

Lipsticks

①

Lipsticks are used to make lip appearance attractive by imparting colour.

It is a cosmetic product that is used to apply colour, texture, hydration and give protection to the lips. It makes the lips attractive by changing their colour, appearance and size.

The sophisticated container of a lipstick is designed specifically to protect the product and facilitate direct application to lips. It generally weighs 5-6g and supplied to the baton (stick) of material, within a tubular container, usually around 10mm in diameter and 50mm in length. It comes in various range of shades of true rose, pink, Coral, maroon and various other shades.

The essential requirement of a lipstick is that should cover the lips by simple convenient and comfortable application without serious detriment to the user. Its purpose may be to color, camouflage and protection from wind, water, cold, dryness and light (particularly ultraviolet light) or any combination of these. The ideal characteristics of lipsticks are as follows:

- * It should be smooth and easy to apply leaving a thin film on the lips.
- * It should have high retention of color intensity.
- * It should have a pleasant odour and flavor.
- * It should have stable and long shelf life.

- * It should have the required plasticity to remain firm within reasonable variation of climatic temperature.
- * It should be dermatological safe, nontoxic and nonirritant.

Lipstick is composed of coloring materials dispersed in a blend of oils and waxes. The melting point of lipsticks varies from 55°C - 75°C .

Main Ingredients: Lipsticks contains wax, oil, antioxidants and emollient.

Wax mixture: Wax provides the structure to the solid lipstick. Lipsticks may be prepared from mixture of waxes such as hard paraffin, soft paraffin, white beeswax, ozokerite, ceresine wax and Candelilla wax. Cetyl alcohol is used to maintain desired melting point and viscosity. Because of its high melting point, carnauba wax is a key ingredients in terms of strengthening the lipstick.

Oil mixture: Various oils and fats are used in lipsticks, such as Castor oil, olive oil, mineral oil, cocoa butter, lanolin and petrolatum of varying viscosity and solubility. Castor oil (40-50%), Oleyl alcohol and liquid paraffin (5%) are used to give glossy appearance to the lips. Lanolin and its derivatives may be added as plasticizer. An effective gloss can be obtained with isopropyl Myristate or Isopropyl Palmitate (2-3%).

(2)

Colours:- Lipsticks get their colour from a variety of pigments and lake dyes usually calcium (SFC7 and 34, SFC orange 17) Barium and aluminium. TiO_2 is mostly used to modify shade of basic pigments. Pink lipsticks are made by mixture by mixing white Titanium dioxide and red shades. Both organic and inorganic pigments are employed.

Matte lipsticks contain more filling agents like Silica but do have many emollients. Cream lipsticks contain more waxes than oils. Sheer and long lasting lipsticks contain more oil while long lasting lipsticks also contain Silicone oil, which seals the colour to the wearer's lips. Glossy lipsticks contain more oil to give shiny finish to the lips.

Bromo mixture: It is mainly a solution of dyestuff in a fatty material to enable the dyestuff to remain wholly or partially in solution. Bromo acids (red or orange), fluoresceins or eosin acids are the brominated or more commonly halogenated derivatives of acidic dyes. Bromoacids are dissolved in polyols to get a product having high staining property are required. Solubility and stain effect can be boosted by the additions of materials such as propylene glycol, polyethylene glycols and their derivatives. Polyols have tendency to bleed out of the formulations, if these are not compatible with other ingredients of the formulation. This tendency may be reduced by including glycol esters like propylene glycol monoricinoleate, propylene glycol monolaurate.

These materials act as co-solvents or Coupling agents of the bromoacid solution and oil/wax mixture.

The bromoacid are employed typically to the extent of about 2-3% when staining effect is required.

Shimney or frost lipstick may contain mica, silica and synthetic pearl particles such as bismuth oxychloride to give them a glittery or shimmering sheen.

Other derivatives, The other additives include antioxidants like butylated hydroxyanisole (BHA) and butylated hydroxy toluene (BHT) and propyl gallate at levels of up to 0.1% preservatives (<0.1% of propyl parahydroxy benzoate), UV filters and flavours (non-irritant and non-toxic)

Formula 1

S.NO	Ingredients	%(W/W)	%(W/W)
1	Beeswax	20.0	5.0
2	Ozokerite	10.0	5.0
3	Carnauba Wax	2.5	4.0
4	Candelilla Wax	-	7.0
5	Cetyl Alcohol	2.0	-
6	Lanolin	5.0	3.0
7	Liquid Paraffin	3.0	-
8	Isopropyl myristate	3.0	2.0
9	Propylene Glycol Ricinoleate	4.0	6.0
10	Pigments	10.0	12.0
11	Bromoacids	2.5	2.0
12	Caster oils	100.0	100.0
13	Acetylated Monoglyceride (Solid:liq)	-	7.5

Method of Preparation

(3)

Lipsticks is made from grinding and heating the ingredients. Hot waxes are then added to the mixture for texture. Oils and lanolin are added for specific formula requirements. Afterwards, the hot liquid is poured onto a metal mould. The mixture is then chilled. Once they hardened they are heated in flame for half a second to create a shiny finish and to remove imperfections.

Evaluation of Lipsticks

Lipsticks are evaluated for color stability (with & without exposure to light), stick, strength, melting and softening characteristics and sub off application properties.

The stability testing of finished lipstick should be carried out under a number of different temperature conditions and that reflect the circumstances of storage and use in the market place. Thus refrigerator (4°C), temperature ($15-20^{\circ}\text{C}$) and high summer temperatures (30°C) represent possible experiences, perhaps extending to $35-40^{\circ}\text{C}$ for use in very hot climates. The true nature of the defect could be properly appreciated as a result of examination with a good lens or much better with a stereomicroscope with proper illumination. Minor manifestation of surface instability can be modified or to a degree eliminated by annealing and by fine polishing procedure.

Antiperspirants & Deodorants

Personal Cleanliness products like soaps and shower gels are intended to clean the body. They also include products that help protect against body odours such as deodorants and antiperspirants, as well as feminine hygiene products such as feminine deodorants and douches.

Antiperspirants are the cosmetic products which due to their strong astringent property contract sweat pores to slow the exudation of perspiration process.

Deodorants are products applied to the body, most frequently the armpits to reduce the body odour caused by bacterial breakdown of perspiration.

Deodorants work either by using fragrance to cover up malodour or by absorbing

Antiperspirant mainly control the apocrine sweating and remove the secretion of sweat glands as soon as possible so that bacterial growth does not start. The original active ingredients of antiperspirants was Aluminium chloride but complaints of skin irritation led to the increased use of aluminium chlorohydrate as an alternative. Aluminium has been established as a neurotoxin and has been shown to adversely affect the blood-brain barrier, cause DNA damage and have adverse epigenetic effects.

Research has shown that the aluminium salts used in antiperspirants have detrimental effects to a number of species such as non-human primates, mice, dogs & others.

Antiperspirants can be formulated in the form of liquid, cream, lotion, stick and powder.

Liquid Antiperspirant

Formula 1-2

S.No	Ingredients	% (W/W)	% (W/W)
1	Water	23.0	25.0
2	Aluminium chlorohydrate (50%)	45.0	40.0
3	Glycerine	25.0	35.0
4	Cetyl Pyridinium Chloride	5.0	-
5	Propylene Glycol	0	0.5
6	Borax	2.0	-
8	Perfume	QS	QS

Liquid antiperspirant are generally applied as sprays. These are aqueous or hydroxy alcoholic solutions of astringent salts with humectants. Small amounts of Tween-40 will disperse perfume. Alcohols present in astringent tend to prevent their hydrolysis in solution and also helps in evaporation.

Quaternary ammonium salts such as cetyl pyridinium chloride, cetyl trimethyl ammonium bromide or chlorhexidine can also be used as deodorants in antiperspirants.

Anti-perspirant foot powder

Formula-1

S.No	Ingredients	% (W/W)
1	Talc	80
2	Zinc Stearate	2
3	Magnesium Carbonate	10
4	Tannic Acid	5
5	Paraformaldehyde	3

Cream Antiperspirant

S.No	Ingredients	% (W/W)
1.	Glycerol monostearate (acid stabilised)	15.0
2.	Spermaceti	5.0
3.	Sodium lauryl Sulfate	1.5
4.	Propylene Glycol	6.0
5.	Aluminium Sulphate	7.5
6.	Urea	5.0
7.	Titanium dioxide	0.5
8.	Water	100
9.	Perfume & preservative	Q.S

Antiperspirant Lotions

For an emulsion type of lotion, the manufacturing procedure is basically the same as that used for a cream. The incorporation of astringent salts in a lotion must be carefully controlled to avoid breaking the emulsion. The finished lotion requires careful testing for a emulsion stability with age and change in temperature. The lotion should also be tested for change in viscosity with age.

S.No	Ingredients	% (W/W)
1.	Glycerol monostearate (acid-stable)	15.0
2.	Mineral oil	5.0
3.	Petroleum jelly	2.5
4.	Spermaceti	5.0
5.	Glycerine	6.0
6.	Aluminium Chlorohydrate (50%)	40.0
7.	Water	100
8.	Perfume or Preservatives	Q.S

Antiperspirant stick

Antiperspirant stick usually consist of wax-like matrix which acts as carrier for aluminium chlorohydrate and Volatile Silicone. Stearyl alcohol is preferred over stearic acid because of its lower melting point.

S.No	Ingredients	%(W/W)
1.	Sodium aluminium chlorohydroxy ^(10%) lactate	50.0
2.	Ethyl alcohol	12.0
3.	Propylene glycol	3.0
4.	Sodium stearate	6.0
5.	Perfume	0.5

Deodorants

Deodorants are considered as cosmetics which are used to remove offensive odour of sweat which is deposited on the skin under warm conditions and undergoes decomposition and chemical changes. This may become offensive even inspite of bathing and hygiene. There are two types of deodorants; one that intended merely to deodorize perspiration without restricting its flow and other which deodorize and prevent decomposition through bacteria inhibiting action. Axially odor is produced largely by bacterial action on apocrine secretion. Any compounds having antibacterial action can be used.

The various formulae for preparation of liquid formulae are as follows:

Deodorant liquid

Formula 1

S.No	Ingredients	% (W/W)
1	Chlorhexidine diacetate	0.5
2	Propylene glycol	2.0
3	Denaturated Spirit (50%)	100.0
4	Perfume	0.5

Formula 2

S.No	Ingredients	% (W/W)
1	Aluminium Chloride	15.0
2	Water	81.4
3	Glycerin	3.0
4	Propyl parahydroxy benzoate	0.1
5	Perfume	0.5

Procedure

- 1) Dry materials are dissolved in water
- 2) Perfume and glycerin are mixed in thoroughly.
- 3) To facilitate the dispersion of perfume it may be dissolved in a small quantity of alcohol or rubbed up with some talc, which is further filtered out.

Formula-3

S.No	Ingredients	% (W/W)
1.	Oxyquinoline Sulphate	2.0
2.	Aluminium Chloride	14.0
3.	Magnesium Sulphate	7.0
4.	Water	73.5
5.	Alcohol	3.0
6.	Perfume	0.5

Oxyquinoline Sulfate is an excellent ingredient because it is not only a powerful antiseptic but is also an excellent deodorant beside being non-toxic and non-irritating.

Deodorant Powder

The deodorant powder requires dispersion of deodorants in powder which is achieved by mixing and grinding. Dry ingredients should be mixed in suitable blender. The active ingredients should be dissolved in suitable solvent and should be distributed through powder mixture. Perfume may be blended with the talc first & then may be incorporated into powder.

Formula 1

S.No	Ingredients	%(W/W)
1.	Talc	67.0
2.	Light Precipitated Chalk	12.0
3.	Boric Acid	5.0
4.	Zinc Oxide	5.0
5.	Zinc phenol Sulphate	1.0
6.	Perfume	QS

Formula 2

S.No	Ingredients	%(W/W)
1	Talc	48.0
2	Salicylic acid	2.0
3	Boric Acid	40.0
4	Zinc Stearate	10.0
5	Perfume	QS