.0~70.4	45.9~71.7
6	40.8~66.1	42.8~67.5	43.7~68.7	44.6~69.8	45.5~71.0	46.5~72.4	47.4~73.7
7	43.3~68.5	44.2~69.7	45.1~70.8	46.1~72.2	47.0~73.4	48.0~74.4	48.9~75.9
8	44.7~70.4	45.7~71.7	46.6~73.0	47.6~74.3	48.5~75.7	49.5~77.0	50.5~77.9
9	46.2~72.5	47.2~74.0	48.2~75.4	49.1~76.4	51.4~77.8	51.1~79.3	53.4~80.6
10	47.8~75.0	48.8~76.3	49.8~77.6	50.7~79.2	53.0~80.0	54.0~81.4	55.1~83.2
11	49.4~77.6	50.4~78.6	51.4~80.0	52.4~81.4	54.7~83.0	55.8~83.7	56.8~85.3
12	51.0~79.5	52.1~81.4	53.1~82.7	54.1~83.7	56.5~85.3	57.6~86.9	58.6~87.7
13	52.8~82.3	53.8~83.4	54.9~85.3	55.9~86.7	58.4~87.4	59.4~89.5	60.5~90.8
14	54.5~85.3	55.6~86.3	56.7~87.4	59.2~89.5	60.3~90.7	61.4~91.6	62.5~93.8
15	56.4~87.3	58.9~89.5	60.0~90.5	61.1~91.6	62.3~93.8	63.4~94.6	64.5~96.1
16	58.3~90.3	60.9~91.6	62.0~93.8	63.2~94.6	64.3~96.1	65.5~98.4	66.6~98.9
17	60.3~93.9	62.9~94.6	64.1~96.1	65.3~98.6	66.5~99.0	67.7~101.0	68.8~102.5
18	63.9~96.1	65.1~98.6	66.3~99.2	67.5~101.0	68.7~102.8	69.9~103.8	71.1~106.2
19	66.1~99.5	67.3~101.0	68.6~103.3	69.8~103.9	71.0~106.2	72.3~107.6	73.5~109.1
20	68.4~103.3	69.7~104.4	70.9~106.2	72.2~108.0	73.5~109.1	74.8~111.4	76.1~112.8
21	70.8~106.2	72.1~108.3	73.4~109.4	74.7~111.8	76.0~112.9	79.2~114.9	78.7~116.4
22	73.4~110.0	74.7~111.8	76.0~113.8	77.4~115.1	78.7~117.3	82.0~118.7	83.4~120.4
23	76.0~114.0	77.4~115.4	78.8~117.5	80.2~119.2	81.6~121.2	83.0~123.1	86.4~124.7
24	78.8~118.0	80.2~120.1	81.7~121.8	83.1~123.4	86.6~125.1	86.0~127.3	89.6~128.9

续表

大孔阳 性格数	小孔阳性格数						
	42	43	44	45	46	47	48
25	81.8~121.9	83.2~124.2	84.7~126.0	86.2~128.0	89.8~130.2	91.3~132.1	92.9~133.7
26	84.9~127.1	86.4~128.9	90.1~130.6	89.5~132.4	93.2~135.0	94.8~137.0	96.4~138.7
27	88.2~132.0	89.8~133.7	91.4~135.3	95.2~137.8	94.6~140.1	98.5~142.1	100.2~144.2
28	91.7~137.0	95.6~138.7	95.0~140.7	99.0~143.0	98.4~145.4	102.5~147.9	104.2~149.8
29	95.5~142.2	99.6~144.2	99.0~146.3	103.1~148.9	104.9~151.7	106.7~153.5	108.6~155.9
30	99.6~148.2	101.4~150.3	105.7~152.6	107.5~155.5	109.4~157.6	111.3~159.8	113.2~162.7
31	103.9~154.7	105.8~106.6	110.3~159.8	112.3~162.4	114.3~163.9	116.3~167.8	118.3~168.8
32	111.3~161.3	113.3~163.7	115.4~167.2	117.4~168.3	119.5~172.4	121.7~174.4	123.8~177.0
33	113.8~168.3	118.7~172.4	120.9~174.4	123.1~177.0	125.3~180.8	127.5~182.1	129.8~186.4
34	119.4~177.0	124.6~180.8	126.9~182.1	129.3~187.0	131.6~188.5	134.0~192.5	136.5~194.9
35	125.7~187.3	128.1~190.0	130.5~192.8	136.1~195.8	138.7~198.9	141.3~202.9	143.9~205.9
36	135.8~197.7	138.4~200.4	141.1~203.5	143.8~206.2	146.6~210.2	149.4~213.8	152.2~217.5
37	140.4~209.3	146.7~212.3	149.6~215.7	152.5~219.3	155.5~222.7	158.5~227.0	161.6~229.7
38	149.3~221.8	152.3~226.4	159.2~229.7	162.4~234.0	165.7~238.0	169.1~243.1	172.4~245.9
39	159.5~236.1	166.9~242.5	170.4~245.0	174.0~251.4	177.6~254.1	181.3~260.5	185.1~264.5
40	175.7~254.1	175.4~260.5	183.6~264.5	187.6~270.3	191.7~274.9	195.9~281.0	200.2~285.6
41	186.0~277.9	194.9~282.2	194.7~290.1	204.0~294.4	208.7~302.0	213.5~306.9	218.4~314.5
42	208.6~303.3	208.7~310.9	219.0~315.5	219.1~325.8	229.8~328.6	235.4~340.8	241.2~343.5
43	226.0~340.8	232.0~343.5	238.1~356.3	244.4~360.0	256.8~372.4	263.5~378.5	270.3~388.2
44	255.4~382.7	262.7~398.6	270.2~401.7	277.8~418.7	285.7~423.0	293.7~439.5	301.8~446.2
45	295.7~446.2	297.6~467.0	314.4~472.5	316.2~495.6	334.0~498.7	344.1~524.9	354.5~526.2
46	337.2~555.5	357.6~556.7	369.8~586.6	382.3~600.6	404.9~618.9	408.4~648.2	422.0~652.5
47	424.6~700.1	441.1~724.5	458.1~763.6	487.8~786.4	494.2~804.8	513.2~847.5	546.6~886.5
48	553.4~993.9	579.7~1048.9	623.9~1108.7	654.5~1153.8	705.0~1174.6	703.6~1245.4	740.6~1323.5
49	850.4~1896.6	924.9~2101.6	1016.2~2353.1	1167.7~2709.5	1222.0~3300.2	1630.4~4716.1	1439.5~infinite