

# Principals and dosage forms of pharmaceuticals

Part II. Semisolid dosage forms:  
ointments, creams, gels, pastes, suppositories,  
pessaries



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Pharmaceutical Propedeutics

Institute of Pharmaceutical Technology and Biopharmacy

# Dosage forms

***Medication (medical product) =***

*Active pharmaceutical ingredient (API)+ excipient(s)  
+ packaging material*

- **Manufacturing/ compounding** - pharmaceutical products
- Pharmaceutical products, which are suitable for direct administration are called as DOSAGE FORM.

# Summary

- **Dosage forms** – its physico-chemical systems

## *Liquid dosage forms*

Solutions – drops

Disperse systems containing two or more phase – emulsions, suspensions

Injectable products – injections, infusions

## **Semisolid dosage forms** – ointments, suppositories

Solid dosage forms – powders, dusting powders, granules, tablets, capsules

Other dosage forms – patches, nano preparations (liposomes)

Veterinary dosage forms – different applications, dosage forms from human preparations

**+ Packaging**

# Tools for preparation of solutions and other liquid dosage forms

According to health care regulation of 41/2007. (IX. 19.)

## Tools of preparation of ointments, emulsions, suspensions

- *Spatulas* (metal, plastic)
- *Patendulas*
- *Enameled pestles*
- *Tube filler, tube closer*

## Tools of preparation of suppositories/pessaries

- *Suppository moulds* (1, 2, 3 g)
- Pessary, and vaginal suppository or cylinder mould
- *Bougie device*
- *Citdivide*

## Semi-solid preparation for cutaneous application (Ointments)

„Semi-solid preparations for cutaneous application are intended for *local or transdermal* delivery of active substance or for their emollient or protective action. They are of homogeneous appearance.

Semi-solid preparations of cutaneous application consist of a simple or compound basis in which usually 1 or more active substance are dissolved or dispersed. According to its composition, the basis may influence the activity of preparation.”

*The ointments are plastic gels used for treatment of skin or mucosa, in which the components are dispersed even in solution, emulsion or suspension form.*

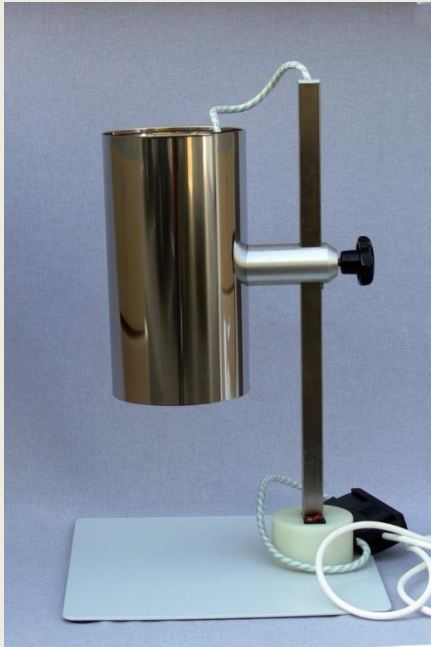
# Semi-solid preparation for cutaneous application (Ointments)

## **CLASSIFICATION OF SEMI-SOLID PREPARATION FOR CUTANEOUS APPLICATION:**

- Ointments
- Creams
- Gels
- Pastes
- Poultices
- Medicated plasters



## Tools of preparation of suppositories





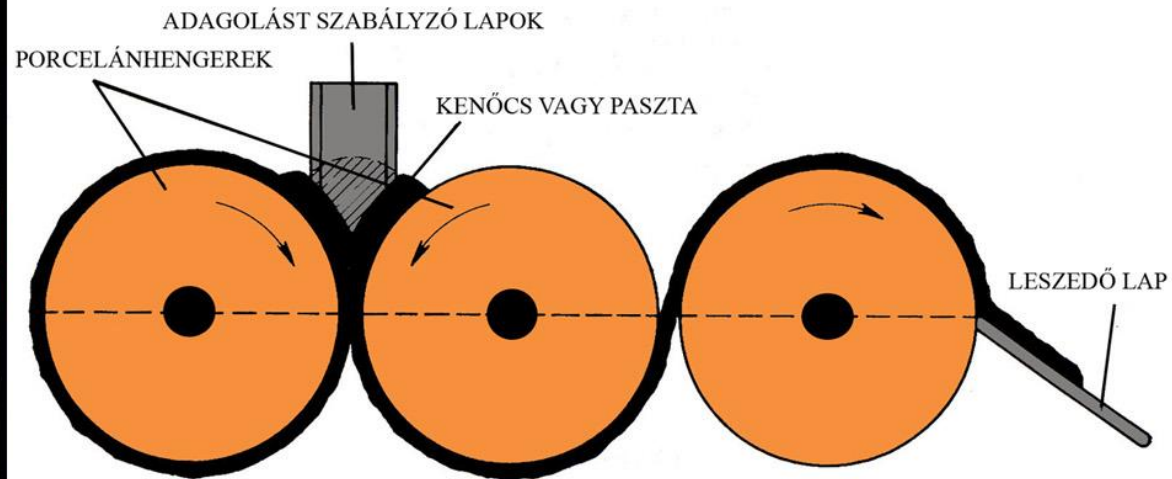
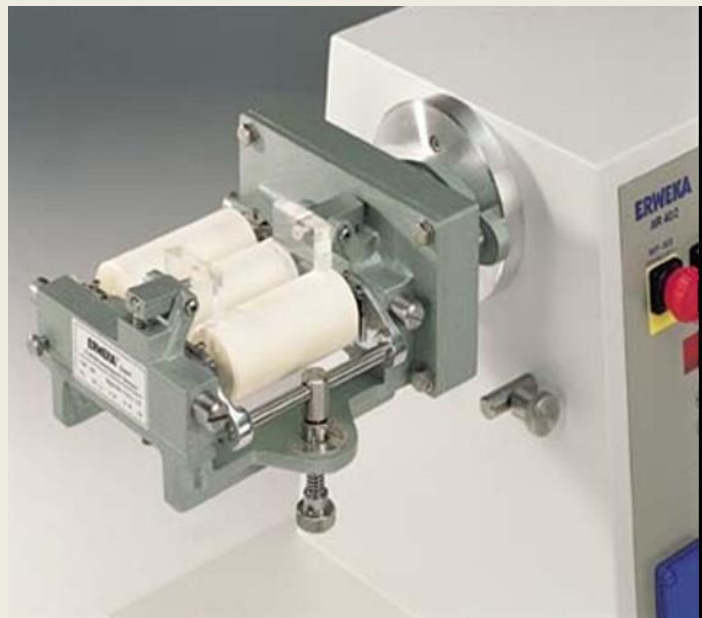
# Preparation of ointments Machines in pharmacy



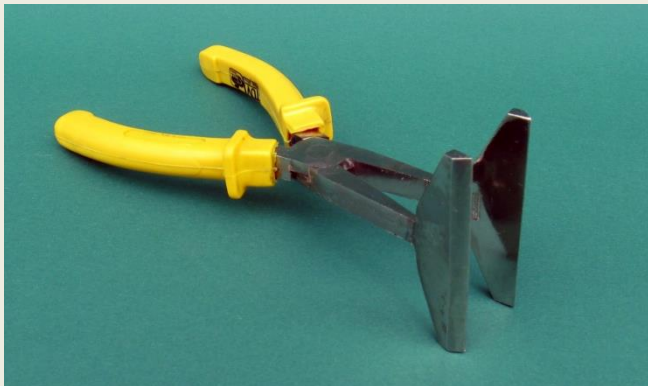
# Machines mixing/stirring ointments



# Triple roll mill – Manufacture of pastes







# Rectal preparations

Ph. Hg. VIII.

„Rectal preparations are intended for rectal use in order to obtain a systemic or local effect, or they may be intended for diagnostic purposes.”

Several categories of rectal preparations may be distinguished:

- suppositories,
- rectal capsules,
- rectal solutions, emulsions and suspensions,
- powders and tablets for rectal solutions and suspensions,
- semi-solid rectal preparations,
- rectal foams,
- rectal tampons.

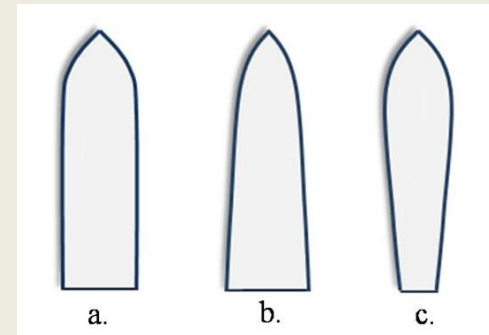


# Rectalia

Rectal, pharmaceutical preparations, which are applied in the rectum to achieve local, systemic effect or in special cases for diagnostic aim.

The most common indications of rectal preparations:

- analgetics, antipyretics
- antiepileptics
- antiemetics
- antibiotics
- anti-migrain preparations
- sedatohypnotics



# Vaginalia

## Vaginal preparations

Vaginal preparations are liquid, semi-solid or solid preparations intended for administration to the vagina usually in order to obtain a local effect. They contain one or more active substances in a suitable basis.

- Several categories of vaginal preparations may be distinguished:
- pessaries,
- vaginal tablets,
- vaginal capsules,
- vaginal solutions, emulsions and suspensions,
- tablets for vaginal solutions and suspensions,
- semi-solid vaginal preparations,
- vaginal foams,
- medicated vaginal tampons.



# RECTALIA, VAGINALIA

- **Categories:**

- Suppositories
- capsules
- solutions, emulsions, suspensions
  - powders for solutions, suspensions
- semisolid rectal preparations
- rectal foams
- rectal tampons

## Suppositories:

- For children 1 - 1,5 g
- For adults 2 – 3 g

## Vaginal preparations:

- Vaginal suppository 1 - 4 g
- Vaginal cylinders 6 - 10 g



# Preparation of suppositories in pharmacy



# Pressing of suppositories

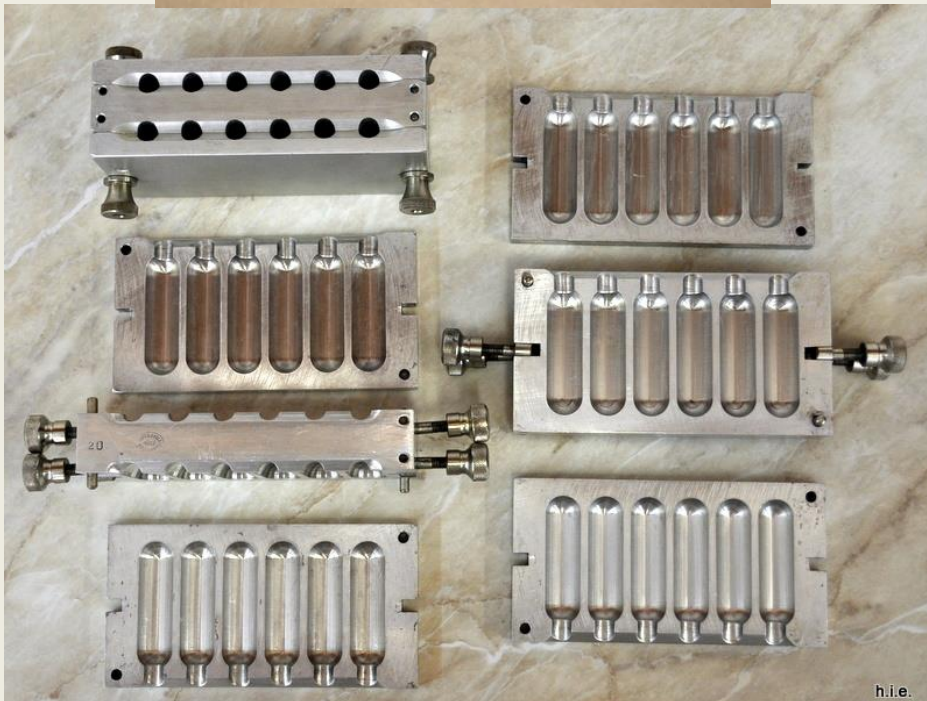




# Congealing of suppositories

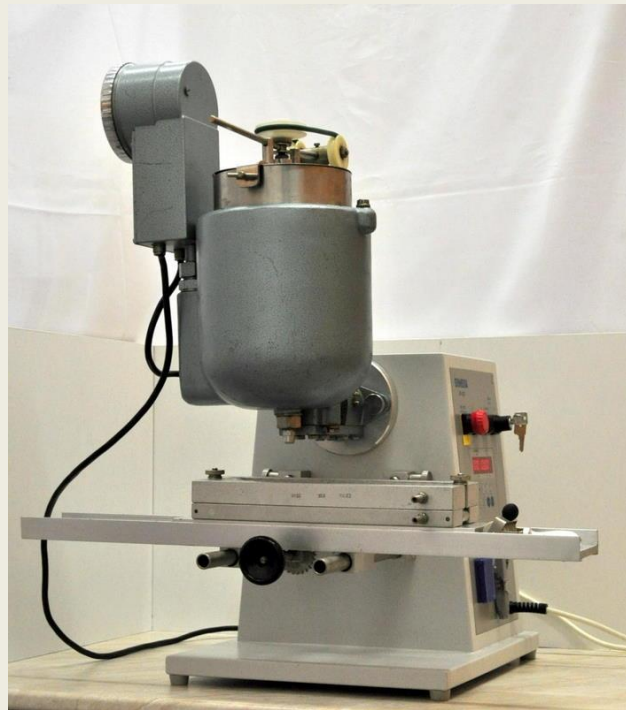


# Moulds of vaginal preparations





# Manufacture



# Semisolid preparations

## Indication areas:

- Dermatology
  - Possibility for individual compositions
  - Wide range of skin conditions
  - Creams, gels, pastes
- Pediatrics
  - Huge role of suppositories
- Gynecology
  - Vaginal preparations

**THANK YOU FOR  
ATTENTION!**

