



PATCHAM (FZC)

PAT-ADD SU 4

PRODUCT DATA SHEET

PAT-ADD SU 4 is a series of unique nonionic surface active agents, which provide both wetting and defoaming in the same product.

Due to the multifunctional properties, PAT-ADD SU 4 series provides performance benefits in many applications areas, such as paints, inks, adhesives and various other chemical formulations.

The PAT-ADD SU 4 series is composed of products, all based on same active material but formulated in different solvent compositions. The active material is designed as PAT-ADD SU 4.

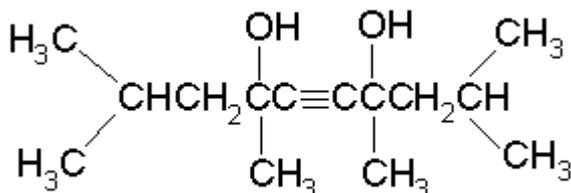
PHYSICAL CHARACTERISTICS of PAT-ADD SU 4:

Appearance	:	waxy like, white solids
Melting range, °C, approx	:	52- 56 °C
Specific gravity @ 25°C, kg/ m ³	:	approx. 900
Purity	:	>99%
Colour Gardner	:	max 1
Composition	:	2,4,7,9-Tetramethyl-5-decyne-4,7-diol

PROPERTIES:

Compared to traditional surface active agents (including APE polyglycol ethers), PAT-ADD SU 4 exhibits remarkable faster and stronger surface activity; moreover foam destroying instead of foam stabilization properties.

Structural Formula:



Following solutions of PAT-ADD SU 4 are commercially available:

PAT-ADD	Concentration	Solvent composition
PAT-ADD SU 4 E	50	Ethylene glycol
PAT-ADD SU 4 -H	75	Ethylene glycol
PAT-ADD SU 4 -PA	50	2-Propanol
PAT-ADD SU 4 -PG	50	Propylene glycol
PAT-ADD SU 4 -DPM	50	2-Methoxymethylethoxypropanol

All above mentioned solutions are clear and supplied at low viscosity.



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MAIN BENEFITS OF THE PAT-ADD SU 4 MEMBERS ARE:

- Defoaming agent and wetting agent is one product
- Strong reduction of surface tension of aqueous systems
- Quick and low dynamic surface tension reduction
- Low usage levels
- Reduced pigment grinding time
- Aids flow and levelling
- Minimizes viscosity of concentrated aqueous polymer solutions, emulsions and dispersions
- Lowest effect on film water sensitivity

APPLICATION:

Main applications of the PAT-ADD SU 4 series generally involve water/oil or water/solid interfaces, where interfacial tension reduction is required.

Application examples are in inks, paints, heat sensitive adhesives, fountain solutions, compounded materials for leather, emulsion polymerization, pigment grinding aids, cleaners, agricultural chemicals, shampoo, metalworking fluids, adhesive, paper coatings, pigment dispersions, colorants, latex dipping, drilling needs, coatings and the like.

Application in Coatings and Inks

PAT-ADD SU 4 (notably SU 4 E, H and P solutions) is widely used as a multipurpose problem solver. The strong effect on lowering dynamic surface tension indicates PAT-ADD SU 4 showing favorable wetting properties, also in case of fast created new interfaces, such as in case of roller coating, as well as spray coating, brush coating, etc. Additionally it offers defoaming properties.

PAT-ADD SU 4 is also used for water-based industrial paint to decrease foam formation; furthermore it enhances flow and levelling.

An other application is in water-based wood coatings, where it solves foam, levelling or adhesion problems. Moreover it serves as an alternative to classical surfactants, in case water resistance if the coating needing further improvement.

Printing ink

PAT-ADD SU 4 (notably SU 4 P, E, PA) is successfully used in flexo ink and offset printing. It speeds up ink penetration into the substrate such as paper and wetting onto PET. Furthermore, it acts as a defoamer.



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In pen inks PAT-ADD SU 4 (for instance SU 4 P) is used as a dispersing agent and viscosity stabiliser. The excellent dynamic wetting ability helps to keep the writing smooth. Furthermore, it is used for its defoaming properties.

The main application is as an interfacial tension reducer in high-speed printing processes. Using PAT-ADD S 4 typically improves the printing quality, thanks to the high dynamic surface tension reduction characteristics.

Additionally, it is used in fountain solutions: PAT-ADD SU 4 reduces the risk of emulsifying and foaming of fountain solution.

Various applications:

PAT-ADD SU 4 shows excellent wetting properties in ***hot melt pressure sensitive adhesives*** for instance if applied on plastic.

Leather chemicals: as water based leather chemicals require good wetting properties, especially dynamic wetting. PAT-ADD SU 4 is successfully used in this application, including in leather finishes, shoe polishes etc.

DOSAGE AND ADDITION:

The optimal amount of PAT-ADD SU 4 to be used is system and application related, but is typically in the range between 0.1% - 2% active matter by weight of the total formula.

The optimum concentration to be used depends on the individual requirements and conditions and is advised to be determined experimentally.

For information on handling and safety please refer to the information from the Material Safety Data Sheet