



Excellent Defoamer to Enhance Coating Performance

SANYO
PRODUCT
TOPICS

Defoamer for Water-based Architectural Coatings 'SN-DEFOAMER 395'
(SAN NOPCO LIMITED)

In building construction and maintenance, exterior walls are often coated not only to improve aesthetics but also to protect the underlying structure.

However, foam formation during coating application can mar the appearance and reduce the protective properties of the coating.

This is where defoamers come into play. SAN NOPCO's advanced defoamers go beyond traditional defoaming capabilities. They are specifically engineered to enhance the quality and durability of exterior coatings, providing a smooth, uniform application that maintains the intended protective layer without compromising stain resistance.

Controlling Foam to Maintain Aesthetic and Protective Qualities

Architectural coatings serve two main purposes: enhancing a building's appearance with custom colors and providing a protective layer.

However, one common challenge during the application is foam generation. If left unchecked, foam can disrupt the smooth finish of coatings and compromise their protective effectiveness by reducing adhesion and overall durability.

In other words, eliminating foam can largely address these challenges. To prevent foaming in coatings, formulators often incorporate additives such as dispersants and wetting agents to minimize foam generation from the outset, and defoamers are used to effectively eliminate any residual foam.

However, defoamers can sometimes introduce their own set of challenges. For instance, a phenomenon known as "cissing", may occur, where surrounding areas of the defoamer are repelled, causing small depressions in the surface, and

they can also impact the gloss level of the final coating, potentially diminishing its aesthetic quality. To address these issues, defoamers are expected to be designed with advanced properties that mitigate such drawbacks.

Defoamers Work by Penetrating through the Foam Film

Defoamers are formulated with hydrophobic liquids that have low surface tension, such as mineral oils or silicone oils, which disperse in the liquid and break through the foam film. This process effectively collapses the foam, allowing coatings to dry smoothly and uniformly.

There are two main categories of coatings—water-based and solvent-based—each requiring specific types of defoamers. For water-based coatings, mineral oil-based, silicone-based, and polyether-based defoamers are frequently used, whereas solvent-based coatings often rely on silicone-based or acrylic polymer defoamers. Because certain defoamer ingredients can reduce gloss, ingredient selection must be carefully tailored to match the desired finish, whether glossy or matte, ensuring that each formulation optimally balances performance and appearance.

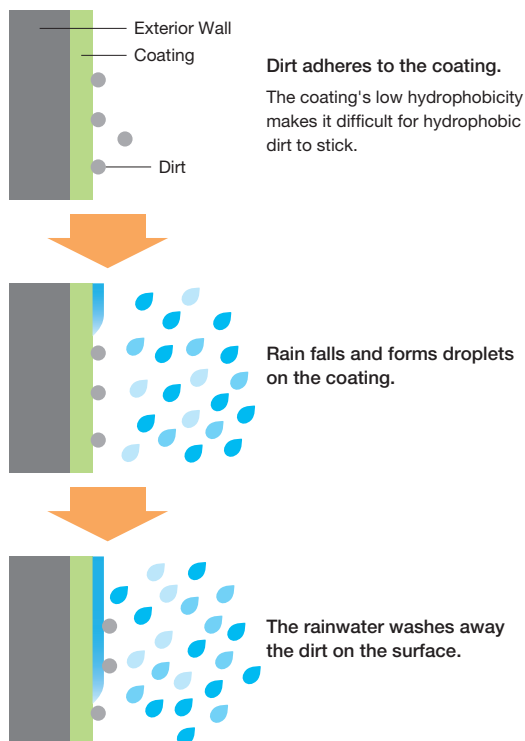
"SN-DEFOAMER 395": Balancing Defoaming Performance with Stain Resistance in Coatings

Founded in 1966 as a joint venture between Nopco Chemical Company (USA) and Sanyo Chemical Industries, Ltd., SAN NOPCO LIMITED has developed a diverse portfolio of defoamers by integrating NOPCO's defoaming expertise with Sanyo's surfactant technology. In addition to standard mineral oil-based defoamers, SAN NOPCO offers silicone-based, vegetable oil-based, and other types to meet diverse customer needs.

Among these, "SN-DEFOAMER 395" is a polyether-based product launched in 2011.

Defoamers often rely on highly hydrophobic ingredients, such as silicone compounds, due to their low surface tension, which enhances foam-breaking properties. However, in exterior wall applications, the high hydrophobicity of silicone-based defoamers can attract airborne contami-

■ Mechanism of Self-Cleaning (SAN NOPCO Estimate)





nants, leading to unwanted build-up that rain alone may not easily remove. To address this (maintain self-cleaning properties) in the coating, it's essential to balance the defoamer's hydrophobicity—creating a more moderate hydrophobic balance that supports effective defoaming while reducing contamination on the coating surface.

“SN-DEFOAMER 395” uses polyether to fine-tune the balance between hydrophobicity and surface tension. This allows it to achieve defoaming performance comparable to silicone-based agents, while maintaining the coating's low contamination properties. As a result, it provides greater long-lasting aesthetic quality and ease of cleaning compared to conventional silicone-based alternatives. Additionally, “SN-DEFOAMER 395” minimizes the risk of “cissing,” —a common issue with silicone-based defoamers—making it an ideal solution for achieving high-quality, durable coatings that maintain both the aesthetic and functional standards required in architectural applications.

Adapting to the Diversifying Performance of Coatings

As the construction industry shifts from solvent-

based to water-based coatings to address odor and environmental concerns, architectural coatings have evolved to include various additional functionalities. These modern coatings now feature low-VOC formulations to reduce volatile organic compound emissions, enhanced resistance to environmental factors such as rain, wind, and UV exposure, and heat-reflective properties for thermal insulation. This growing complexity in coating formulations requires defoamers that complement these advanced functions.

As a result, defoamers must be designed to address these issues comprehensively. SAN NOPCO continues to develop additives that align with the advanced functionality of these resins while also considering environmentally responsible formulations.

In response to increasing demand for high-performance coatings, “SN-DEFOAMER 395” is now available in markets such as China, Southeast Asia, and India, where there is a strong demand for premium coating products. With plans for further expansion, particularly in India, SAN NOPCO aims to bring this innovative defoamer to a broader global market.

“SN-DEFOAMER 395” contributes to Sustainable Development Goal (SDG) 11, “Sustainable Cities and Communities,” by supporting durable and visually appealing building exteriors. SAN NOPCO remains dedicated to developing advanced additives that evolve with the needs of the coating industry, continually enhancing their contribution to society.



■ SN-DEFOAMER 395 properties

Application	Water-based coatings for interior and exterior architectural applications
Composition	Polyether type
Feature	Silicone-free type. Ideal for water-based high-gloss paints with minimal cratering and gloss reduction. Exhibits excellent and long-lasting defoaming performance, especially effective on microfoams

Please contact our company's sales representative when handling our products.

Please also refer the “Safety Data Sheet” (SDS) in advance. It is the responsibility of the user to determine its suitability and safety for the intended use.

■ Low contamination test (comparison)



SN-DEFOAMER 395

Competitor's product
(silicone-based)