



Gravimetric Method of Analysis



1.

2.

3.

4.

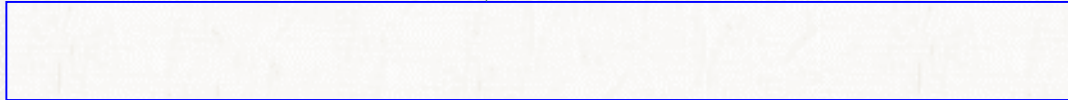
5.

6.

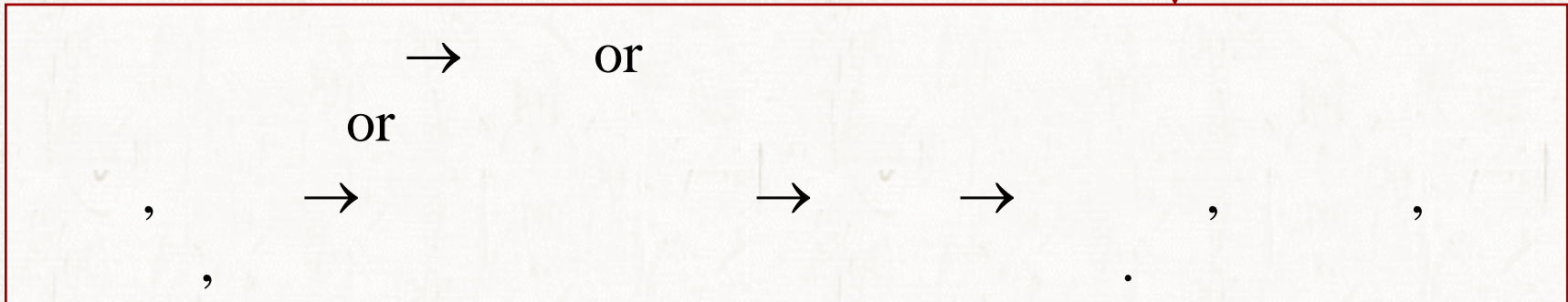
7. TGA(Thermogravimetric Analysis)

(1)

(Gravimetric Method of Analysis)



(Mass Spectroscopy, MS)



(2)

(Precipitation Method)

가

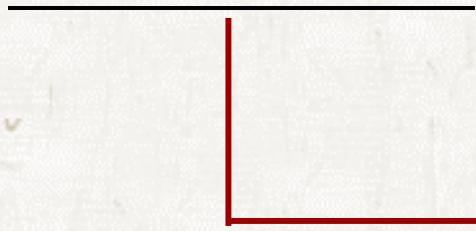
(Volatilization Method)

→

or

(1)

:



1.

2.

가

3.

4.

가

⇒

:

가

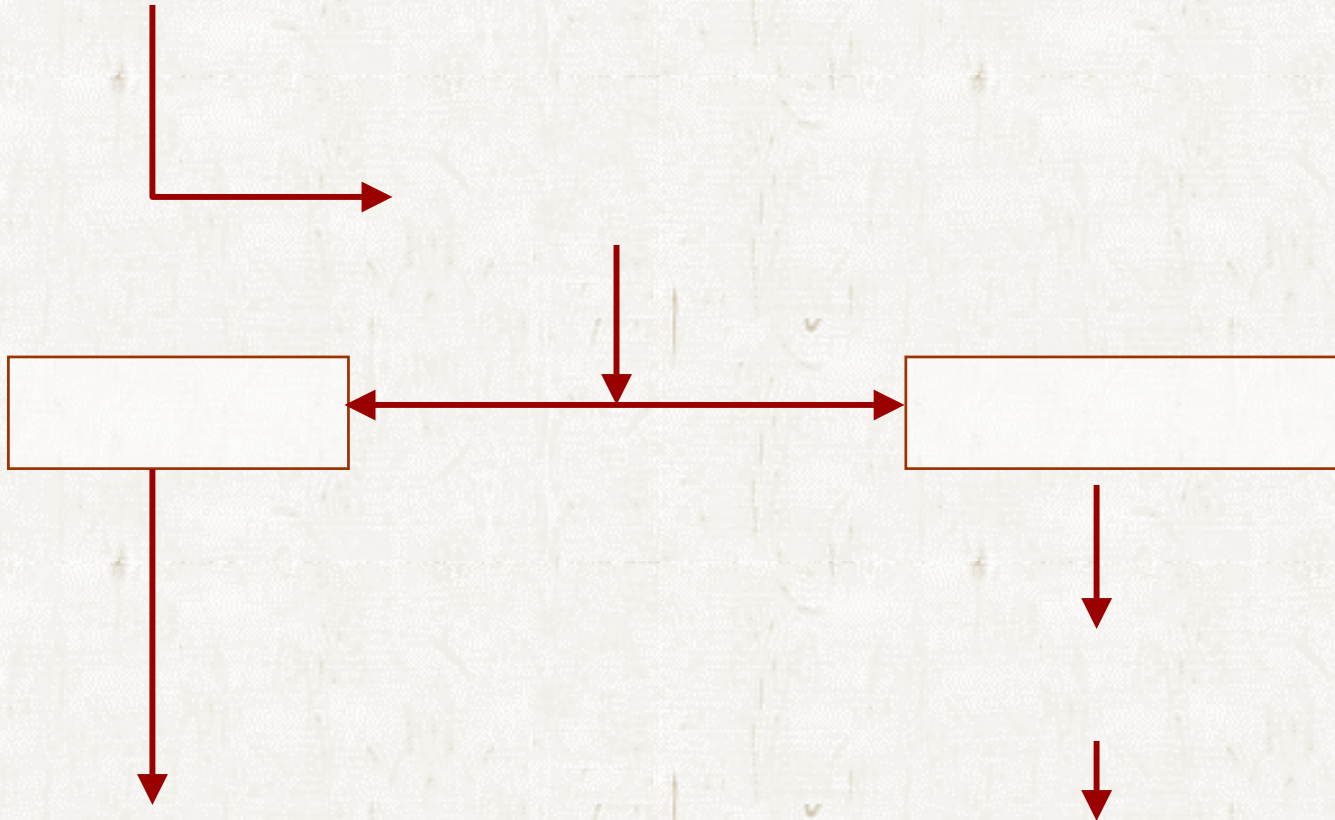
.

(2) -

:

,

가



(3) -

(Colloid Suspension)

- 10^{-6} - 10^{-4} mm

- 가

- 가

-

(Crystalline Precipitation)

- 10^{-1} -10 mm

-

- 가

- 가

(Relative Supersaturation)

$$= \frac{Q - S}{S}$$

Q :

S :

(4) -

S가 Q

가



(Coagulation) or

(Agglomeration)

$$= \frac{Q - S}{S}$$

Q:

S:

(5) -

(Coagulation)

- 가 가 .
- 가 . ()
- 가 .
- ()

(peptization)

- 가 가
- → 가
- → 가 ,
- →
- :

(6) -

가 가

-

-

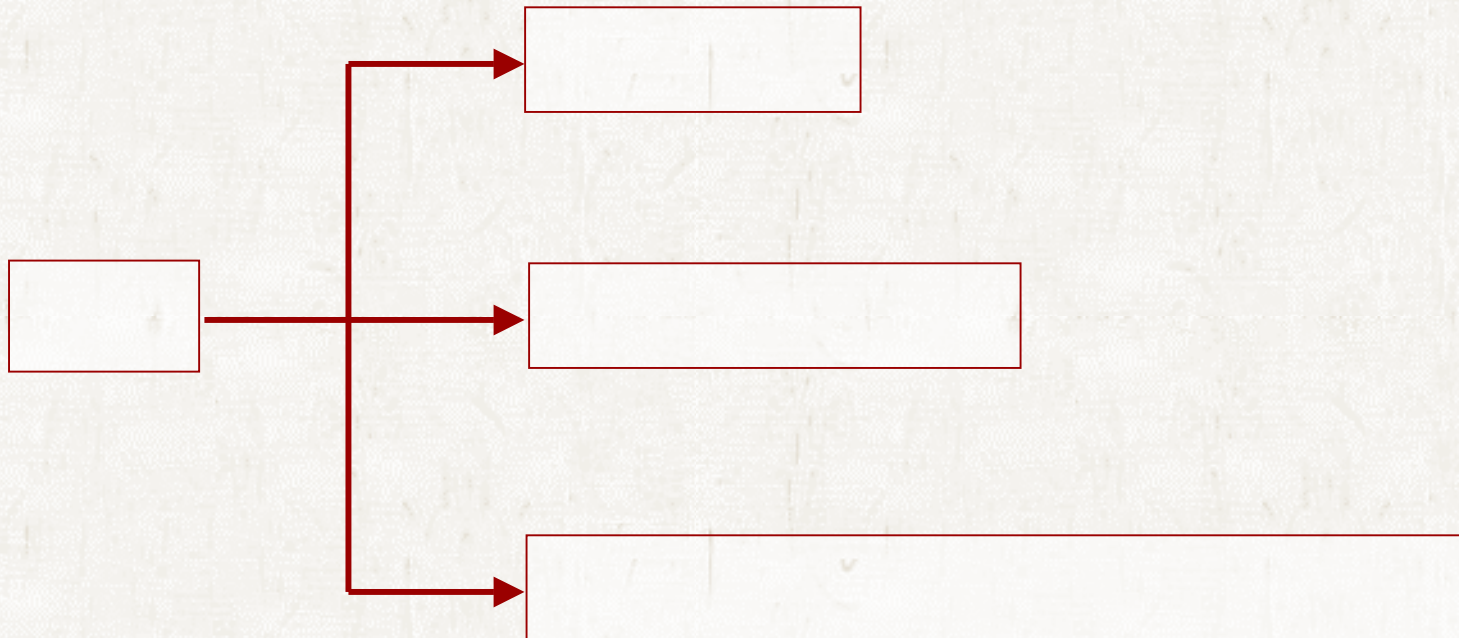
(

)

.

(7) - (Coprecipitation)

•



(8) - (Coprecipitation)



- 가 → →
- 가 .

(mixed-crystal formation)

- 가
-

(9) - (Coprecipitation)

(Occlusion)

-

(Mechanical Entrapment)

-

가

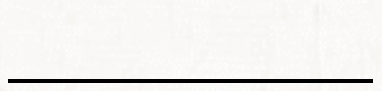
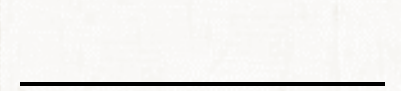


-

.



- 가



가 :
→ 가



(1)



가



(2)

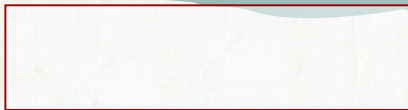


-
-
→ or (, ,)
→
→



-
가 ,

(3)



-

→

→

가

→

가

→

가

,

(digestion)

→

pH,

(4)



-

-

-



가

.

.

.

(5)

가

-

or 가

가
가

.

-

0.1-0.01mg

.

-

,

.

200ml



(가 26.6002g)
CaO(=56.08g/mol)
Ca (mol)

가
가
26.7134g
.

CaO

$$\text{wt CaO} = 26.7134\text{g} - 26.6002\text{g} = 0.1132\text{g}$$

Ca CaO

$$\begin{aligned} \text{CaO} &= 0.1132\text{g CaO} \times \frac{1\text{mol CaO}}{56.08\text{g CaO}} \times \frac{1\text{mol Ca}}{\text{mol CaO}} \\ &= 2.0185 \times 10^{-3} \text{ mol Ca} \end{aligned}$$

가

(furnace)



5°C — 1200°C

(furnace)



(**A&D**)
HA - M Series
0.01mg / 0.1 mg
42g /210g

(Thermogravimetry, TG)

(thermobalance)

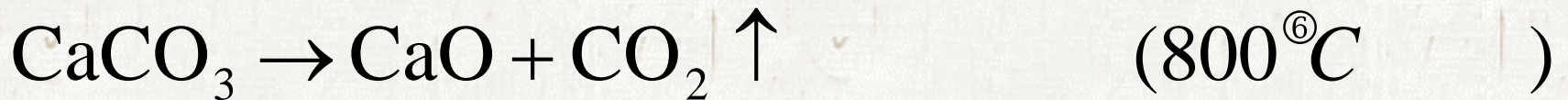
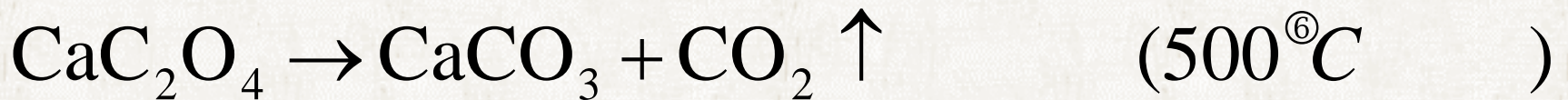
가

TG (thermogram)

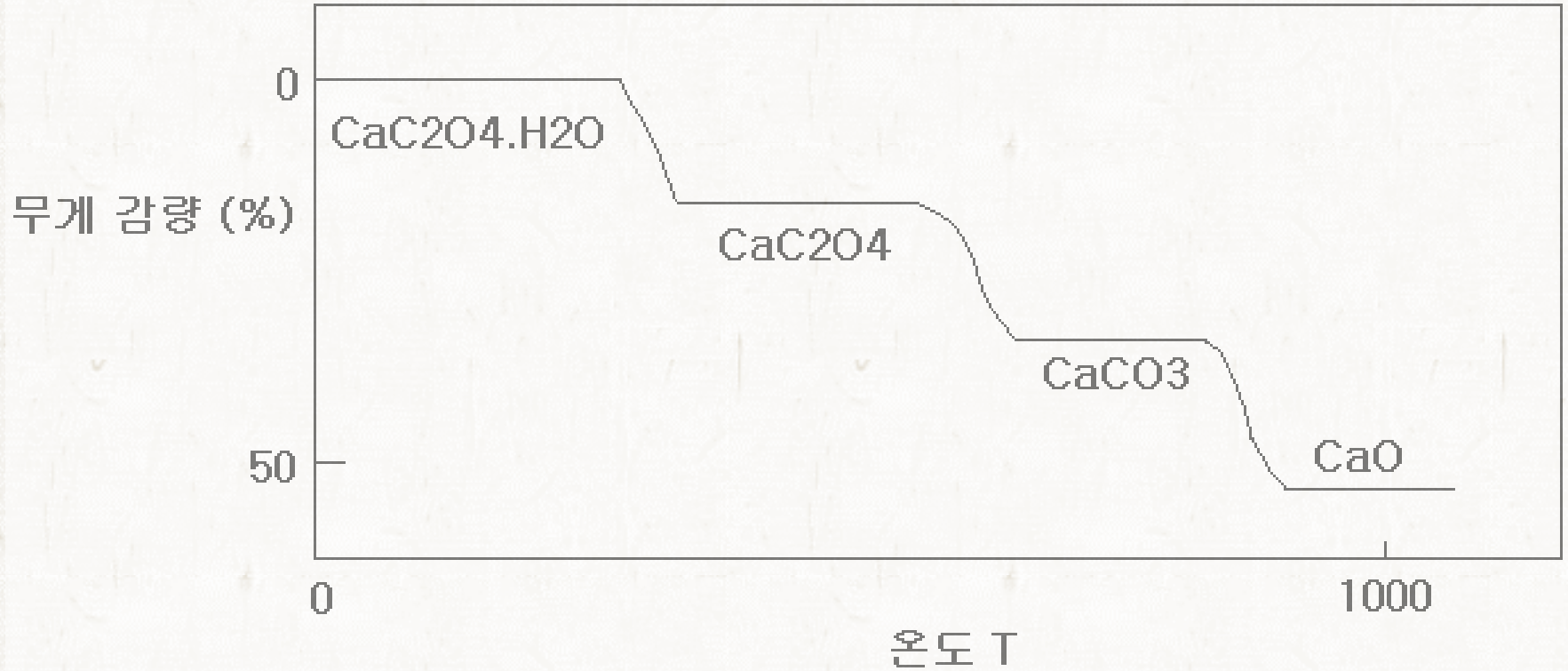
Ex>

1

($\text{CaC}_2\text{O}_4 \cdot \text{H}_2\text{O}$)



(Thermogravimetry, TG)



- 가

•

(Thermogravimetry, TG)

-

TG

,

TG GC or

TGA (Thermogravimetric analysis)

Theory of Operation

- **Thermogravimetric analysis(TGA)**

가

.

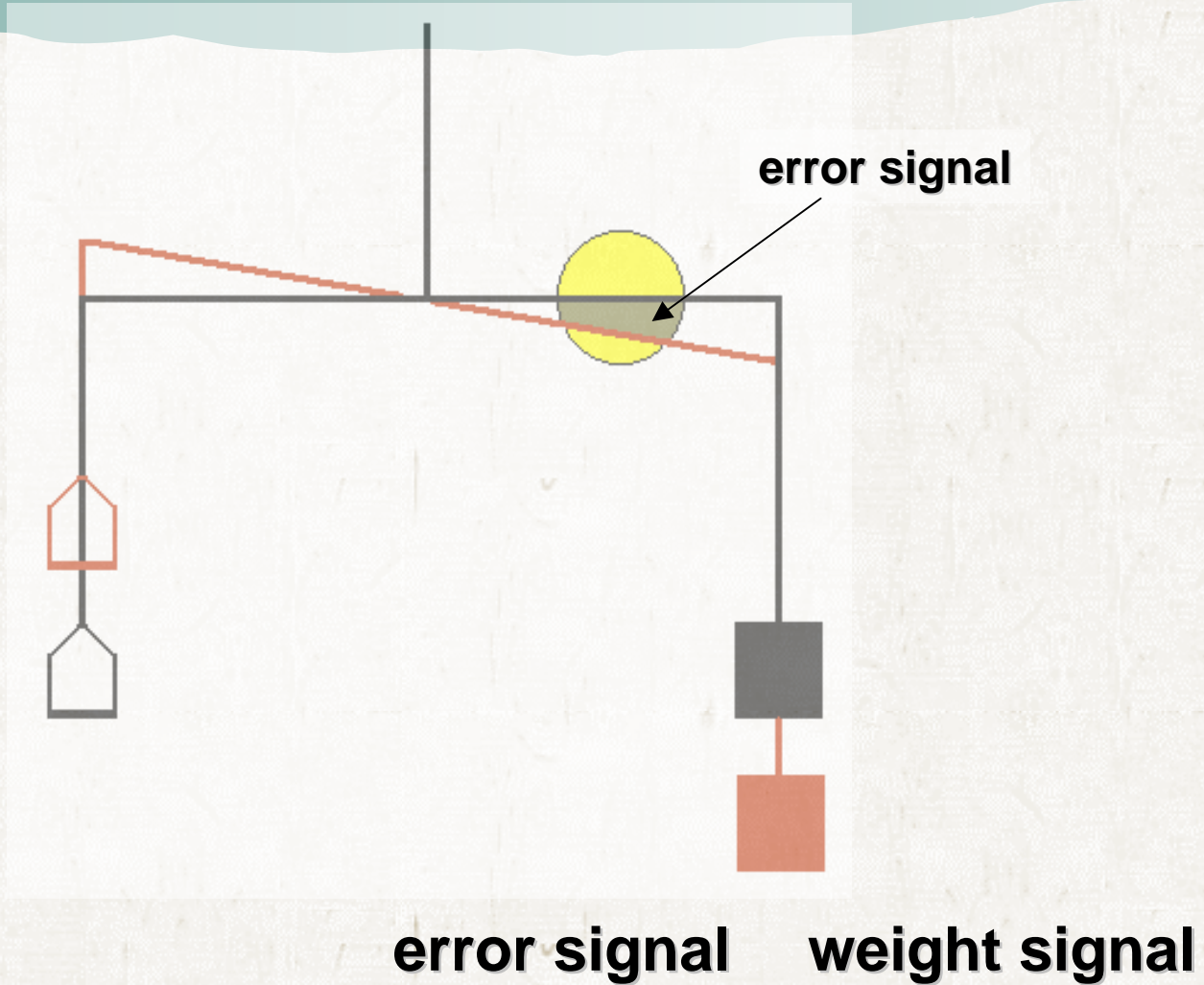
(Decomposition),

(Dehydration)

(Oxidation)

.

TGA (Thermogravimetric analysis)



TGA (Thermogravimetric analysis)

