



Defoamer Powder

Revision version : 001

Date of revision : 15-Dec-2024

Prepared by : Adisakdi Ch.

Product Category	<ul style="list-style-type: none"> ● Defoamer Powder ● Defoaming Agent for Construction Chemicals
Application	<ul style="list-style-type: none"> ● Ready mixed concrete ● Self-leveling cement ● Self-compacting cement ● Water proofing cement ● Dry mixed mortar ● Tile grout ● Adhesive cement
Key Function(s)	<ul style="list-style-type: none"> ● Optimize flow, mixing, pouring, workability ● Reduce voids in construction structure during curing ● Maximize density physical properties of construction structure ● Reduce physical shrinkage and cracking of construction structure

Defoamers (or **antifoams**) are important additives used in the formulation of construction chemicals to control and reduce foam formation during the mixing, application, and curing processes. Foam can cause several problems in construction products such as cementitious mixtures, adhesives, paints, coatings, grouts, sealant, and mortars. Defoamers help improve the overall quality and performance of these products. In construction chemicals, the Defoamer in Powder form is considerably versatile and more applicable.

Why Foam is a Problem in Construction Chemicals:

1. **Reduced Workability:** Excessive foam can reduce the workability and spreadability of construction products, making them harder to apply smoothly.
2. **Air Entrapment:** Foam leads to the entrapment of air bubbles within the mix, which can reduce the density and strength of materials like concrete and mortar.
3. **Uneven Texture:** Foam can worsen the uniformity of products like paints, coatings, and grouts, leading to defects and uneven finishes.
4. **Poor Adhesion:** In adhesives and sealants, foam can negate with the bonding properties, reducing their performance.
5. **Excessive Bleeding:** Foam in cementitious products can lead to excessive bleeding (separation of water from the solid particles), which affects curing and final strength.

For more information of product



Website : www.s-unity.com

Defoamer Power in Construction Chemicals:

Defoamer power refers to the effectiveness of a defoamer in eliminating or controlling foam in a given formulation. The defoamer power of a product depends on several factors, including the type of defoamer used, its composition, and the specific application.

Stellar Unity has provided superior performance of Defoamer Powder which is highly suitable for construction chemicals. Below is Stellar Unity's Defoamer Powder, which is based on Polyether.

Polyether-Based Defoamers:

- **Composition:** Our Defoamer Powder is based on polyether compounds (e.g., fatty alcohols, ethoxylates) and are typically used in systems where silicone-based defoamers are not desirable.
- **Defoamer Power:** Polyether-based defoamers are effective at moderate concentrations and work well in water-based formulations, including paints, coatings, and emulsions.
- **Advantages:**
 - Cost-effective compared to silicone-based defoamers.
 - Compatible with water-based systems.
- **Disadvantages:**
 - May be less effective at higher foam volumes compared to silicone defoamers.

While in many end-applications, silicone based Defoamer can be applied and used, with the below explanation.

Silicone-Based Defoamers:

- **Composition:** These are typically made from polysiloxanes (silicone oils) and are the most commonly used defoamers in construction chemicals.
- **Defoamer Power:** Silicone-based defoamers have high defoaming efficiency even in small amounts. They are highly effective in reducing foam in cementitious materials, paints, coatings, and adhesives.
- **Advantages:**
 - Effective at low concentrations.
 - Work in a wide range of temperatures.
 - Compatible with a variety of water-based systems.
 - Long-lasting foam control.
- **Disadvantages:**
 - May lead to a slightly glossy finish in coatings.
 - Can be more expensive compared to other types of defoamers.

Factors Influencing Defoamer Power in Construction Chemicals: how to choose and how to evaluate?

- **Type of Foam:** The foam could be either stable foam (which is harder to break down) or unstable foam. Some defoamers are more effective against stable foam, while others work best with unstable foam.
- **Viscosity of the Mixture:** Thicker materials, such as highly viscous paints or mortar mixtures, may require more powerful defoamers or higher concentrations.
- **Concentration and Dosage:** The dosage of the defoamer is critical for achieving the desired effect. Higher dosages may be needed for highly foaming systems.
- **Water Chemistry:** The ionic nature of the water used in construction chemical formulations can impact the defoamer's effectiveness. Hard water or water with high mineral content may require specialized defoamers.
- **Curing Process:** Foam can also interfere with the curing process of cementitious materials. A good defoamer should not only break down foam but also allow proper and complete hydration and curing of the mix.

For more information of product



Website : www.s-unity.com