

SUPPOSITORIES

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SUPPOSITORIES

In Latin, Sup = Under, Ponere = To place

Suppositories are the medicated solid dosage forms intended for use in Rectum, Vagina and to lesser extent in Urethra.

- 1. **RECTAL SUPPOSITORIES**
 - Adults (≈ 2 gm)
 - Childs (≈ 1 gm)

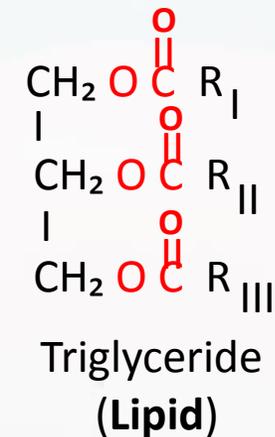
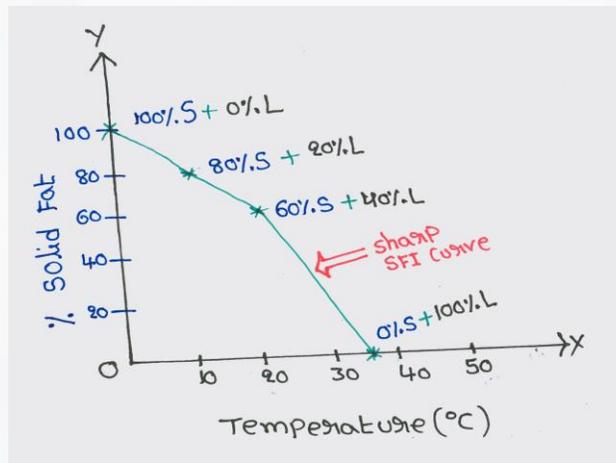
- 2. **VAGINAL SUPPOSITORIES**
(Pessaries) → 3 - 5 gm

- 3. **URETHRAL SUPPOSITORIES**
(Bougies)
 - Male (≈ 4 gm)
 - Female (≈ 2 gm)

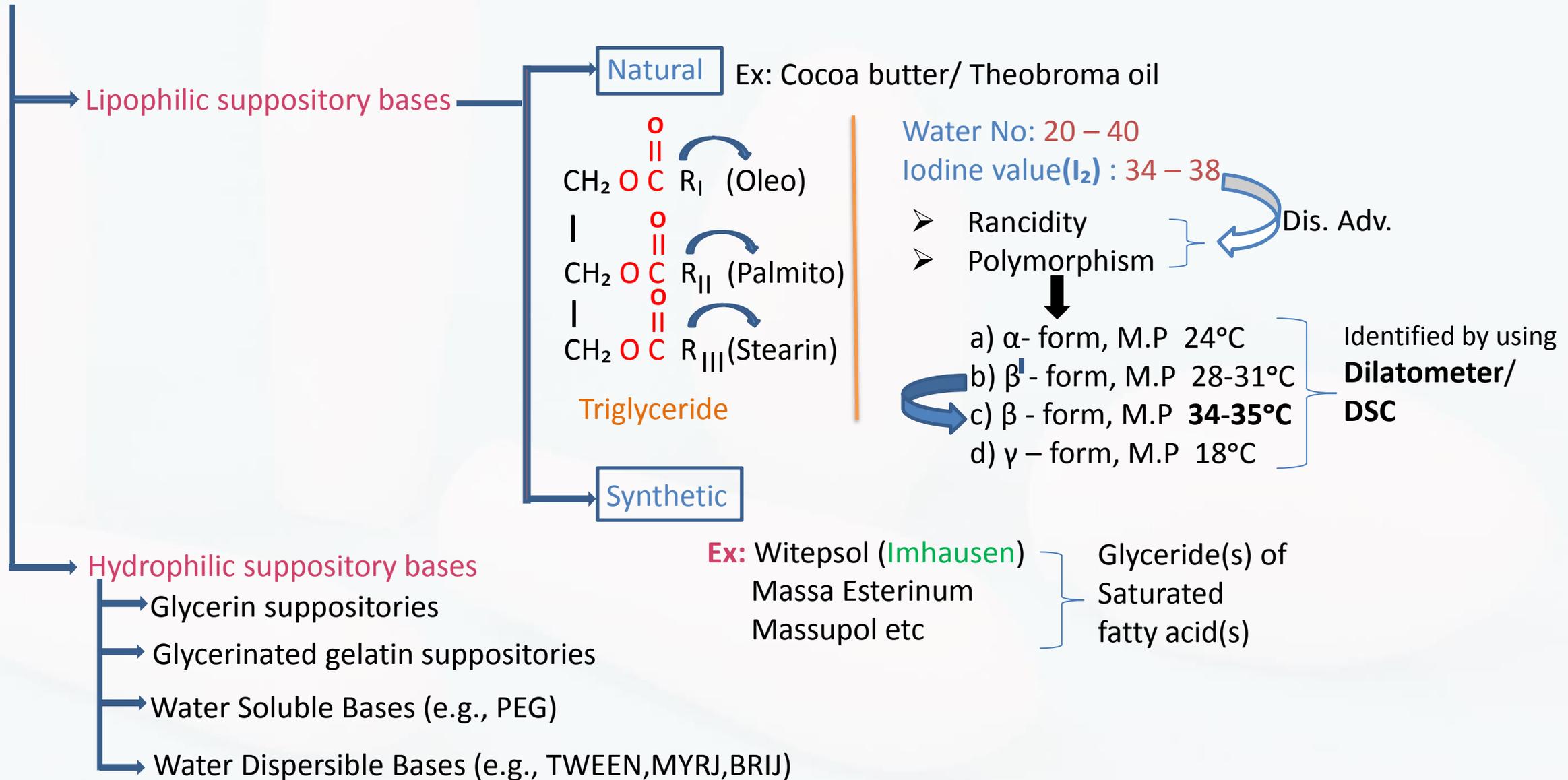


CHARACTERISTICS OF IDEAL SUPPOSITORY BASE

1. Melt at rectal temperature (i.e., about 36°C)
2. Doesn't exhibit metastable forms
3. It shrinks sufficiently on cooling to release itself from the mould without need for mould lubricant
4. Exhibit wetting & emulsifying properties
5. The water number will be high
6. If the base is **lipid**, it has the following additional requirements,
 - i. saponification value ranges from 200-245
 - ii. Iodine value < 7
 - iii. Acid value < 0.2
 - iv. Solid – fat index (SFI) curve is **sharp**



CLASSIFICATION OF SUPPOSITORY BASES



MANUFACTURING OF SUPPOSITORIES



Brass Moulds with Chrome/Nickel Plating

Nominal Capacities

Wt (Gram)	Wt (Grain)
1	15
2	30
4	60
8	120

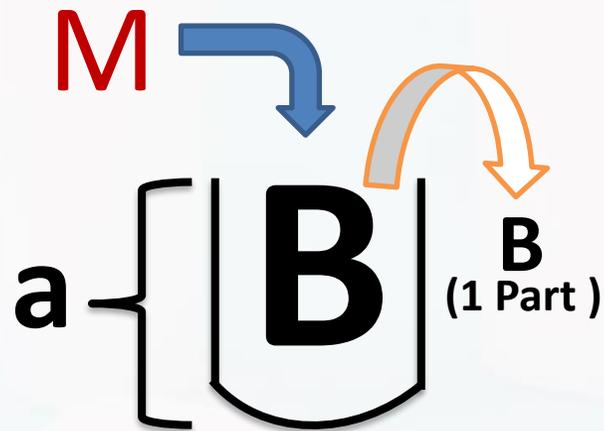
6-Cavities

12-Cavities

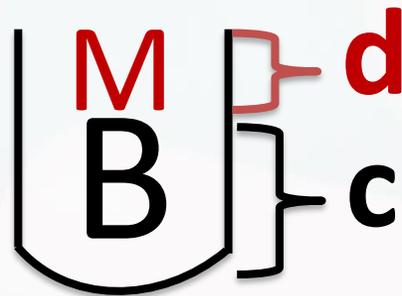


DISPLACEMENT VALUE

Displacement value is the quantity of medicament that displace the one part of base from suppository mould.



Pure Base Suppository



Medicated Suppository

$$\text{Displacement value} = \frac{d}{a - c}$$

PREVIOUS PAPERS

DI 2008 AP

Q). Calculate the displacement of medicament in cocoa butter suppositories containing 40% medicament, prepared in 1gm suppository Mould. The wt. of 10 medicated suppositories is 15gm

A) 6

B) 10

C) 15

D) 4



Wt of (10) Pure base suppositories = No. of suppositories X Mould size

$$(a) = 10 \quad \times \quad 1\text{gm} \quad = 10 \text{ gm}$$

Wt of (10) Medicated suppositories = 15 gm

Medicament	Base
$\frac{40}{100} \times 15 \text{ gm} = 6 \text{ gm}$	9 gm

$$\begin{aligned} \text{Displacement Value} &= \frac{d}{a - c} \\ &= \frac{6}{10 - 9} = \frac{6}{1} = 6 \end{aligned}$$

DCO 2018 RJ

Q). Each Theobroma oil suppository contains 500mg of Zno, when prepared in 1gm suppository mould. What will be the quantity of base in 10 medicated suppositories? (D.V of Zno is 5)

A) 9 ml

B) 9 gm

C) 5 ml

D) 5 gm

Solution:-

- 01 Medicated Suppository containing 500mg of Zno
- 10 Medicated Suppositories contains 5000mg (i.e., 5 gm) of Zno
- Weight of 10 Pure base suppositories = 10 gm
- Displacement value of Zno = 5

GPAT 2020

Q). When six suppositories containing 20 percent of morphine hydrochloride in Theobroma oil are to be prepared, which of the following statement is correct ? (Given: Displacement value of morphine hydrochloride is 1.5; weight of each suppository is 1 g)

1. **The displacement value of morphine hydrochloride is to be ignored**
2. The displacement value of morphine hydrochloride is to be considered
3. The displacement value of Theobroma oil is to be considered
4. The displacement values of both morphine hydrochloride and Theobroma oil are to be considered

Solution:- 6 Suppositories contain 20% of Morphine HCL
i.e., 6 Suppositories contain 1.2gm of Morphine HCL

GPAT 2019

Q). In case of suppository base, SFI stands for

1. Solid Fatty acid Indices
2. Solid Fatty acid Incline
3. Solid Fluid Indices
4. **Solid Fat Index**

GPAT 2019

Q) Which Polymorphic form of a drug candidate has highest melting point:

1. Hydrates
2. **Stable**
3. Metastable
4. Unstable

CDI 2019 NCT

Q) Which one of the following statement is Not correct for an ideal suppository base ?

- a. **Solid Fat Index curve is broad**
- b. Acid value is < 0.2
- c. Saponification value ranges from 200-245
- d. Iodine value is < 7



THANK YOU



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