- Ointments
- • Ointments are homogenous, translucent, viscous semi-solid preparations, most commonly a greasy, thick oil (oil 80% - water 20%) intended for external application to the skin or mucous membrane.
- • Drug ingredients can be dissolved, emulsified or suspended in the ointment base.
- Classification of ointments
- • On the basis of penetration
- • On the basis of therapeutic use On the basis of penetration A- Epidermic ointments
- • These ointments are intended to produce their action on the surface of the skin and produce local effect,they are not absorbed.
- • They acts as protectives, antiseptics and parasiticides.
- B- Endodermic ointments
- • These ointments are intended to release the medicaments that penetrate into the skin.
- They are partially absorbed and acts as emollients, stimulants and local irritants.
- C- Diadermic ointments
- • These ointments are intended to release the medicaments that pass through the skin and produce systemic effects.
- On the basis of therapeutic use
- • Antibiotic Ointments e.g bacitracin
- • Antifungal Ointments e.g Benzoic acid
- • Anti-inflammatory Ointments e.g fluocinolone acetonide
- • Antipruritic Ointments e.g benzocaine
- Counter-irritant Ointments e.g Methyl salicylate
- • Antidandruff Ointments e.g. Salicylic acid OINTMENTS BASES
- • Oleaginous bases or Hydrocarbon bases
- • Absorption bases
- • Water-miscible bases/removable bases/Emulsifying bases
- • Water-soluble bases Oleaginous bases (Hydrocarbon bases)
- • Oleaginous bases are non-aqueous formulations which provides emollient & protective properties.
- • It is difficult to remove hydrocarbon bases from skin due to their oily nature.
- • E.g. Hard Paraffin, White or Yellow soft paraffin, Liquid paraffin, Mineral oil etc..
- • Petrolatum (Soft Paraffin): It is purified mixture of semi-solid hydrocarbons obtained from petroleum. There are two types of soft paraffin one is yellow & other is white soft paraffin. White soft paraffin prepared by bleaching the yellow soft paraffin. The melting point of soft paraffin is 38 to 560C. White soft paraffin not be used in ophthalmic ointment preparations because small amt of bleaching agents involved in that & they causes irritation in the eye.
- Now a days oleaginous bases are not used commonly bec..
- • They are greasy, so its difficult to remove from skin & clothing.
- • They retain body heat which may produce an uncomfortable feeling of warmth.
- • They do not help in the absorption of medicaments. Absorption bases

- • In the absorption bases contains small amt. of water & they provide relatively less emollient properties than hydrocarbon bases.
- • These bases are generally anhydrous substances which have the property of absorbing considerable quty. of water but still retaining their ointment like consistency.
- • They have 2 types :
- 1. Non-emulsified bases
- 2. Water in oil emulsion bases •
- Non-emulsified bases:
- Those bases absorb water & aqueous solution producing W/O emulsion.
- e.g. Wool fat, Wool alcohol, Bees Wax etc..
- • Water in oil emulsion bases: Those bases have the capability of absorbing more water & have the properties of non- emulsified bases. e.g. Hydrous wool fat (Lanolin)
- • Wool Fat: It is also known as anhydrous lanoline & It is the purified fat-like substance obtained from wool of sheep.
- It can be absorb about 50% of its weight of water. So it is used in ointments where the proportion of water or aqueous liquids too large.
- It is mainly used in eye ointment base & in simple ointment base.
- • Wool Alcohol: It is obtained from wool fat by treating with alkali & separate out cholesterol & other alcohols. It contains not less than 30% of cholesterol.
- It is used as an emulsifying agent for the preparation of w/o emulsion. It is also used for improving the texture, stability & emollient properties of o/w emulsion.
- • Bees Wax: It is purified wax obtained from honey comb of bees. It is available in yellow & white form. White bees wax prepared by bleaching treatment. It is used for stiffening agent in paste & ointments. Water-miscible bases/removable bases/ Emulsifying bases
- • These are anhydrous, hydrophilic, absorbs water with low thermal conductivity.
- • It is easy to remove these bases from the skin due to their hydrophilic nature.
- These are used to form oil in water emulsion for topical applications.
- • They have the same properties as the absorption bases.
- • They are used as emollients, cleansing creams, vehicle for solid, liquid drugs.
- • e.g. cold cream type, hydrous lanoline, rose water ointment etc.
- Water soluble bases
- In that bases does not contain oily substances & are called greaseless bases & completely soluble in water.
- • Those are prepared using mixtures of different molecular weights of polyethylene glycol (Macrogols). • PEG are mixture of polycondensation product of ethylene oxide & water.
- • Lower M.W of this polymers (200,400 & 600g/mol) are liquids & the average M.W increases of this polymers changes from liq. To a waxy solid but not greater than 1000g/mol.
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- • Tragacanth, gelatin, pectin, cellulose derivatives, bentonite , sodium alginate are also used as water soluble bases.
- Preparation of Ointments
- • Incorporation Method / Trituration Method

- • Fusion Method
- • Chemical Reaction
- • Emulsification Method Incorporation Method / Trituration Method
- • Powders pass out from mesh no. 250 or 180 or 125.
- • Then apply levigation process with small amt. of base.
- • Then add remaining quty. of base.
- • Finally add liquid ingredients & mix well.
- • E.g Whitfield Ointment
- Fusion Method •
- When an ointment base contains a number of solid ingredients such as white bees wax, cetyl alcohol, stearyl alcohol, hard paraffin etc.
- • By the fusion method, all or some of the components of an ointment are combined & being melted together and cooled with constant stirring until congealed.
- • Naturally, heat-labile substances and any volatile components are added last when the temperature of the mixture is low enough not to cause decomposition of volatilization of the components.
- Emulsification Method
- • In this method, fats, oils & waxes are melted on water bath at 700C.
- • Then in another beaker take water soluble ingredients with water& heat at same temperature
- • Then, aq. solution are slowly added in melted bases with continuous stirring until product cools down & semi-solid not be formed. Paste
- • Pastes are homogeneous semisolid dosage form contains high conc. Of insoluble powder substance ( not less than 20%) dispersed in the suitable base.
- • The paste are usually less greasy, more absorptive & stiffer than ointments.