

Dow Corning[®] MB50-008 Masterbatch

FEATURES & BENEFITS

- Imparts processing improvements and modified surface characteristics
- Improved throughput
- Reduced energy consumption
- Enhanced scratch resistance
- Improved slip properties
- Enhanced stability vs. traditional processing aids and lubricants

COMPOSITION

- Free flowing solid pellets

Ultra-high molecular weight siloxane polymer dispersed in styrene-acrylonitrile carrier

APPLICATIONS

- Additive in styrene-acrylonitrile compatible systems

TYPICAL PROPERTIES

Specification Writers: These values are not intended for use in preparing specifications. Please contact your local Dow Corning sales office or your Global Dow Corning Connection before writing specifications on this product.

| Property | Unit | Result |
|---------------------|------|---------------------------------------|
| Appearance | | Off-white pellets |
| Siloxane content | % | 50 |
| Organic resin | | Styrene-acrylonitrile copolymer, MI 7 |
| Suggested use level | % | 0.2 to 10 |

DESCRIPTION

Dow Corning[®] MB50-008 Masterbatch is a pelletized formulation containing 50% of an ultra-high molecular weight (UHMW) siloxane polymer dispersed in styrene acrylonitrile (SAN) carrier. It is designed to be used as an additive in most styrenic compatible systems to impart benefits such as processing improvements and modification of surface characteristics.

Liquid siloxane plastic additives have been used for several years to improve the lubricity and flow of thermoplastics. They are effective in this role although some difficulties have been experienced in the incorporation of liquids into thermoplastic melts without the use of specialized equipment. It has also been difficult to produce masterbatches with greater than 20% liquid siloxane because of processing difficulty and bleed problems.

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.

BENEFITS

When added to SAN or similar thermoplastics at 0.2% to 2.0%, improved processing and flow of the resin is expected, including better mold filling, less extruder torque, internal lubrication, mold release and faster throughput. At higher addition levels, 2% to 10%, improved surface properties are expected, including lubricity, slip, lower coefficient of friction, and greater mar and abrasion resistance.

The *Dow Corning* MB Series Masterbatches are expected to give improved benefits compared to conventional lower molecular weight siloxane additives, e.g., less screw slippage, improved release, a lower coefficient of friction, fewer paint and printing problems, and a broader range of performance capabilities. The addition of 2% polydimethylsiloxane (PDMS) gives a significant reduction

in wear rate, as shown in Table 1. While this data was obtained with a lower molecular weight siloxane additive, similar results are expected when *Dow Corning* MB50-008 Masterbatch is added to styrenics (SAN, ABS, polystyrene). Additionally, use of ultra-high molecular weight siloxane additives give very little loss in paintability with a waterborne paint system (see Table 2).

FOOD CONTACT

Dow Corning MB50-008 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 181.32. The acrylonitrile copolymer portion of *Dow Corning* MB50-008 Masterbatch complies with 181.32 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 MB Series Masterbatches may be processed in the same way as the thermoplastics on which they are based. Sufficient *Dow Corning* MB50-008 Masterbatch should be blended with virgin polymer pellets to give the desired siloxane level in the final product. *Dow Corning* MB50-008 Masterbatch pellets can be added during compounding in a single screw extruder or added at the feed hopper during injection molding or extrusion.

**HANDLING
PRECAUTIONS
PRODUCT SAFETY
INFORMATION REQUIRED FOR
SAFE USE IS NOT INCLUDED IN
THIS DOCUMENT. BEFORE
HANDLING, READ PRODUCT**

**AND MATERIAL SAFETY DATA
SHEETS AND CONTAINER
LABELS FOR SAFE USE,
PHYSICAL AND HEALTH
HAZARD INFORMATION. THE
MATERIAL SAFETY DATA
SHEET IS AVAILABLE ON THE
DOW CORNING WEBSITE AT
DOWCORNING.COM, OR FROM
YOUR DOW CORNING SALES
APPLICATION ENGINEER, OR
DISTRIBUTOR, OR BY CALLING
DOW CORNING CUSTOMER
SERVICE.**

USABLE LIFE AND STORAGE

When stored at or below 35°C (95°F) in the original unopened containers *Dow Corning* MB50-008 Masterbatch has a usable life of 48 months from the date of production.

PACKAGING INFORMATION

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 Product Safety and Regulatory Compliance (PS&RC) specialists available in each area.

For further information, please see our website, dowcorning.com or consult your local *Dow Corning* representative.

**LIMITED 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 our products are safe, effective, and fully satisfactory for the intended end use. Suggestions of use shall not be taken as inducements to infringe any patent.

Dow Corning's sole warranty is that our products will meet the 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.

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Table 1: Effect of siloxane on wear.

| Resin type | % Siloxane | Wear, mm/hr (15.2 m/min, 0.7 MPa) |
|-------------------|-------------------|--|
| Polystyrene | 0 | 10.20 |
| Polystyrene | 2 | 0.010 |
| ABS | 0 | 0.064 |
| ABS | 2 | 0.018 |

Table 2: Effect of siloxane on paintability.

| Formulation | Adhesion rating Method A | Adhesion rating Method B |
|------------------------------|-------------------------------------|-------------------------------------|
| 100% ABS | 5A | 5B |
| 99.5% ABS/0.5% UHMW siloxane | 5A | 5B |
| 97% ABS/3% UHMW siloxane | 4A | 4B |
| 95% ABS/5% UHMW siloxane | 4A | 4B |

Testing was performed by an outside test facility: ACT Laboratories, Inc.; top coat was Red Spot 296 WLE waterborne paint system.
Testing performed per ASTM D 3359. ASTM: American Society for Testing and Materials.