



# DOW CORNING® MB50-314 Masterbatch

## FEATURES

- Imparts processing improvements and modified surface characteristics

## BENEFITS

At 0.2% to 2% masterbatch

- Reduced melt fracture
- Better mold fill and release
- Lower extruder torque
- Reduced warp

At 2% to 10% masterbatch

- Enhanced lubricity
- Lower coefficient of friction
- Improved mar and scratch resistance

## COMPOSITION

- Free flowing solid pellets

## Ultra-high molecular weight functionalized siloxane polymer dispersed in high density polyethylene

### APPLICATIONS

- Additive in polyethylene compatible systems.

### TYPICAL PROPERTIES

Specification writers: These values are not intended for use in preparing specifications. Please contact your local Dow Corning sales representative prior to writing specifications on this product.

Property	Unit	Value
Appearance		Off-white pellets
Siloxane content	%	50
Organic resin		High density polyethylene
Suggested use level	%	0.2% to 10%

### DESCRIPTION

DOW CORNING MB50-314 Masterbatch is a pelletized formulation containing 50% of a functionalized ultra-high molecular weight (UHMW) siloxane polymer. It is designed to be used as additive in resin compatible systems to improve processing and modify surface characteristics.

Silicone-based plastic additives have been used in the plastics industry for several years to improve the mold release and flow of thermoplastics. They are effective in this role, although until now some difficulties have been experienced in the accurate incorporation of low-viscosity liquids into thermoplastic melts without use of specialized equipment.

The DOW CORNING® MB Series Masterbatches address these problems by supplying a high concentration of an ultra-high molecular weight

(UHMW) siloxane as a dispersion in a dry pellet form in a variety of thermoplastics.

The siloxane is finely dispersed in the thermoplastic matrix as the discrete or discontinuous phase at an average particle size of less than 5 microns.

### BENEFITS

DOW CORNING MB50-314 Masterbatch offers a patented surface segregation functionality that facilitates a higher concentration of the siloxane toward the surface of a fabricated part, thus providing improved surface benefits. Siloxane moves to the surface only when the thermoplastic is in the melt phase, remaining in discrete domains in solidified thermoplastic, unlike low molecular weight fluids that migrate. Lower levels of additive are required for surface modification because more is utilized at the surface, rather than being trapped internally.

The functionalized siloxane has unique advantages over standard polydimethylsiloxane (PDMS). The UHMW siloxane demonstrates superior slip performance in polyolefin films and, because the functional groups provide attraction to the metal surface, metal fracture is reduced during polymer processing.

Because of the coefficient of friction (COF) stability, immediate slip measurement is possible. Moreover, the COF remains consistent at high line speeds and during hot packaging applications that generate high film surface temperatures on form-fill-seal equipment.

When added to resin compatible systems at 0.2-2% siloxane, this product offers reduced melt fracture, better mold filling, lower extruder torque, internal mold lubrication, mold release and reduced warpage of the molded part.

At higher siloxane loading levels, 2-10% siloxane, enhanced surface properties are expected, including enhanced lubricity and slip, lower coefficient of friction and improved mar resistance.

## **FOOD CONTACT**

DOW CORNING MB50-314 Masterbatch is suitable for use as a slip or release agent in the production of the basic polymer or finished food contact article in compliance with US FDA regulation 21 CFR 177.1520. The olefin polymer portion of DOW CORNING MB50-314 Masterbatch complies with 177.1520(c)3 and the siloxane portion complies with 181.28.

This product may comply with European requirements concerning its use in contact with foodstuffs. The specific regulation(s) this product is compliant with are stated in the 'Food Regulatory Profile'. This document is available from your local Dow Corning representative.

## **HOW TO USE**

DOW CORNING MB50-314 Masterbatch may be processed at the same conditions as the thermoplastics

on which it is based. Sufficient DOW CORNING MB50-314 Masterbatch should be blended with virgin polymer pellets to give the desired siloxane level in the final product. DOW CORNING MB50-314 Masterbatch can be added during compounding in an extruder or dry blended at the feed hopper during injection molding, profile/sheet extrusion or other conventional thermoplastic processes.

## **HANDLING PRECAUTIONS**

PRODUCT SAFETY INFORMATION REQUIRED FOR SAFE USE IS NOT INCLUDED. BEFORE HANDLING, READ PRODUCT AND SAFETY DATA SHEETS AND CONTAINER LABELS FOR SAFE USE, PHYSICAL AND HEALTH HAZARD INFORMATION. THE SAFETY DATA SHEET IS AVAILABLE FROM YOUR LOCAL DOW CORNING SALES REPRESENTATIVE.

## **USABLE LIFE AND STORAGE**

When stored at or below 35°C (95°F) in the original unopened containers, this product has a usable life of 48 months from the date of production.

## **PACKAGING**

This product is available in a variety of container sizes. Contact your local Dow Corning sales representative for information about container sizes available in your area.

## **LIMITATIONS**

This product is neither tested nor represented as suitable for medical or pharmaceutical uses.

## **HEALTH AND ENVIRONMENTAL INFORMATION**

To support customers in their product safety needs, Dow Corning has an extensive Product Stewardship organization and a team of Health, Environment and Regulatory Affairs specialists available in each area.

For further information, please consult your local Dow Corning

representative.

## **WARRANTY INFORMATION - PLEASE READ CAREFULLY**

The information contained herein is offered in good faith and is believed to be accurate. However, because conditions and methods of use of our products are beyond our control, this information should not be used in substitution for customer's tests to ensure that Dow Corning's products are safe, effective, and fully satisfactory for the intended end use. Dow Corning's sole warranty is that the product will meet the Dow Corning sales specifications in effect at the time of shipment. Your exclusive remedy for breach of such warranty is limited to refund of purchase price or replacement of any product shown to be other than as warranted. Dow Corning specifically disclaims any other express or implied warranty of fitness for a particular purpose or merchantability. Unless Dow Corning provides you with a specific, duly signed endorsement of fitness for use, Dow Corning disclaims liability for any incidental or consequential damages. Suggestions of use shall not be taken as inducements to infringe any patent.