

AEROSOL® OT-NV Surfactant

Type: Anionic
Chemical: Proprietary Sulfosuccinate Blend
Molecular Formula: Mixture

AEROSOL OT-NV surfactant is an ultra low VOC, APE free, and high solids wetting agent, dispersant and emulsifier that is an extension of the extremely popular AEROSOL OT line of surfactants/wetting agents. It possesses the excellent equilibrium and dynamic wetting characteristics of the line of AEROSOL OT surfactants, combined with lower foam and higher electrolytic stability.

PHYSICAL AND CHEMICAL PROPERTIES

VOC (ASTM method #24)	ZERO
Chemical	Proprietary blend
Appearance	Clear, slightly viscous liquid
Solids, % by weight	83±3
Color, APHA, maximum (50% solids)	50
Specific gravity, 25°C	1.08-1.1
Viscosity, cps at 25°C	200-400
Flash Point	> 200°F (93°C)
pH, 1% solution	5-7
Acid number, as is	1.0 max
Iodine value, as is	0.25 max

Solubility: Organic polar solvents	excellent
Solubility: Organic non-polar solvents	good
Acetone	soluble
Benzene	soluble
Carbon tetrachloride	soluble
Ethanol	soluble
2-ethyl hexanol	soluble
Isopropanol	soluble
Kerosene	soluble
MEK	soluble
Oleic acid	soluble
Propylene glycol	soluble

SURFACE ACTIVE PROPERTIES

cmc, % by weight	0.02%
Surface tension at cmc	29 dynes/cm
Wetting Time (Draves Test)	< 1 sec (1% aq. solution)

ROSS-MILES FOAM TEST

ASTM D-1173, 0.5% solution, 25°C

Time	0 min	3 min	5 min	7 min
Foam vol. (ml)	300	150	40	0

ELECTROLYTE TOLERANCE

At 0.05% solids	> 2250 ppm Calcium tolerance
At 0.5% solids	> 2250 ppm Calcium tolerance

HEALTH AND SAFETY

Acute oral (rat) and dermal (rabbit) LD₅₀ values for this material are estimated to be greater than 5,000 mg/kg and greater than 2,000 mg/kg respectively. The 4-hour inhalation LC₅₀ (rat) value is estimated to be greater than 20 mg/L.

Direct contact with this material may cause moderate eye and mild skin irritation.

REGULATORY INFORMATION

US TSCA

This product is manufactured in compliance with all provisions of the Toxic Substances Control Act, 15 U.S.C. 2601 et. seq. This product contains a chemical substance that is subject to export notification under Section 12(b) of the Toxic Substances Control Act, 15 U.S.C. 2601 et. seq.

CANADA DSL

Components of this product have been reported to Environment Canada in accordance with subsection 25 of the Canadian Environmental Protection Act and are included on the Domestic Substances List.

EEC EINECS

All components of this product are included in the European Inventory of Existing Chemical Substances (EINECS) in compliance with Council Directive 67/548/EEC and its amendments.

POTENTIAL APPLICATIONS FOR AEROSOL OT-NV

With the growing emphasis on VOCs as an environmental issue, formulators are always on the lookout for ways of reducing the VOC content in their formulations. With this in mind, AEROSOL OT-NV surfactant has been specially formulated to have ultra low VOC levels. It possesses surface active properties very similar to those of the popular line of AEROSOL OT surfactants/wetting agents. These properties are: low surface tension, extremely rapid equilibrium, dynamic wetting, and better electrolytic stability. It can be used in any application requiring faster and deeper wetting, and better leveling and spreadability. It can also be used to improve the overall flow characteristics of a coating, as an emulsifier in emulsion polymerization, and as a dispersing agent for moderate HLB particulates. A few representative applications where AEROSOL OT-NV surfactant could be used as an ultra low VOC alternative to AEROSOL OT surfactant are listed below:

PRINTING INK / OVERPRINT VARNISH SYSTEMS

AEROSOL OT-NV surfactant, when post-added, can provide the following performance advantages in wet-on-wet OPV systems:

- Rapid and dramatic lowering in surface tension of the formulation, leading to improved wetting of the substrate. This, in turn, improves adhesion, gloss and color resolution. Rapid wetting can be compatible with very fast printing rates.
- Improved flow characteristics, leading to uniform coating of the substrate.

EMULSION POLYMERIZATION

AEROSOL OT-NV surfactant can also be used as a primary or co-emulsifier, and as a post-add, for the manufacture of a wide variety of latex types. Some of the potential advantages of using it are:

- Efficient particle generation at low usage level is achieved due to extremely low cmc.
- It can yield latexes with very low particle size.
- When used in combination with AEROSOL MA 80-I or AEROSOL A-196 surfactants, it forms an extremely efficient particle-generating system for styrene-butadiene latexes.
- It is extremely effective as a post-add in all types of latexes (including acrylic, styrene-acrylic, vinyl acetate, vinyl acrylic, styrene-butadiene) in lowering surface tension and in improving flow and leveling characteristics.

MISCELLANEOUS APPLICATION AREAS

- **Textile and Paper**
Can be a very effective wetting and dispersing agent.
- **Paint Formulations**
Can provide excellent flow and leveling/spreading characteristics, and promote better penetration, better wetting and, hence, paint adhesion. Its excellent organic solubility can also make it compatible with a wide variety of paint additives/formulations.
- **Dry Cleaning**
Can be very effective in liquid dry cleaning formulations due to its very good wetting, dispersing and emulsifying capabilities. It can also be very effective in cleaning solutions for glass windows, automobile windshields, etc.
- **Anti-Stat**
Can be used as an anti-stat/softening agent.
- **Wetting Agent**
Can be used as a wetting agent for a number of substrates, such as metal, glass, plastic, etc.

PATENT STATUS

This product is protected under US Pat. #5,512,211

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