

Nonionic

Nonionic surfactants have covalently bonded oxygen-containing hydrophilic groups, which are bonded to hydrophobic parent structures. The water-solubility of the oxygen groups is the result of hydrogen bonding. Hydrogen bonding decreases with increasing temperature, and the water solubility of nonionic surfactants therefore decreases with increasing temperature.

Nonionic surfactants are less sensitive to water hardness than anionic surfactants, and they foam less strongly. The differences between the individual types of nonionic surfactants are slight, and the choice is primarily governed having regard to the costs of special properties (e.g., effectiveness and efficiency, toxicity, dermatological compatibility, biodegradability) or permission for use in food.

Ethoxylates

Fatty alcohol ethoxylates

- Narrow-range ethoxylate
- Octaethylene glycol monododecyl ether
- Pentaethylene glycol monododecyl ether

Alkylphenol ethoxylates (APEs)

Nonoxynols

- Triton X-100

Fatty acid ethoxylates

Fatty acid ethoxylates are a class of very versatile surfactants, which combine in a single molecule the characteristic of a weakly anionic, pH-responsive head group with the presence of stabilizing and temperature responsive ethylene oxide.

Special ethoxylated fatty esters and oils

Ethoxylated amines and/or fatty acid amides

- Polyethoxylated tallow amine
- Cocamide monoethanolamine
- Cocamide diethanolamine

Terminally blocked ethoxylates

- Poloxamers

Fatty acid esters of polyhydroxy compounds

Fatty acid esters of glycerol

- Glycerol monostearate
- Glycerol monolaurate

Fatty acid esters of sorbitol

Spans:

- Sorbitan monolaurate

- [Sorbitan monostearate](#)
- [Sorbitan tristearate](#)

Tweens:

- [Tween 20](#)
- [Tween 40](#)
- [Tween 60](#)
- [Tween 80](#)

Fatty acid esters of sucrose

Alkyl polyglucosides

Main article: [Alkyl polyglycoside](#)

- [Decyl glucoside](#)
- [Lauryl glucoside](#)
- [Octyl glucoside](#)

Amine oxides

- [Lauryl dimethylamine oxide](#)

Sulfoxides

- [Dimethyl sulfoxide](#)

Phosphine oxides

[Phosphine oxide](#)

According to the composition of their counter-ion

In the case of ionic surfactants, the counter-ion can be:

- Monatomic/Inorganic:
 - Cations: metals : [alkali metal](#), [alkaline earth metal](#), [transition metal](#)
 - Anions: halides: [chloride](#) (Cl⁻), [bromide](#) (Br⁻), [iodide](#) (I⁻)
- Polyatomic / Organic:
 - Cations: [ammonium](#), [pyridinium](#), [triethanolamine](#) (TEA)
 - Anions: [tosyls](#), [trifluoromethanesulfonates](#), [methyl sulfate](#)