

# OPIUM



Drug Name : Opium

Plant Name : *Papaver somniferum*

Family : Papaveraceae



## IDENTIFICATION REACTION-I

Opium + 5 ml distilled water

Filter the extract through cotton

The filtrate +  $\text{FeCl}_3$  TS

**DARK RED COLOUR**

Meconic acid

+ diluted HCl or mercury chloride

**COLOR DOES NOT DISAPPEAR**

The difference from acetate and formate

The difference from thiocyanates

## DEFINITION REACTION-II

Opium +  
CHCl<sub>3</sub> R (5 ml)+  
Dil. NH<sub>3</sub> (2 ml)

Shake for 10  
minutes

Filter into capsule through cotton

Evaporated to dryness in a  
water bath

The outer  
ring is a  
gray-white  
colored,  
crystalline  
residue.

Residue+  
1 drop formaldehit TS +  
5 drops H<sub>2</sub>SO<sub>4</sub> R

**STRONG RED  
COLOR**

The  
presence of  
**MORPHINE**

# QUANTIFICATION

Opium (1 g)

+ 10 ml distilled water  
(pestle with mortar)

Homogeneous mixture  
+ 1 g  $\text{Ca}(\text{OH})_2$  + 10 ml water

Mixed 10 min.

To precipitate  
meconic acid as  
Ca-meconate

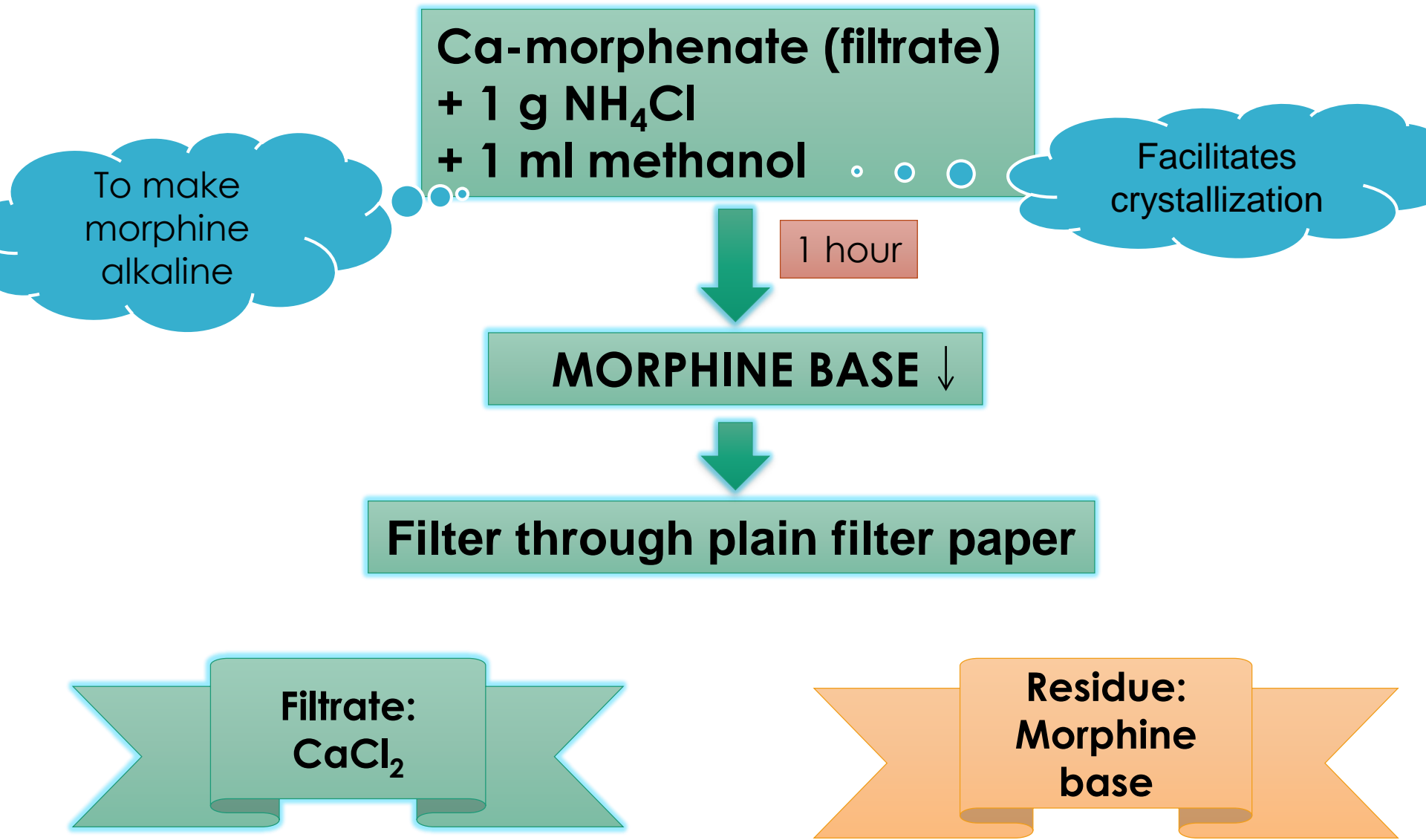
Ca-meconate is precipitated

In a tared beaker, the mixture is completed to 54 g  
with water.

The filtrate :  
Ca-morfinat

Residue:  
Ca-meconate

Filter through pleated filter paper.



To make morphine alkaline

Facilitates crystallization

1 hour

**MORPHINE BASE** ↓

**Filter through plain filter paper**

**Filtrate:**  
**CaCl<sub>2</sub>**

**Residue:**  
**Morphine base**

The morphine base is washed with distilled water



Dissolve in boiling methanol  
+ 10 ml 0,1 N  $\text{H}_2\text{SO}_4$

Heated in water bath for 5 min, cooled

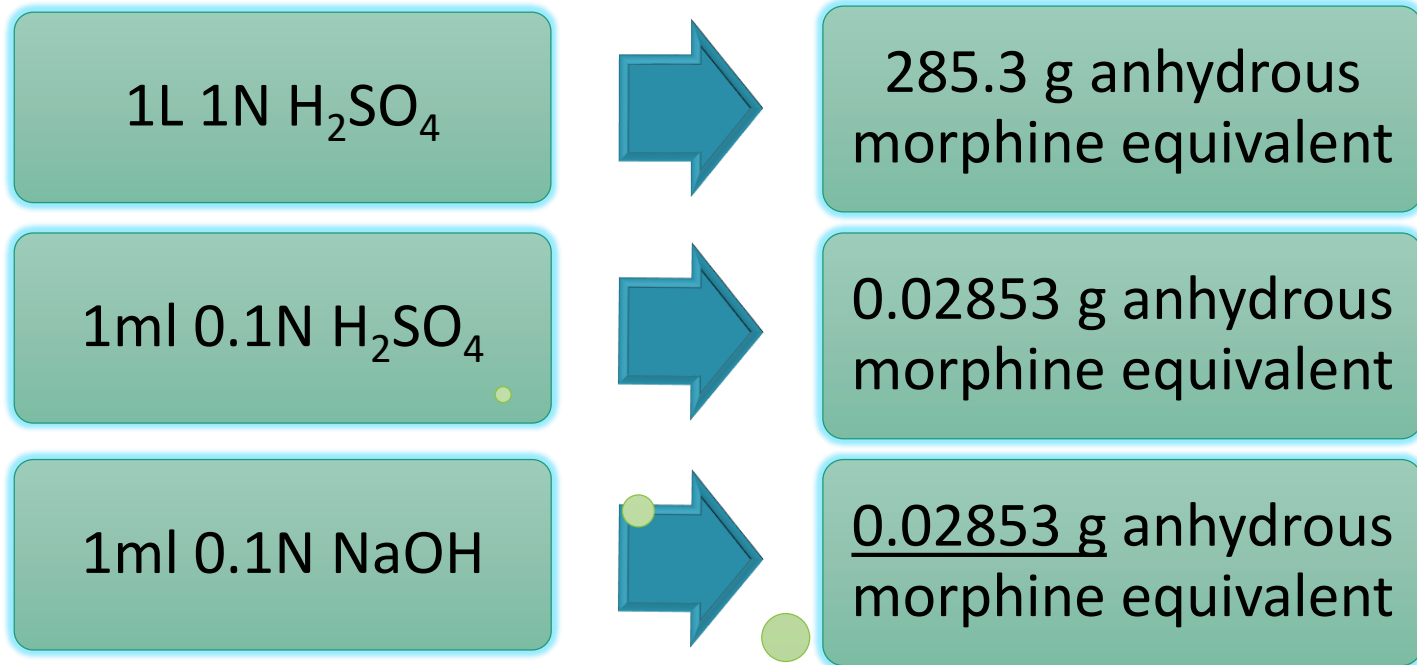
Boiling  
methanol is  
prepared in a  
water bath

+ Methyl red (Indicator)

pH 4,4-6,2  
Acid: red  
Alkaline: yellow

Back titration with 0.1 N NaOH

# Calculation



$$\text{meq H}_2\text{SO}_4 = \text{meq NaOH}$$

Accurate weight of the sample = A gram  
Amount of NaOH spent in titration = m ml;

1ml 0.1N NaOH



0.02853 g anhydrous  
morphine equivalent

(10-m) ml NaOH



X g anhydrous  
morphine equivalent

A g drog



X g morphine

100



???

% Amount  
of  
morphine