

POLYSORBATE 40 (TWEEN 40)

E434 Food Grade Bakery Texture Improver

OVERVIEW

Chemical Nature: Versatile non-ionic surfactant derived from polyethoxylated sorbitan and palmitic acid.

Appearance: Yellow liquid. (HLB Value: 15.6)

Primary Application (Food/Bakery): Texture Improver. Provides excellent high-HLB stability. Essential for improving texture in baked goods and enhancing volume in sponge mixes.

Certifications: 100% Vegetable-based & Kosher certified.

SPECIFICATIONS

Polysorbate 40 combines a balanced hydrophilic-lipophilic structure, making it effective for emulsifying systems with moderate oil content. It synergizes well with other emulsifiers to optimize texture and stability.

Test Item	Unit	Min	Max
HLB Value	-	15.6	
Saponification Value	mg KOH/g	100	115
Hydroxyl Value	mg KOH/g	225	255
Acid Value	mg KOH/g	-	2
Moisture	%	-	3

MOLECULAR STRUCTURE & MECHANISM

- Hydrophilic Segment:** Polyoxyethylene chain comprising approximately 20 ethylene oxide units attached to the sorbitan core.
- Hydrophobic Moiety:** Palmitic acid ester (derived from palm oil).
- Mechanism:** Amphiphilic Balance. The combination of the hydrophilic polyoxyethylene chain and the lipophilic palmitate ester creates a versatile amphiphilic structure. This makes it highly effective for emulsification, wetting, and solubilization in aqueous systems.

KEY FEATURES

Bakery Texture Enhancer

Significantly improves the aeration and volume of cakes and whipped toppings. It interacts with proteins and starches to create a finer, softer crumb structure.

Oxidative Stability

Derived from saturated palmitic acid, Polysorbate 40 is chemically more stable and resistant to oxidation than the unsaturated oleic acid found in Polysorbate 80.

High-HLB Emulsification

With an HLB of 15.6, it is highly effective at stabilizing oil-in-water emulsions, preventing separation in dairy alternatives, sauces, and cosmetic creams.

Vegetable Palmitate Source

Sourced exclusively from vegetable palm oil. Fully renewable, biodegradable, and compliant with Kosher/Halal dietary standards.

APPLICATIONS

- **Food & Bakery (E434):** Used extensively in cakes, sponge mixes, and whipped toppings to improve volume and texture. It helps retain moisture and prevents staling.
- **Cosmetics & Skincare:** Functions as a mild emulsifier in lotions, creams, and hair care products. Its palmitate chain offers a richer skin feel compared to the lighter Tween 20.
- **Dairy Alternatives:** Stabilizes fat emulsions in non-dairy creamers and beverages.

STORAGE & PACKAGING

Storage: Store in a cool, dry, and well-ventilated area, away from direct sunlight and sources of heat. Avoid contact with harmful or incompatible substances.

Transportation: Transport as a general chemical product, following standard safety and handling procedures.

Package: Polysorbate 40 is packed in high-quality PE drums with double-seal lids.

- 25 Kg / drum
- 200 Kg / drum
- 1000 Kg IBC tote