

I Definition of “creams”

A cream is normally defined as a solid or semi-solid emulsion of fatty products in a hot liquid.

The different types of creams are classified in the following table according to their use.

Need	Cream classification	Example product
Clean	Hygiene and medicine	Bath gel Detergent
Maintenance	Maintain	Moisturizing cream Waxes
Protect	Protection	Sun cream Fats
Makeup	Cosmetics	Lipstick Colouring creams
Foodstuffs	Food sector	Cocoa cream Edible fats
Pharmaceutical	Pharmacy and over-the-counter products	Burn creams Traumatology creams

I Components of a cream

Creams consist of:

- An active substance
- An excipient or load
- Additives

Active substance

This is the main component and determines the product's use. Active products may be of animal, plant, mineral or synthetic origin.

Excipients

These substances are mixed with the active substances as they cannot be applied pure. They also help application and determine the texture of the product.

The excipients used can be classified as:

- Agglutinants: allow an appropriate product consistency to be achieved.
- Diluents or fillers: provide an appropriate volume for the cream.
- Lubricants: enhance the texture and shine of the final product.
- Sweeteners: provide a more pleasant flavour for the product.
- Flavouring and colouring agents: help to improve the final presentation.

Additives

These components prevent the product from deteriorating or improve its presentation for marketing. They tend to be preservatives (antioxidants and antimicrobials), colouring agents and perfumes. Their use has decreased recently as they have been replaced by other, less aggressive components that do not provoke the allergic reactions or irritations for which they are occasionally responsible.

Corrective products are used to maintain the properties of the components and improve their final presentation. Examples include pH correctors, solubilizers, viscosity modifiers (thickeners), softeners to dissolve the perfume, etc.

1 Summary of the cream manufacturing process

The creams facility comprises a melting reactor equipped with an off-centre blade- or turbine-type agitator with Cowles disc, a blender with anchor and centrally mounted, counter-rotating blades and a tank bottom emulsifier, and a finished product unit with agitation anchor and fixed central blades.

The fats and waxes are first added to the melting reactor, which is normally pre-heated to 80°C. The process temperature varies depending on the type of cream and its manufacture.

Whilst the fats and waxes are being melted and mixed, the blender is heated either by adding water at the working temperature or adding cold water and heating it in the tank. The active substance, additives, etc. are prepared at the same time.

Finally, the mixture from the melting reactor is transferred to the blender under vacuum at a constant and controlled flow rate. The counter-rotating agitator and emulsifier should already have been started. The temperature of both units is the same and is kept constant throughout the process.

After transfer has been completed, the product is agitated without the emulsifier for a few minutes. Upon starting the cooling process, the agitator speed is reduced and, if necessary, the active substance and additives are added at the appropriate temperature.

The mixture is transferred to the finished product unit under vacuum and maintained at a constant temperature of 30°C, with very slow in-line or sequential agitation, until packaging.

The product is transferred to the packaging machine using a lobe rotor pump.

The facilities may also include an INOXPA SIL PIG product-recovery system and a CIP cleaning unit.

