

# Additives for coatings

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### Additives in Coatings\*\*

Additives play a crucial role in enhancing the properties and performance of coatings, optimizing their appearance, durability, and functionality. These compounds are added to coating formulations to impart specific characteristics, such as:

#### **Additives in Emulsion Paint**

Emulsion paints, commonly used for interior and exterior applications, utilize a wide range of additives to achieve desired qualities:

- Wetting and dispersing agents improve the dispersion of pigments and other ingredients, preventing settling and agglomeration.
- Rheology modifiers control the flow and leveling properties of paint, preventing sagging, dripping, and brush marks.
- Coalescing agents promote the coalescence of polymer particles, forming a continuous film.
- Defoamers eliminate air bubbles that can compromise the finish's appearance and integrity.

#### **Additives for Flexibility and Component Separation**

Specific additives can provide flexibility in coatings while preventing component separation, ensuring adhesion and durability:

- Plasticizers enhance the coating's flexibility, reducing brittleness and preventing cracking.

- Thickening agents control the viscosity of the coating, preventing settling and ensuring component compatibility.

## **The Tego Range**

Tego is a leading manufacturer of additives for coatings, offering a comprehensive range of products that enhance performance and efficiency:

- Tego Foamex: Defoamers
- Tego Glide: Slip and leveling additives
- Tego Dispers: Dispersing agents
- Tego Wet: Wetting and leveling additives

## **Types of Additives**

Additives are broadly classified into three types based on their function:

- Rheology modifiers
- Surfactants
- Pigments

## **Five Types of Additives**

The Tego range of additives includes five distinct types that address specific aspects of coating performance:

- Defoamers
- Leveling agents
- Dispersants
- Wetting additives
- Slip additives

## **Best Preservative for Emulsions**

ISOthiazolinone compounds, such as Proxel GXL, are widely used as preservatives in emulsion paints to prevent microbial growth and maintain shelf stability.

## **Emulsifier Additives**

Emulsifier additives enable the formation of stable emulsions by reducing the interfacial tension between immiscible liquids, such as oil and water.

## **Surface Additives**

Surface additives modify the surface properties of coatings, improving adhesion, repellency, and durability:

- Slip additives reduce friction and enhance surface smoothness.
- Hydrophobic additives repel water, protecting the coating from moisture damage.
- Anti-fouling additives prevent the growth of marine organisms on coated surfaces.

## **Adding Additives to Paint**

Additives should be added to paint according to the manufacturer's instructions, ensuring proper mixing and compatibility.

## **Solvents for Coating Materials**

The choice of solvent for coating materials depends on factors such as the type of resin, additive, and desired application. Common solvents include:

- Water
- Mineral spirits
- Aliphatic hydrocarbons

## **Adhesion Properties of Coatings**

Adhesion properties of coatings are crucial for their ability to adhere to substrates. Additives can modify these properties, improving bonding and preventing delamination.

## **TEGO**

TEGO is a trademark of Evonik Industries AG, a leading manufacturer of coatings additives and other specialty chemicals.

### **Basque Range**

The Basque range of additives from TEGO is specifically designed for the needs of the paint and coatings industry in the Basque region of Spain.

### **Papikonda Range**

The Papikonda range of additives is a product of the Indian company Pidilite Industries Limited and is widely used in the paint and coatings industry in India.

### **Top 7 Additives to Avoid**

Certain additives are known for their potential adverse effects on health and the environment, including:

- Parabens
- Phthalates
- Triclosan
- Sulfates
- Formaldehyde
- Synthetic dyes
- Artificial fragrances

### **Most Popular Additives**

Some of the most popular additives used in coatings include:

- Titanium dioxide (pigment)
- Calcium carbonate (pigment)
- Silica (thickening agent)
- Rheology modifiers
- Defoamers

## Two Most Common Additives

The two most common types of additives used in coatings are:

- Pigments
- Rheology modifiers

## Four Types of Additives

Additives can be classified into four main types:

- Functional additives (e.g., pigments, plasticizers)
- Performance additives (e.g., rheology modifiers, defoamers)
- Special-effect additives (e.g., anti-fouling additives, UV absorbers)
- Biocides (e.g., preservatives)

## Seven Types of Additive Manufacturing

Additive manufacturing, also known as 3D printing, utilizes various techniques to create three-dimensional objects from digital models, including:

- Fused deposition modeling (FDM)
- Stereolithography (SLA)
- Selective laser sintering (SLS)
- Direct metal laser sintering (DMLS)
- PolyJet modeling
- Laminated object manufacturing (LOM)
- Digital light processing (DLP)

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