

---

(MRA)

2003. 6.

---

# (The Global MRA)

Mutual Recognition  
of National Measurement Standards and  
of Calibration and Measurement Certificates  
issued by National Metrology Institute(NMI)

**MRA** (*M*utual *R*ecognition *A*greement)

?

---

- 가

- 가 /

- 가

- WTO( ) TBT( )

- / (APLAC, ILAC)

# MRA

---

- 가 가 (NMS)

- NMI /

- 1 가

- 2

- 가 NMI가

- 가 , (RMO)

- CIPM 가 ( , IAEA)

# MRA

---

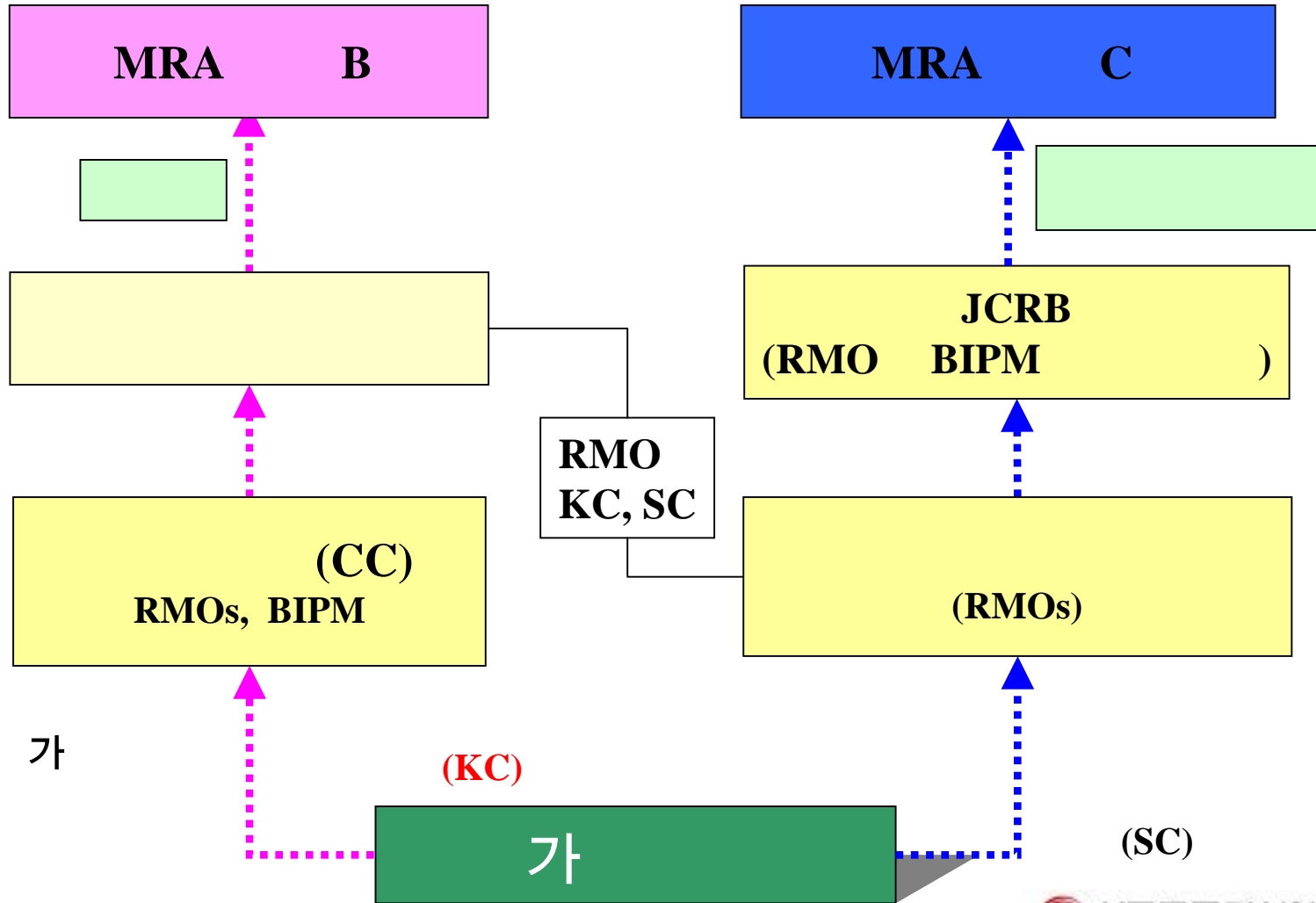
- (key comparison; **KC**) : *Appendix B*

- NMI (**CMC**) 가: *Appendix C*

Peer review

NMI 가

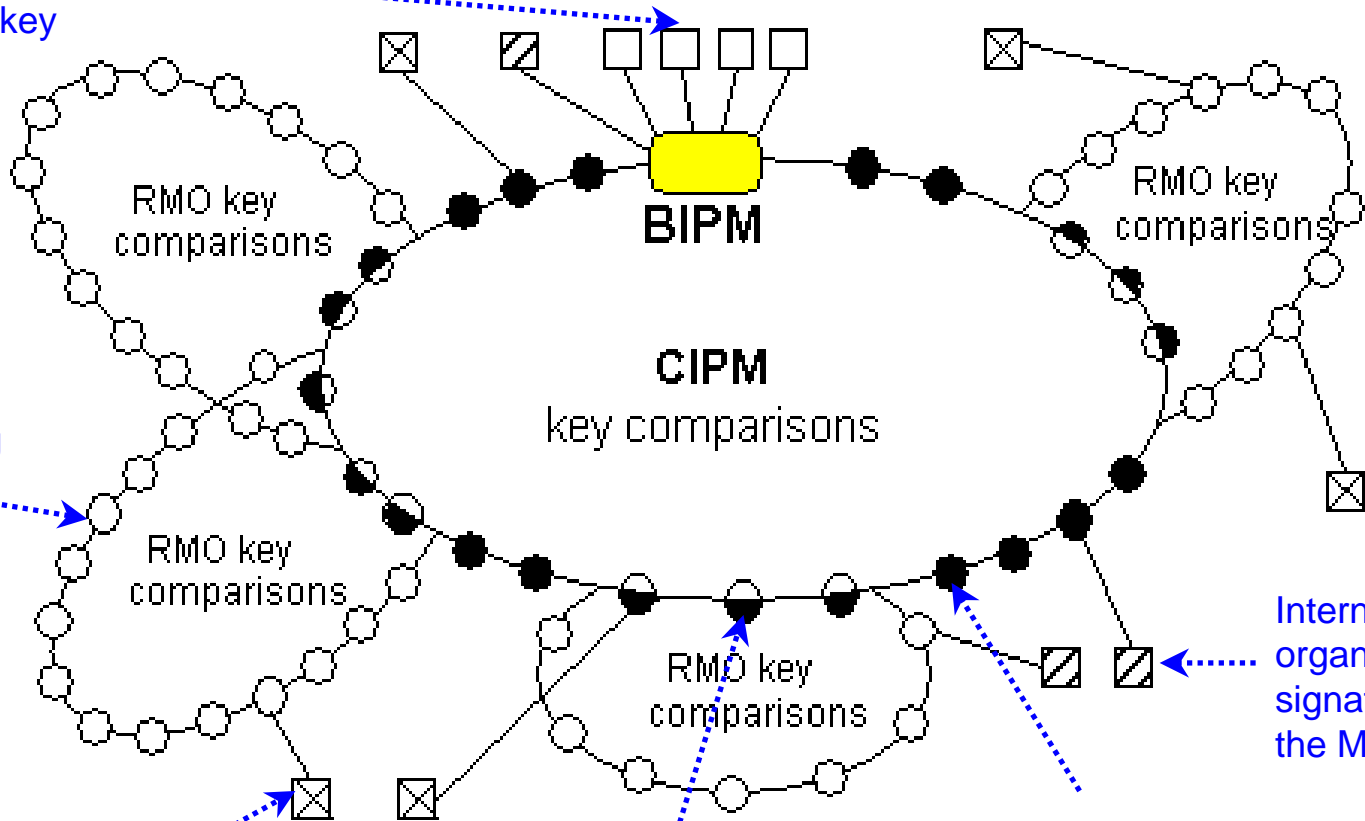
# MRA



NMI participating in ongoing BIPM key comparisons

NMI participating in RMO key comparisons

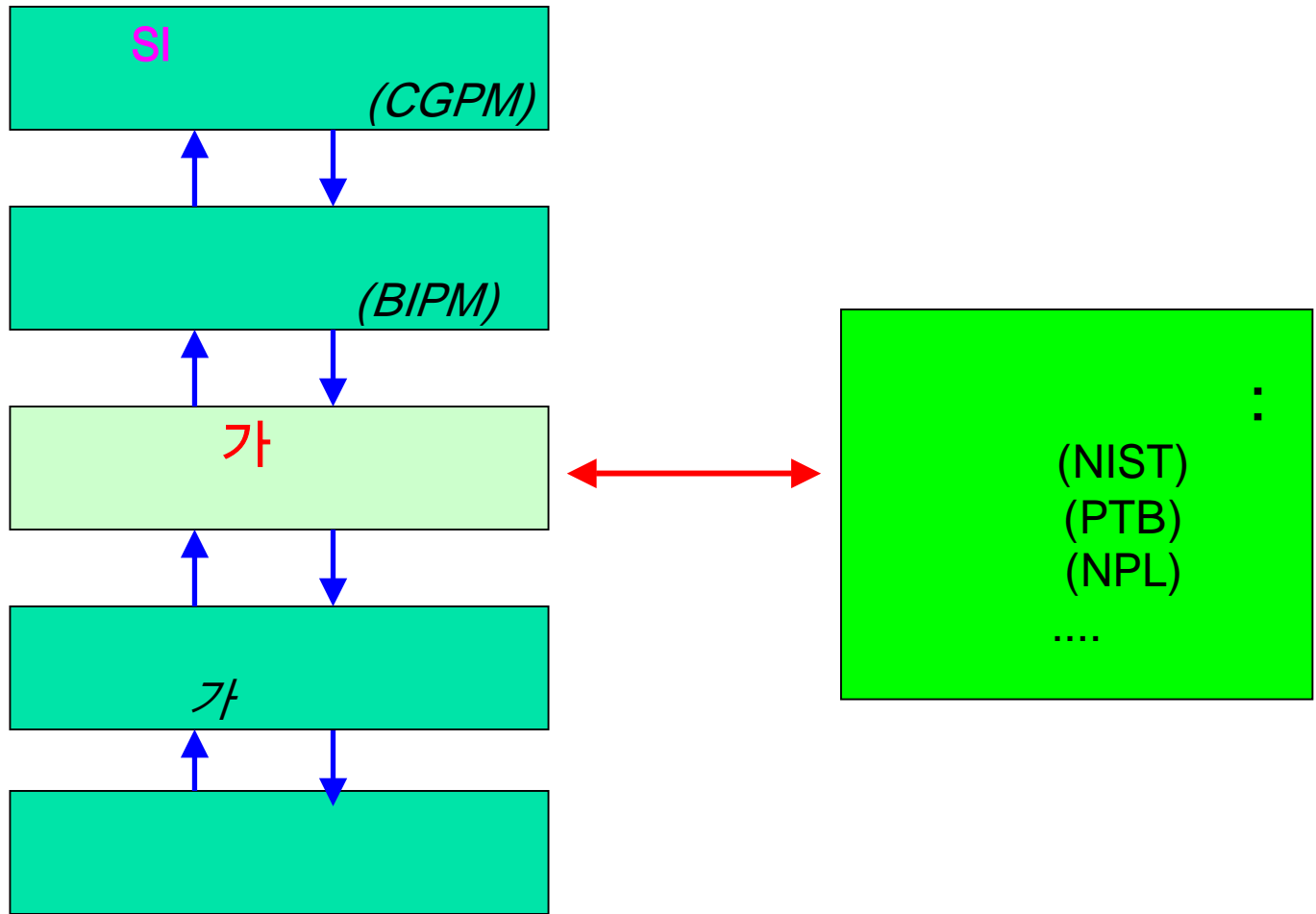
NMI participating in a bilateral key comparison



International organization signatory to the MRA

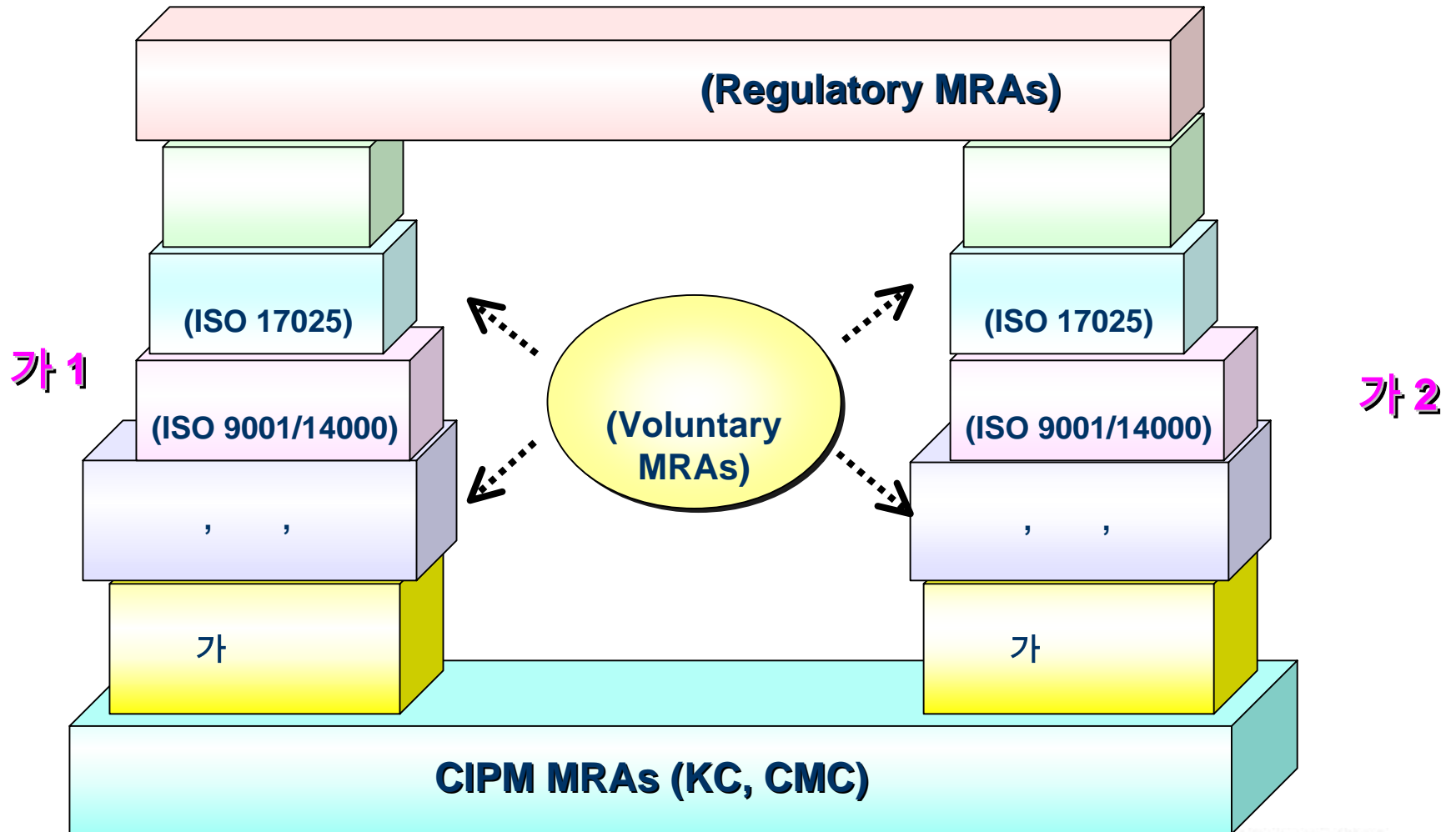
NMI participating in CIPM key comparisons and in regional metrology organization (RMO) key comparisons

National metrology institute (NMI) participating in CIPM key comparisons





# MRA



---

# ISO/IEC 17025

2003. 6.

International  
Standard

---

*ISO/IEC 17025*

*General Requirements  
for the competence  
of testing and calibration laboratories*  
( )

---

**ISO** (*International Organization for Standardization*)

**IEC** (*International Electrotechnical Commission*)

# ISO/IEC 17025

---

1.

2.

3.

4.                    (*Management requirements*) - 14

**5.                    (*Technical requirements*) - 10**

A (     ) ISO/IEC 17025    ISO 9001:1994    ISO 9002:1994

B (     )

---

1.

2.

3.

**5.** (10 )

5.1

5.2

5.3

5.4

5.5

5.6

5.7

5.8

5.9

5.10

# 1. (scope)

---

1.1

/

---

1.1

,

/

▪

1.2

/

가

▪

## 2.

### (Normative references)

---

- **ISO 9001 : 1994**,  
- , , , 가
- **ISO 9002 : 1994**,  
- , 가  
→ **ISO 9001 : 2000** .
- **ISO/IEC Guide 2** :
- **VIM** (International Vocabulary of Basic and General Term in Metrology) :  
, BIPM, IEC, IFCC, ISO, IUPAC, OIML



# 3.

## *(Terms and Definitions)*

---

**ISO/IEC Guide 2 VIM**

가

가

- 
- - 
  -

**ISO 9002 : 1994**

## 5.1

### (General)

---

#### 5.1.1

/

-

(5.2)

-

(5.3)

-

(5.4)

-

(5.5)

-

(5.6)

-

(5.7)

-

(5.8)

#### 5.1.2

( )

( )

.

## 5.2 (Personnel)

---

5.2.1

, /  
가 ,  
▪

5.2.2

,  
▪

5.2.3 ...

5.2.4. ...

▪ \_\_\_\_\_, \_\_\_\_\_,  
\_\_\_\_\_ , \_\_\_\_\_, ...

# 5.3

---

## (Accommodation and environment conditions)

### 5.3.1

, , /

/

• •••

▪

### 5.3.2 ...

\_\_\_\_\_, ,

▪

, , , ,

\_\_\_\_\_, , \_\_\_\_\_,

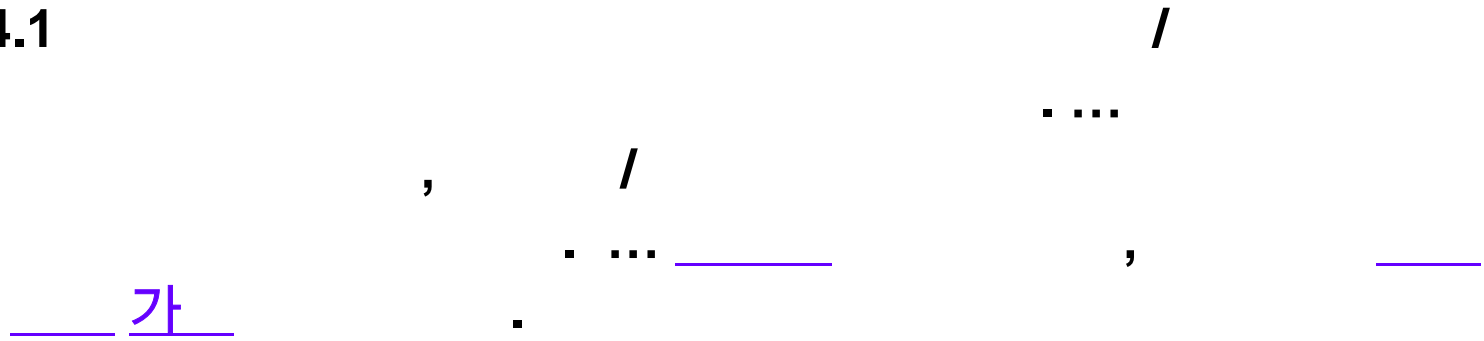
▪

# 5.4

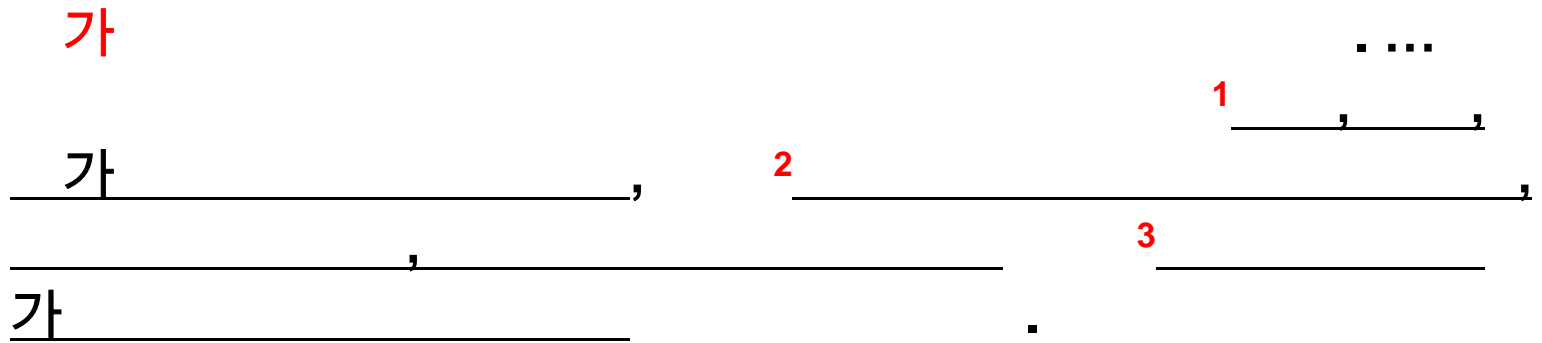
(1)

## (Test and calibration methods and method validation)

### 5.4.1



### 5.4.2



# 5.4

(2)

## (Test and calibration methods and method validation)

5.4.3, 5.4.4 ...

—

...

.

.

\_\_\_\_\_

/

\_\_\_\_\_

/

.

- (a)
- (b)
- (c)
- (d)
- (e)
- (f)
- (g)

# 5.4

(3)

## (Test and calibration methods and method validation)

(h)

- , , , ,
- 
- 
- 
- 

(i) / /

(j) ,

(k)

# 5.4

(4)

## (Test and calibration methods and method validation)

### 5.4.5

#### 5.4.5.1

#### 5.4.5.2

2.

-

-

-

-

-

\_\_\_\_\_

:

;

;

;

가;



# 5.4

(5)

## (Test and calibration methods and method validation)

### 5.4.6

#### 5.4.6.1.

#### 5.4.6.3 ...

1.

...

2.

/

# 5.4

(6)

## (Test and calibration methods and method validation)

### 5.4.7

#### 5.4.7.1

.

#### 5.4.7.2 a)

.

...

)

( :

,

,

.

## 5.5 (Equipment)

---

5.5.3 \_\_\_\_\_ . . .

5.5.5 ... \_\_\_\_\_ ...

- a) \_\_\_\_\_ ;
- b) \_\_\_\_\_ ;
- c) 가 \_\_\_\_\_ (5.5.2 ) ;
- d) \_\_\_\_\_ ;
- e) 가 \_\_\_\_\_ ;
- f) ... \_\_\_\_\_ , ...
- g) \_\_\_\_\_ ,
- h) \_\_\_\_\_ ,

5.5.10 \_\_\_\_\_ , \_\_\_\_\_ .

## 5.6

### (Measurement traceability)

---

#### 5.6.1

( : ) ,  
,  
/  
... \_\_\_\_\_ ...

#### 5.6.3.3

, 1 ,

.

## 5.7 *(Sampling)*

---

5.7.1

(substance),

• ••

---

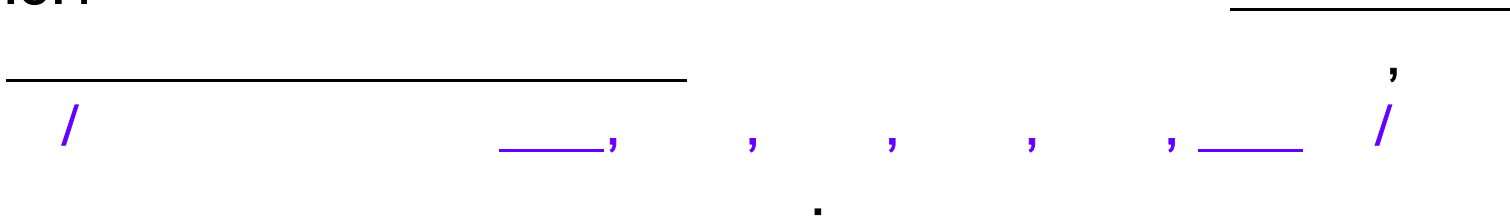
•

•

# 5.8

## (Handling of test and calibration items)

### 5.8.1



### 5.8.2



# 5.9

(Assuring the quality of test and calibration results)

/

...

,

,

.

a)

/ 2

;

b)

가;

c)

;

d)

;

e)

# 5.10

(Reporting the results)

(1)

5.10.1

,  
,  
,  
,  
,  
.  
...

5.10.2

-

5.10.3

5.10.3.1 5.10.2

가

.



## 5.10

(Reporting the results)

(2)

5.10.4

5.10.4.1 5.10.2

가

.

5.10.4.4

( )

가

.

5.10.6

가

,

.

.