

Polymer Add (Thailand) Co.,Ltd.

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DICYCLOHEXYLAMMONIUM BENZOATE (MICRONIZED)

Functional Co-Stabiliser & Acid Scavenger for Plastics, Polymers & Rubber Compounds

1. Product Identification

Chemical Name: Dicyclohexylammonium Benzoate

CAS No.: 31106-44-6

Physical Form: Micronized free-flowing powder

Typical Appearance: White to off-white powder

Softening Range: 145 – 155 °C

Dicyclohexylammonium Benzoate (Micronized) is an organic benzoate salt used as a **secondary stabiliser and acid scavenger** in polymer and rubber formulations. In micronized form, it provides faster activation, uniform dispersion, and improved processing consistency at low dosage levels.

2. Functional Role in Polymer & Rubber Systems

Dicyclohexylammonium Benzoate functions primarily as:

- Acid scavenger for neutralising acidic by-products generated during processing
- Co-stabiliser supporting primary metal-free or hybrid stabiliser systems
- Processing support additive improving stability during melt processing and compounding

Its organic nature and controlled softening range allow effective performance without contributing to excessive volatility, plate-out, or incompatibility with polymer matrices.

3. Use in Plastics & Polymer Compounding

3.1 PVC Compounds (Rigid & Semi-Rigid)

In PVC formulations, Dicyclohexylammonium Benzoate (Micronized) is commonly used as a secondary stabiliser component alongside calcium-zinc or other lead-free stabiliser systems.

Key benefits in PVC:

- Neutralises acidic degradation products formed during PVC processing
- Supports colour stability and thermal endurance
- Enhances stabiliser efficiency at reduced metal soap dosage
- Performs well in dry blends, masterbatches, and pelletised stabiliser systems

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Typical applications:

- Rigid PVC profiles and sheets
- Semi-rigid PVC compounds
- Calendered PVC formulations
- PVC flooring and coated fabrics (supporting role)

3.2 Polyolefins & Engineering Polymers

Although primarily associated with PVC systems, micronized Dicyclohexylammonium Benzoate can also be used in **selected thermoplastic formulations** where acid neutralisation or stabiliser support is required.

Applicable polymer systems include:

- Polyolefin compounds with acidic additive packages
- Specialty masterbatches containing acidic pigments or fillers
- Polymer blends requiring controlled acid scavenging during melt processing

In these systems, micronization ensures rapid dispersion and consistent performance without adversely affecting melt flow or surface finish.

4. Use in Rubber Compounding

4.1 Elastomer Processing & Vulcanisation Systems

In rubber formulations, Dicyclohexylammonium Benzoate (Micronized) is used as a functional auxiliary additive, supporting processing stability and compound cleanliness.

Benefits in rubber compounds:

- Neutralises acidic residues from fillers, accelerators, or processing aids
- Improves compound stability during mixing and curing
- Supports uniform dispersion in high-shear internal mixers
- Contributes to consistent cure behaviour in selected formulations

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Typical rubber applications:

- Industrial rubber goods
- Technical rubber compounds
- Seals, gaskets, and molded rubber parts

Its controlled thermal behaviour makes it compatible with standard rubber processing temperatures.

5. Importance of Micronized Form

Micronization significantly improves the functional performance of Dicyclohexylammonium Benzoate across all polymer and rubber applications.

Advantages of micronized grade:

- Faster and more uniform dispersion
- Reduced dosage variability
- Improved interaction with stabiliser and filler systems
- Enhanced processing consistency in both dry blending and melt compounding

Micronized material is especially preferred in pre-blended stabiliser systems, masterbatches, and high-throughput production environments.

6. Processing & Incorporation

Dicyclohexylammonium Benzoate (Micronized) can be incorporated through:

- Dry blending with polymers or rubber compounds
- Pre-blended stabiliser packages
- Masterbatch or additive concentrate systems

Typical dosage depends on formulation design and performance requirements and is optimised in conjunction with the primary stabiliser system.

7. Regulatory & Compliance Overview

- Supplied for industrial use
- Suitable for lead-free stabiliser systems
- Regulatory and compliance documentation available upon request

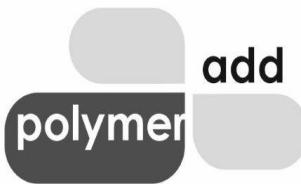
(Users should verify compliance with applicable local and international regulations for their specific end use.)

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8. Summary

Dicyclohexylammonium Benzoate (Micronized) is a versatile co-stabiliser and acid scavenger used across plastics, polymers, and rubber compounds. Its micronized form ensures efficient dispersion, stable processing behaviour, and reliable performance in modern formulations, particularly where metal-free or hybrid stabiliser systems are employed.

Disclaimer

This article is intended for technical and informational purposes only. Performance depends on formulation design, processing conditions, and end-use requirements. Users should conduct appropriate trials to confirm suitability for their application.