SORBITAN TRIOLEATE (SPAN 85)

Ultra-Low HLB Oil Dispersant

OVERVIEW

Chemical Nature: Specialized non-ionic surfactant consisting of sorbitan esterified with three oleic acid chains.

Appearance: Viscous amber liquid. (HLB Value: 1.8)

Primary Application (Industrial/Energy): Critical Additive for Harsh Conditions. Highly lipophilic. Essential in the energy sector for oil drilling fluids and emulsion explosives to stabilize W/O systems.

Key Function: Effective pigment dispersant in anhydrous (water-free) cosmetics.

SPECIFICATIONS

Beyond its emulsifying function, sorbitan trioleate plays a critical role in improving the physical properties of oil industries due to its multifunctional properties. It is widely applied in water-in-oil systems and demonstrates synergistic performance when used with polysorbates.

Test Item	Unit	Min	Max
HLB Value	-	1.8	
Saponification Value	mg KOH/g	165	180
Hydroxyl Value	mg KOH/g	60	80
Acid Value	mg KOH/g	-	15
Moisture	%	-	1.5
Freezing Point	°C	-	< 0
Viscosity (25°C)	mPa.s	100	250
Arsenic (As)	mg/kg	-	3
Lead (Pb)	mg/kg	-	2

MOLECULAR STRUCTURE & MECHANISM

- **Hydrophilic Core:** Sorbitan backbone.
- **Hydrophobic Moiety:** Three oleic acid residues esterified to the backbone.
- **Mechanism:** Strongly Hydrophobic & Fluid. The three unsaturated hydrocarbon chains confer a strongly hydrophobic nature and liquid consistency. This makes it insoluble in water but ensures excellent compatibility with edible oils and

mineral oils.

KEY FEATURES

Ultra-Low HLB (1.8)
With one of the lowest HLB values available, Span 85 is the ultimate choice for systems that are predominantly oil. It stabilizes inverse emulsions that other surfactants cannot handle.

Superior Pigment Wetting
Its trioleate structure allows it to thoroughly coat solid particles (like pigments or minerals) in oil bases, preventing clumping and ensuring a smooth dispersion.

High Lubricity
Featuring three oleic acid tails, it offers exceptional lubricity and friction reduction, making it valuable in metalworking fluids and textile spinning lubricants.

Inverse Emulsion Stability
Critical for the explosives industry, it creates a robust barrier around water droplets within an oil phase, preventing premature coalescence even during long storage.

APPLICATIONS

- **Oil & Gas (Drilling Fluids):** Used in oil-based drilling muds to maintain emulsion stability and viscosity under high pressure and temperature.
- **Industrial Explosives:** The primary emulsifier for stabilizing the "oxidizer-in-fuel" matrix of emulsion explosives, ensuring safety and shelf life.
- **Cosmetics & Personal Care:** Acts as a dispersing agent for pigments in lipsticks and foundations, and as an emulsifier in cleansing oils.
- **Textile & Leather Processing:** Provides superior lubrication and softening properties to fibers and leather due to its high oil content.

STORAGE & PACKAGING

Storage: Store in a cool, dry, and well-ventilated area, away from direct sunlight. Keep container tightly sealed.

Transportation: Transport as a general chemical product.

Package Options:

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