



“ Formulation And Evaluation of Compact Powder ”

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ABSTRACT :-This article describes the compact powder blusher which is widely used in the cosmetic field. Powder blusher is one of the best cosmetic products. Nowadays, pressed powder blusher is mainly used and pressed powder is one of the most commonly used makeup products. It is a lightweight powder that is usually in powder form. It is used to give your face a light coverage or to give your makeup the perfect finishing touch. Powder blusher is used to highlight makeup when applied on the cheeks. The choice of cosmetics depends on the skin type. There are different powder blusher colors available in the market .This will help the makeup appear more natural

1. INTRODUCTION :-

Cosmetics are defined as “articles having mild properties” acting on the human body to cleanse, beautify, make more attractive, modify, maintain, or promote the appearance of “skin or hair in good condition” as long as they are functional. Cosmetics, even if they are included in the cosmetic, are referred to as “articles that meet the requirements of specific actions such as lightening the skin, minimizing wrinkles on the face and body, protecting the sun and tan”. The FDA defines a cosmetic as a product (other than plain soap) for application to the human body to cleanse, beautify, promote, attractive, or modify the appearance.

As per section 3 of the drug and cosmetic act 1945, cosmetic means any article intended to be rubbed, poured, spray sprinkled or applied in or incorporated otherwise upon the human body or any part of there of is there to cleanse ,beautifying promote attractiveness or alter the appearance .

Face powder covers blemishes, controls oil, gives the skin a matte finish and leaves it touchably soft. Powders give a good long-lasting effect to the makeup base and have oil-absorbing properties which are very useful for oily skin. Free powders are used to set the base and compact powders are used to touch up the face throughout the day. Certain face powders are easy to make, but it is not easy to make a really good face powder. that spreads well and smoothly Face powders are more complicated and consist of a mixture of products: talc and sericite (to aid distribution), chalk or kaolin (to impart moisture-absorbing properties), magnesium stearate (for adhesion), zinc oxide and titanium oxide (to help completely cover the skin) and pigments.



fig :- 1.1 compact powder

CLASSIFICATION OF COSMETIC POWDER

- Loose powder
- compact powder or pressed powder
- Two-way cake powder □
- Setting powder
- Finishing powder

LOOSE POWDER :-

Loose powders have a fine, powdery appearance. Unlike pressed powders, they are quite difficult to work with. You always need a sponge or brush to apply them to the face. Loose powders are generally used to set liquid foundations and concealers and give them a longer lasting effect.



fig :-1.2 loose powder

COMPACT POWDER OR PRESSED POWDER :-

Compact powder or pressed powder is a loose powder that has been compacted. The main difference between loose and pressed powders is the way the product is packaged. Pressed powders are pressed into a compact format while loose powders are mostly packaged in jars or tins. Pressed powder is typically formulated with a moisturizer and an oil. This makes the texture thicker than loose powder. Also, the face looks greasy 2-3 hours after applying this powder. Therefore, compact powder is recommended for dry skin. It not only brightens the face but also moisturizes the

skin.



fig :-1.3 compact powder

TWO WAY CAKE POWDER :-

A two-way cake is a combination of powder and foundation in one. The double-sided sponge cake shape is more like a pressed powder than a foundation, making it suitable for quick, easy makeup and can be taken anywhere for touch-ups.



Fig :- 1.4 two way cake powder

SETTING POWDER :-

Designed to "set" or hold foundation in place, setting powders prevent foundation from fading and reduce shine for a long-lasting flawless complexion. Loose and pressed setting powders come in two common forms and can be translucent or lightly tinted depending on your skin tone.

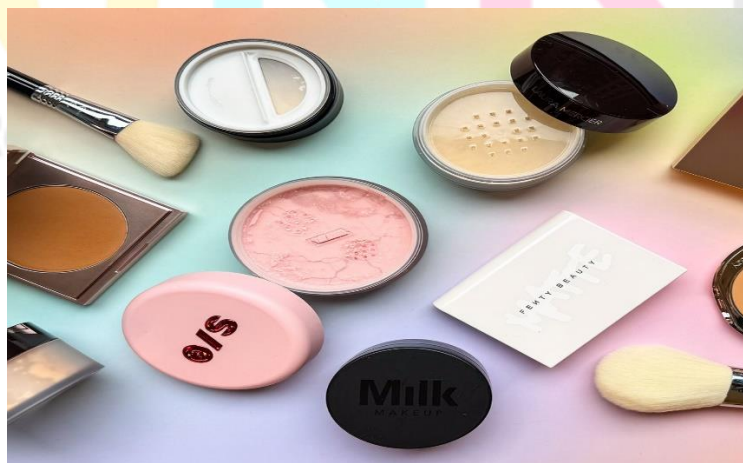


fig :- 1.5 setting powder

FINISHING POWDER:- It is used to set the finished makeup. It can be used to maximize the shine of makeup that looks uneven and fade fine lines or pores on the face. Usually, the finishing powder is white powder.



fig:- finishing powder

2. COMPACT POWDER :-

Compact powders are pressed into a cake shape along with the binder through a compaction process to form compact powders. The powders are applied to the face using a brush. The pressure used in the compaction process is an important factor in the formulation of compacts. As low pressure can produce a cake that breaks easily during use, high pressure can produce a very hard cake. Which does not stick to the puff as easily. The average particles in compact powders are looser as compared to tri-dissolved powders.

APPLICATION :-

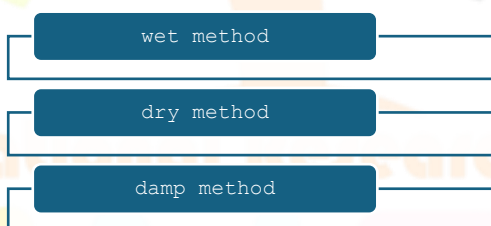
- They are used as cleansing, moisturizing and beautifying agents.
- They help improve the attractiveness of the body
- They help change the appearance of the body without affecting its functions.
- Sunscreen products protect the body from UV rays and treat sunburn.
- Acne, wrinkles, dark circles and other skin blemishes are treated or repaired
- Treatment products.
- Cosmetics that help treat skin infections.

FORMULATION OF COMPACT POWDER :-

Sr no	ingredient	Role of ingredient	F 1	F 2
1	talc	Adhesive agent	3gm	9 gm
2	kaolin	Covering agent	1gm	3 gm

3	Zinc sterate	Lubricating agent	2gm	6gm
4	Maize starch	Smoothing agent	1gm	3 gm
5	Propylene glycol	Binding agent	1ml	3ml
6	Rose water	Flavouring agent	0.5 ml	1.5 ml
7	Sandle wood powder	Coloring agent	0.2 gm	0.6 gm
8	Methyl paraben	Preservative	0.5gm	1.5 ml
9	water	vehicle	q.s	q.s

Methodology:-



WET METHOD :-

Base material, color and binding agent are formulated into a paste with the help of water. The pastes are then pressed into molds and the products are slowly dried in air. This method is not often used because of the possibility of cracks and other preparation defects.



Fig :- 3.1 powder pressing machine

METHOD OF PREPARATION :-



Take a clean and dry mortar and pestle



add kaolin, talcum powder and corn starch.
Add zinc stearate in mortar and pestle and grind well.



To this mixture add required amount of glycerin and water and continue grinding.



Add sufficient amount of perfume, colorant and preservative to the above mixture.
Then mix all the above ingredients well.



Dry the above mixture at a temperature of 100 °C (convection oven)



fig :- 3.2 preparation of compact powder

3. EVALUATION OF COMPACT POWDER :-

- TAPPED AND BULK DENSITY :-

Dust was passed through a number 18 into a pre-weighed 25 ml measuring sieve cylinder with 0.5ml marks. Bulk volume was measured after manually tapping the cylinder twice on a flat table surface. The volume was measured with the tap density tester. after tapping in increments of 500, 750 and 1250 touches at 250 drops per minute



Fig :- 4.1 Bulk density apparatus

CALCULATION :-

Tapped density = mass/volume

$$= 30.10 / 33$$

Tapped density = 0.91

Bulk density = mass / initial volume

$$= 30.10 / 47$$

$$= 0.64$$

- Carr's index :- The bulk and tapped densities were used to calculate Carr's compressibility index to provide measure of the flow properties and compressibility of powders.

Carr's index = Tap density – bulk density/ tap density *

- **Hausner ratio:-** it is indicative of flow properties. It is derived property from bulk and tapped density. Lower the Hausner ratio is indicating better flow whereas higher ratio indicates poor flow of granules. Hausner ratio is calculated by the following formula:

Hausner ratio = Tap density/ Bulk density

$$= 0.91/0.64$$

$$= 1.421$$

- **ANGLE OF REPOSE :-** The angle of repose or critical angle of repose of a granular material is the steepest angle of descent or gradient with respect to the horizontal plane at which the material can be stacked without collapsing. At this angle the slope surface material is in danger of sliding. The angle of repose can range from 0° to 90°

CALCULATION :-

Angle of repose = $\tan^{-1}(h/r)$

$$= \tan^{-1} 4.587$$

$$= 0.436$$

$$\tan^{-1} = 23.55$$

$$\text{Angle of repose} = 23.55$$



Fig :- 4.1 angle of repose

EVALUATION OF COMPACT POWDER

Sr no	Evaluation parameter compact powder	Experimentle value	Standard value
1	Tapped density	0.9 g\ml	0.3-1.0 g\ml
2	Hausner ratio	1.42	1.25 -1.4

3	Angle of repose	23.55 degree	30 degree
4	Bulk density	0.6 g\ml	0.3-0.8 g\ml

CONCLUSION :-

While making the pressed powder, care was taken to ensure that it is suitable for all skin types as the formulation was kept mild. Compact powder is a cosmetic product used to add a special touch to the skin, control oil and fight shine or to give the skin an additional matte finish. It is available in packs as pressed or loose powder. Oil-based products are becoming increasingly popular in the consumer cosmetics market. The pressed powders were prepared in such a way that they are suitable for daily use. Various tests were carried out to check the effectiveness and stability of the product. The aim of the study was to develop an effective compact powder that can be used daily by people of all ages. The compact powder can be applied to the skin and is very economical.

From this study, we can conclude that oil based compact powder (Test 2) has better evaluation parameters and this formulation contains 9 gm talc, 3g kaolin, 6g zinc stearate, 3 g maize starch, 3 ml propylene glycol, 1.5ml rose water. 0.6g, sandalwood, 1.5 ml methyl paraben, q.s, water in terms of appearance, color, extensibility and softness property. It did not cause any roughness or irritation to the skin.

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