Product Technical Guide: HOPCP® Composite Polymers Carriers

rev. 1 en (13-09-2024)

Overview

HOPCP Technologies develops high-performance composite polymers designed for innovative applications in fragrance delivery, odor neutralization, and biocides. These advanced polymers function as absorbent matrices, encapsulating various additives to provide effective and customized solutions for multiple industries.

Key Markets and Applications

HOPCP Technologies' high-performance polymers are applied in:
- Automotive
- Hospitality and ambient scenting
- Industrial and institutional hygiene
- Publishing and merchandising
- Agriculture and medical products
- Wires and cables
- Packaging films
- Pipes
- Foams
- General molded products
- Masterbatches

Material Compatibility

Our HOPCP® composites are compatible with a wide range of polymers: LDPE, LLDPE, HDPE, PP, EVA, EBA, POE, PLA, PS, SBC, etc., allowing adaptation to diverse industrial applications. Additionally, we offer customization to design materials tailored to specific technical requirements, ensuring optimal performance for every project.

HOPCP® LDPE, LLDPE, HDPE, PP, EVA, EBA, POE, PLA, PS, SBC

Compatible Additives

HOPCP Technologies' composite polymers can incorporate additives such as:
- Custom fragrances
- Antimicrobial and biocidal agents
- Odor neutralizers
- Slip agent
- Antifog additive
- Antimicrobial
- Crosslinker
- Flame retardant
- Antioxidant
- Antistatic agents
- Lubricants
- Mold release agents
- Plasticizers
- Scratch resistance agents
- Reactive agents (silanes, peroxides, TAC, TAIC, TMPTMA)
- Water, water based dispersions, salt solutions

Advantages of HOPCP® Composites

- **Optimized porosity:** Ability to absorb and release additives in a controlled manner. **HOPCP**® polymers act like sponges (free-flowing granules) capable of absorbing different types of additives into their porous structure.
- **Structural stability:** Designed to maintain integrity under diverse conditions.
- **Wide compatibility:** Adaptable to liquids and solids of different polarities.
- **Sustainable production:** No use of chemical blowing agents, ensuring low environmental impact processes.

Requirements for Additive Loading

- **Liquid additives:** Can be loaded at room temperature..
- **Solid or paste additives:** Require moderate heating, avoiding temperatures that could compromise the polymer structure.
- **Viscous additives:** Can be diluted with heat or suitable solvents to facilitate absorption.

Technical Recommendations

The use of high-intensity mixers is essential to preserve the porosity of the polymers and ensure uniform additive distribution. Absorption varies depending on the additive's viscosity, with loading times ranging from 30 minutes to 72 hours.

Innovative Technologies

HOPCP Technologies stands out for its focus on innovation:
- Biodegradable and compostable materials.
- Smart polymers for advanced applications.
- Interpenetrating polymer networks (IPN) for optimized performance
- Use of renewable energy in production.

Business Model

Our philosophy combines cutting-edge technology with a personalized approach. Each product is designed to meet the specific needs of our clients, supported by a robust R&D team and sustainable production processes.