

Nonionic Dynamic Wetting Agent and Molecular Defoamer SURFADOL® 541

SURFADOL® 541 is a multi-functional surfactant that combines dynamic wetting and molecular defoaming in waterborne coatings and inks. SURFADOL® 541 is available in liquid form in different solvent cuts.

Composition

100% active 2,4,7,9-Tetramethyldec-5-yne-4,7-diol
CAS No: 126-86-3

Typical properties

Chemical family	Acetylenic diol; Nonionic surfactant; Gemini surfactant
Appearance	White waxy solid
Equilibrium surface tension (concentration 0.1%, 1b/s)	33.3 dynes/cm
Dynamic surface tension (concentration 0.1%, 6b/s)	36.8 dynes/cm
Density at 25°C, g/cm ³	0.89
Solubility in water	Not soluble
Boiling point	262°C
Melting point	54-55°C
Suggested use level	0.1% - 1.5% of total formulation weight

COA specifications

Test Item	Standard
Appearance	White waxy solid
APHA Color (Pt-Co)	≤350
TMDD purity (GC)	≥98.00%
Water Content	≤1.50%

Special properties

- Quick migration, leading to low dynamic surface tension
- Ability to wet contaminated substrates
- Non-micelle forming
- Thermal and chemical stability over a broad range of conditions
- Prevents surface defect problems such as fisheyes, crawling, and cratering on low-energy substrates
- Reduces microfoam in spray-applied systems
- Improves pigment grind efficiency
- Reduces water sensitivity
- Defoams, deaertrains, and improves flow
- Enhances leaf and soil penetration while improving bloom and stability in agricultural chemicals
- Lubricates, wets, and prevents smut formation while eliminating hot spots in metalworking fluids
- Silicone-free, APEO free, non-toxic

Physical forms

As shown in the following table, SURFADOL® 541 is available in liquid forms for ease of handling, or as a free-flowing powder on a solid support.

SURFADOL® surfactant	Physical form	Composition
SURFADOL® 541A	Light yellow liquid	50% wt 541 in 2-ethylhexanol
SURFADOL® 541BC	Light yellow liquid	50% wt 541 in 2-butoxyethanol
SURFADOL® 541D	Light yellow liquid	50% wt 541 in diethylene glycol
SURFADOL® 541DPM	Light yellow liquid	50% wt 541 in dipropylene glycol monomethyl ether
SURFADOL® 541E	Light yellow liquid	50% wt 541 in ethylene glycol
SURFADOL® 541H	Light yellow liquid	75% wt 541 in ethylene glycol
SURFADOL® 541PA	Light yellow liquid	50% wt 541 in isopropyl alcohol
SURFADOL® 541PG	Light yellow liquid	50% wt 541 in propylene glycol
SURFADOL® 541PM	Light yellow liquid	50% wt 541 in propylene glycol methyl ether
SURFADOL® 541S	Free-flowing powder	42.5% wt 541 on amorphous silica

Examples of application

- Water-based printing inks
- Fountain solutions
- Overprint vanishes
- Water-based adhesives
- Waterborne coatings
- Agricultural chemicals
- Dye processing
- Metalworking fluids
- Concrete and drymix mortars

Processing instructions

- Addition to the coating as supplied or as a predilution is possible.
- Can be introduced in the grind and let-down stage.

Package and storage

The standard package for SURFADOL® 541 is 180kg galvanized iron drums, 4 drums/pallet. The product is also available in 20kg pails, 18 pails/pallet.

Keep containers tightly closed in a dry, cool, and well-ventilated place. Product is freeze-thaw stable. Container should be heated to 60-70°C to completely melt product; mix thoroughly before use.

When stored in an original unopened packaging, the product has a shelf life of 48 months from the date of manufacture.