SORBITAN MONOOLEATE (SPAN 80)

E494 W/O Emulsifier & Lubricant

OVERVIEW

Chemical Nature: Non-ionic surfactant derived from the esterification of sorbitol with oleic acid.

Appearance: Pale yellow to amber oily liquid. (HLB Value: 4.3)

Primary Application: W/O Emulsion Specialist. Especially effective at stabilizing water-in-oil emulsions. Provides texture control and stability in fat-rich formulations.

Key Roles: Functions as a dispersant and lubricant in various industrial applications.

SPECIFICATIONS

Sorbitan Monooleate does more than just emulsify; it enhances the physical characteristics of food systems by improving texture, dispersibility, and stability. It helps regulate fat distribution and ensures consistent product quality.

Test Item	Unit	Min	Max
HLB Value	-	4.3	
Saponification Value	mg KOH/g	145	160
Hydroxyl Value	mg KOH/g	193	210
Acid Value	mg KOH/g	-	8
Moisture	%	-	2
Fatty Acids	w%	73	77
Polyol	w%	28	32
Phosphorus	mg/kg	-	3
Lead (Pb)	mg/kg	-	2

MOLECULAR STRUCTURE & MECHANISM

- **Hydrophilic Core:** Sorbitan (anhydrosorbitol) ring structure.
- **Hydrophobic Moiety:** Single oleic acid molecule esterified to the core.
- **Mechanism:** Fluidity & Lipophilicity. The long oleic acid chain imparts fluidity and strong compatibility with lipid phases. While it has some hydrophilic balance, it is predominantly lipophilic, making it ideal for dispersing in oils and stabilizing W/O emulsions.

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KEY FEATURES

Superior W/O Emulsification

With a low HLB of 4.3, Span 80 is the ideal choice for creating stable Water-in-Oil emulsions, where water droplets are suspended within a continuous oil phase.

High Lubricity (Oleic Source)

Derived from unsaturated Oleic Acid, it offers excellent surface lubrication properties, making it essential for reducing friction in textile manufacturing and metalworking.

The Perfect Tween 80 Partner

Span 80 and Tween 80 are the industry's most common "power couple." Mixing them allows formulators to hit any specific HLB target between 4.3 and 15.0 for customized stability.

Liquid Handling

Unlike Span 40 or 60 (which are solids), Span 80 is a liquid at room temperature, making it easy to pump, pour, and mix into cold-process formulations without heating.

APPLICATIONS

- **Textile & Fiber:** Acts as a smoothing lubricant and antistatic agent for synthetic fibers, preventing breakage during high-speed spinning.
- **Industrial Explosives:** The primary emulsifier used to stabilize emulsion explosives (matrix), allowing for safe storage and transport.
- **Cosmetics:** Used in "rich" night creams and ointments to create Water-in-Oil emulsions that provide a protective barrier on the skin.
- **Food Processing:** Functions as a defoamer in yeast production and sugar refining, and as a dispersant for oil-soluble colors.

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 Options:

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

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