



SOAP & DETERGENT CHEMICALS HANDBOOK

1st Edition

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Introduction of Soap and Detergent

Soap is a cleaning product that is made by combining a type of fat or oil with an alkali, such as lye. The combination of the grease or oil and the alkali creates a substance that is able to trap and remove dirt, oil, and bacteria from the skin. Soap has been used for thousands of years and is one of the most common cleaning products in the world. It is available in many different forms, including bars, liquids, gels, and powders, and can be scented or unscented. Soap is used for washing the body, hands, and other surfaces, and is an essential component of personal hygiene.

Detergent is a cleaning product that is similar to soap but is made using different ingredients and is designed to work in a different way. Unlike soap, which is made from natural ingredients such as fats and oils, detergents are typically made from synthetic ingredients formulated to be more effective at removing dirt, oil, and grime.

Detergents can be found in many different forms, including liquids, powders, and capsules, and are often used for washing clothes, dishes, and other surfaces. They are also used for a variety of industrial cleaning applications.

Detergents are typically more effective at removing grease and oil than soap and are better able to dissolve in hard water, which can cause soap to leave behind a residue. Detergents also tend to be more effective at removing stains and can be formulated to work in various water temperatures.



Types of Soap and Detergent

Types of Soap

- **Toilet soaps** are produced by using higher-quality oils and fatty acids. It comes in a wide range of scents, textures, and formulas, and is often marketed to specific skin types, such as dry skin, sensitive skin, or oily skin.
- **Floating soaps** are designed to float on the surface of the water, rather than sinking to the bottom of the bathtub or sink. Floating soap is made using a combination of ingredients that are designed to give the soap a lighter density, it also contains additional ingredients, such as fragrances or moisturizing agents, to enhance the experience of using the soap.
- **Medicated soaps** are soaps that contain active ingredients that are designed to treat specific skin conditions or provide therapeutic benefits. These active ingredients may include antiseptics, antimicrobials, anti-inflammatory agents, or other substances that are intended to help the skin heal or prevent the growth of bacteria.
- **Shaving soaps** are a traditional and popular option for wet shaving. They provide a rich lather from rosin that helps to soften and lift facial hair, making it easier to shave smoothly and reducing the risk of nicks and cuts.
- **Soap chips** are small pieces of soap that are typically created by shaving or cutting a larger bar of soap. Soap chips can be used in a variety of ways, such as in homemade soap-making, as an ingredient in cleaning solutions or laundry detergent, or as a gentle exfoliant in body scrubs.



Types of Detergent

- **Anionic Detergent** is a type of detergent that has a negatively charged hydrophilic (water-loving) group as its active ingredient. They work by binding to and solubilizing grease and dirt, allowing them to be easily washed away with water. Some common examples of anionic detergents include sodium dodecyl sulfate (SDS), sodium laureth sulfate (SLES), and sodium lauryl sulfate (SLS).
- **Nonionic detergent** is a type of detergent that does not have an electrically charged hydrophilic (water-loving) group as its active ingredient. Instead, nonionic detergents have a hydrophilic group such as an alcohol or a polyethylene oxide chain that is not charged. They are particularly effective in removing non-polar substances such as lipids, oils, and fats. Some common examples of nonionic detergents include Triton X-100, Tween 20, and Brij 35.



- **Cationic detergents** are a type of surfactant, or surface-active agent, that contain a positively charged functional group. Because of their positive charge, they can react with anionic surfactants, which are negatively charged, and cancel out each other's cleaning properties.
- **Amphoteric detergents** are a type of detergent that have both positively and negatively charged groups in their chemical structure. Amphoteric detergents are typically used in situations where a mild detergent is needed, such as in personal care products like shampoos, body washes, and facial cleansers. One common example of an amphoteric detergent is Cocamidopropyl betaine.

The Manufacturing Process

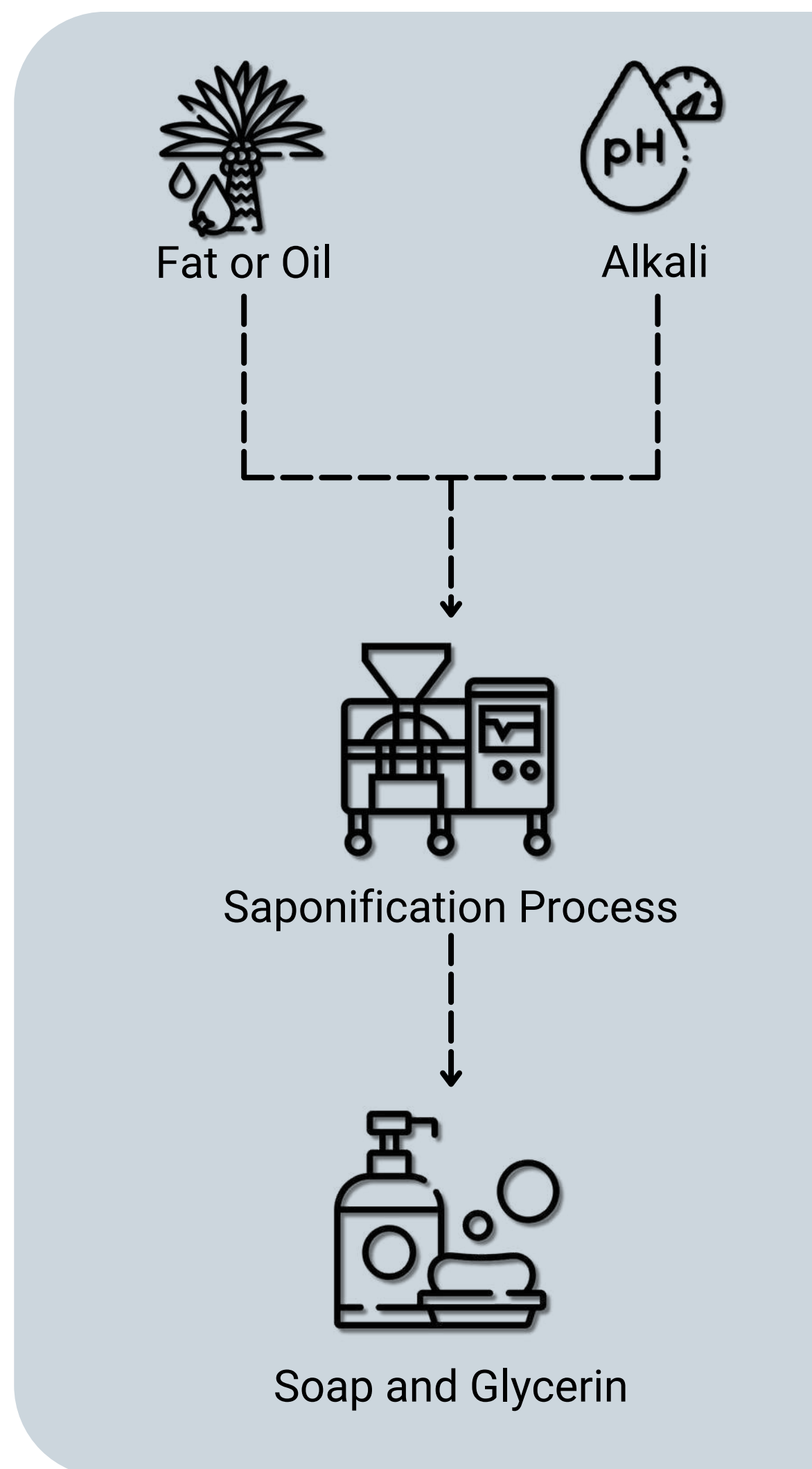
Soap Manufacturing Process

Saponification is the chemical reaction between an alkali (such as sodium hydroxide or potassium hydroxide) and a fat or oil. This reaction results in the formation of soap and glycerin.

The process of saponification occurs when the alkali, which is a strong base, reacts with the fatty acids in the fat or oil. This reaction breaks down the ester bonds in the triglyceride molecules of the fat or oil, releasing the fatty acids and glycerol.

The fatty acids then react with the alkali, producing a salt (soap) and glycerin. The soap molecules have a hydrophilic (water-loving) head and a hydrophobic (water-repelling) tail. This allows the soap to interact with both water and oil, making it an effective cleaning agent.

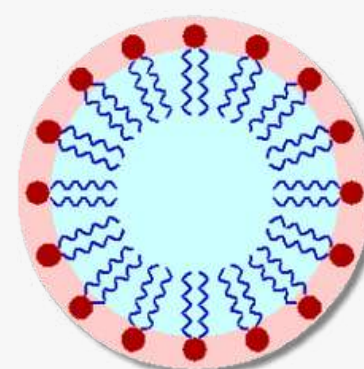
The process of saponification is important in soap making, as it is the key reaction that transforms the raw ingredients into soap. The amount and type of fats or oils used in the soap-making process, as well as the type and amount of alkali, can affect the properties of the resulting soap.



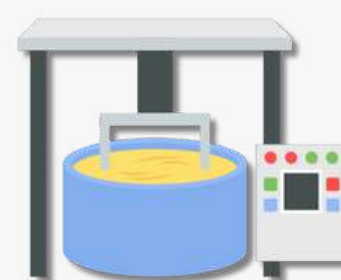
Detergent Manufacturing Process

The process of making detergents involves the synthesis of surfactants, which are amphiphilic molecules. Detergent manufacturing involves several steps, including:

- 1. Surfactant production:** Surfactants are a key ingredient in most detergents, and they are typically produced through a chemical reaction between a hydrophobic (water-repelling) component and a hydrophilic (water-attracting) component.
- 2. Mixing:** Once the surfactants and other raw materials have been collected and measured, they are mixed together in large tanks. This is where the surfactants and builders are combined to create the base of the detergent.
- 3. Neutralization:** next step is to neutralize the mixture by adding an acid or base. This helps to stabilize the detergent and ensure that it is safe for use.
- 4. Heating:** The detergent base is then heated to a high temperature. This helps the chemicals dissolve and react with each other, creating the detergent's cleaning power.
- 5. Cooling and adding additives:** After the heating process, the detergent is cooled down and additives like fragrance, color, enzymes, and optical brighteners are added to give the detergent its final appearance and scent.
- 6. Packaging:** Once the detergent has passed quality testing, it is packaged into containers of various sizes, which can include everything from small bottles to large drums for industrial use.



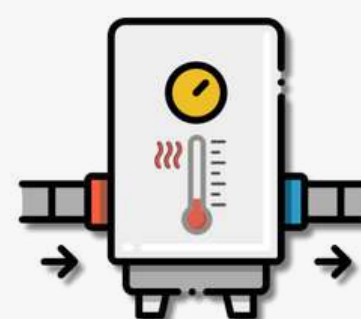
Surfactants



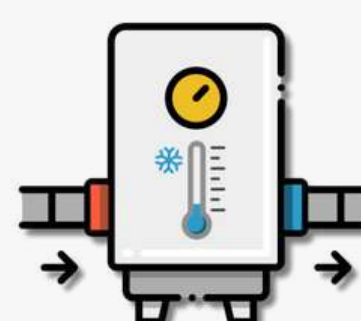
Mixing



Neutralization



Heating



Cooling



Packaging

Water + Other Raw Materials

Acid/Base

Addition of Additives

Application of Soap and Detergent

Soap and detergent are both cleaning agents that are used to remove dirt, stains, and grime from various surfaces. Here are some common applications of soap and detergent:

Laundry Both soap and detergent are commonly used to clean clothes. However, detergents are more commonly used in modern times due to their ability to work effectively in hard water and their ability to remove stains.

Dishwashing Both soap and detergent can be used to clean dishes, but dishwashing detergents are specially formulated to cut through grease and food residue.

Personal Hygiene Soap is used to clean the body, hands, and face, and is available in different forms, such as bar soap and liquid soap. Some soaps also contain moisturizers and other additives to help nourish and protect the skin.



Household Cleaning Soap and detergent can be used to clean a variety of household surfaces, such as floors, countertops, and bathrooms. Detergents are particularly effective for cleaning surfaces that are greasy or oily.

Industrial Cleaning Detergents are often used for industrial cleaning applications, such as cleaning machinery and equipment, as well as cleaning large surfaces like walls and floors.



Industrial Cleaning Detergents are often used in personal care products, such as shampoo and body wash, to help remove dirt and oil from the skin and hair.

Tradeasia Roles in Soap and Detergent Industry

Tradeasia is a trusted and leading supplier of soap and detergent products that are of the highest quality and efficacy. With over 15 years of experience in the chemical industry, we have established ourselves as a reliable supplier of cleaning solutions to customers around the world.



At Tradeasia, we specialize in the manufacture and supply of a wide range of soap and detergent products that cater to the diverse needs of our customers. Our products are manufactured in state-of-the-art facilities using the latest technology and production methods, ensuring that they meet the highest standards of quality and safety.

Our soap and detergent chemicals are suitable for use in various settings, including homes, businesses, and industrial facilities. We offer a wide range of products, including laundry detergents, dishwashing liquids, hand soaps, and surface cleaners, among others, providing our customers with a variety of options to choose from.

We are committed to providing our customers with exceptional service and support. We work closely with our customers to ensure that our products are delivered on time and at competitive prices, regardless of their location. Our team of experienced professionals is always available to provide expert advice and guidance, ensuring that our customers have the best possible experience when dealing with us.

Product Portfolio

Additives

- Ammonium Hydroxide
- Soda Ash Light

Anionic Surfactants

- Linear Alkylbenzene
- Linear Alkylbenzene Sulfonic Acid (LABSA)
- Polyoxyethylene Lauryl Ether
- Sodium Lauryl Ether Sulphate
- Sodium Lauryl Sulphate

Amphoteric Surfactants

- Cocamidopropyl Betaine
- Lauric Acid



Additives: Soda Ash Light



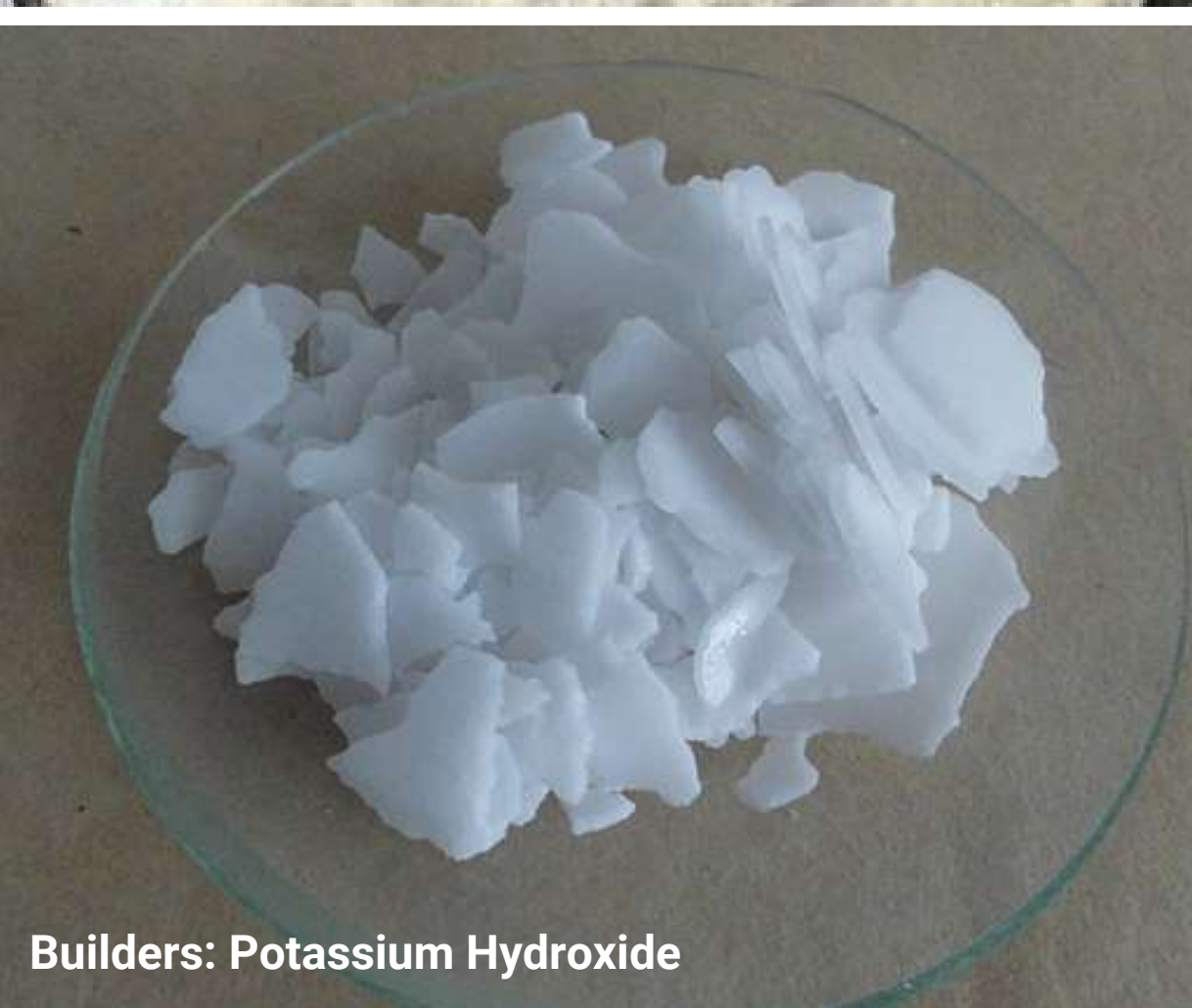
Anionic Surfactants:
Sodium Lauryl Ether Sulphate (SLES)



Amphoteric Surfactants:
Lauric Acid



Bleaching Agents:
Sodium Perborate Anhydrous



Builders: Potassium Hydroxide

Bleaching Agents

- Sodium Percarbonate
- Sodium Perborate Anhydrous
- Sodium Perborate Tetrahydrate

Builders

- Carboxy Methyl Cellulose
- Sodium Tripolyphosphate (STPP)
- Potassium Carbonate
- Potassium Hydroxide

Product Portfolio

Cationic Surfactants

- Oleic Acid
- Stearic Acid

Non-ionic Surfactants

- Caprylic Triglyceride
- Cetyl Alcohol
- Coconut Diethanolamide
- Fatty Alcohol Ethoxylate
- Polyethylene Glycol

Raw Materials

- Caustic Soda Flakes
- Caustic Soda Pearls
- Monochloroacetic Acid (MCA)
- Nonylphenol
- Palm Acid Oil
- Palm Kernel Fatty Acid Distillate
- Refined Glycerine
- Soap Noodles
- Sodium Monochloroacetate (SMCA)
- Tall Oil Fatty Acid



Caustic Soda Flakes



Refined Glycerine



Soap Noodles

CONTACT US

We look forward to working with you and providing you with soap and detergent chemicals that meet your specific needs.



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