

# MULTIBASE™ AMB-12235 Masterbatch

Siloxane polymer with “anti-block” masterbatch



## Features & Benefits

- Low dynamic COF (example 0.3 COF in film against film in plastomer skin layer)
- Long-lasting slip performance
- Stable COF performance after high temperature ageing
- Easy dosing. Does not generate die build-up or gel deposition during extrusion

## Advantages

- Reduces friction to enable higher throughput and productivity from film extrusion to bag formation
- Delivers long-lasting stability to maintain slip performance over time and temperature
- Avoids quality issues by preventing migration of slip additive between film layers or into package contents
- Optimizes processing with smooth dosing and homogeneous dispersion
- Controls costs with lower loadings and use in only the outer layer of multi-layer film

## Composition

- Free flowing solid pellets

## Applications

Additive in polyethylene compatible systems.

## Typical properties

Specification Writers: These values are not intended for use in preparing specifications. Please contact your local representative before writing specifications on this product.

Property	Unit	Result
Appearance		Off-white pellets
Organic resin		LDPE
Specific gravity	g/cm <sup>3</sup>	0.95
Suggested use level	%	4w% to 6w%

## Description

MULTIBASE™ AMB-12235 Masterbatch is a pelletized formulation containing siloxane polymers and an antiblock agent dispersed in low density polyethylene (LDPE) blown film grade. It is designed to be used as an additive in polyethylene compatible systems to impart benefits such as processing improvements (ex: FFS: Form, fill and seal bagging process) and modification of surface characteristics (low coefficient of friction (COF)). This was developed especially to reach the best performance in plastomer skin layers in PE films.

High-speed, high-volume FFS packaging operations place stresses on LDPE film, including increased levels of surface friction. Reducing COF is critical to seamless throughput, high productivity and consistent quality.

MULTIBASE™ AMB-12235 Masterbatch provides exceptional slip performance while overcoming the drawbacks of organics – and controlling costs.

## Benefits

MULTIBASE™ AMB-12235 Masterbatch eliminates the migration issue of organics by retaining excellent COF reduction values for an extended period. This formulation also prevents migration of the slip additive between the film layers.

This does not affect the corona treated layer (opposite layer) when film is winding and helps maintain the film's printability overtime.

From a cost efficiency standpoint, MULTIBASE™ AMB-12235 Masterbatch offers several advantages.

First, it is effective at low loadings. Second, it can be incorporated only in the outer layer of multi-layer films (unlike organics, which are added to all layers), so less is needed. This provides a cost effective way to improve the film properties. Further, it is based on a standard LDPE to ensure homogeneity which optimizes the performance of the slip additive.

All properties were measured on a 3-layer PE blown film. The MULTIBASE™ AMB-12235 Masterbatch was introduced in the plastomer (density 0.902) skin layer only.

Figure 1 shows the improvement of dynamic COF film/film up to 0.3 into PE blown film, reached at 6% loading of silicone additive. The dynamic COF film against steel at same loadings is 0.12.

**Figure 1**

Dynamic COF Film/Film versus MULTIBASE™ AMB-12235 Masterbatch Content, %.

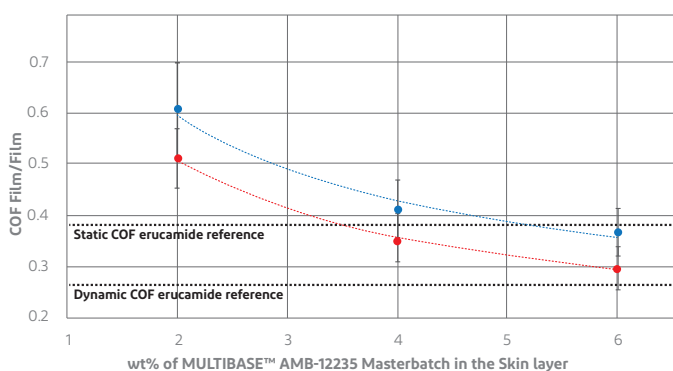


Figure 2 demonstrates consistency of COF after 2 months ageing at 45°C. When using organics, the COF can increase to 200%, but with MULTIBASE™ AMB-12235 Masterbatch, COF remains stable.

**Figure 2**

Dynamic COF Film/Metal Before and After Ageing 2 Months at 45°C.

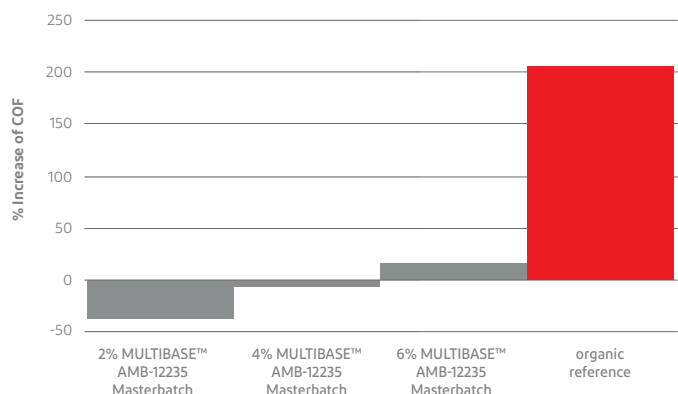
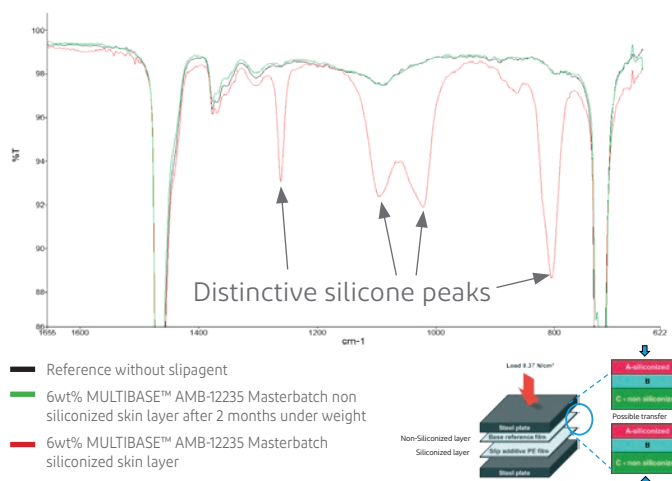


Figure 3 shows the infrared ATR film surface analysis of PE blown film with 6w% MULTIBASE™ AMB-12235 Masterbatch pressed against non-silicone treated film. It does not show distinctive peaks of silicone on non-treated film. That indicates that there was no silicone transfer from film to film after 2 months at room temperature.

The same analysis with similar results was done on a film put in an oven at 60°C. This demonstrates that silicone does not migrate through layers.

**Figure 3**

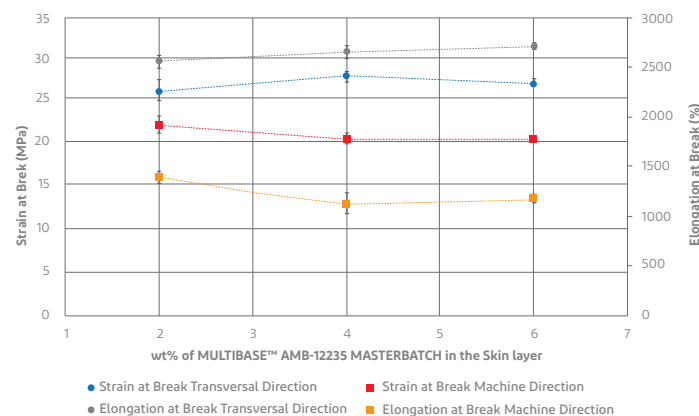
Infrared ATR film Surface Analysis of a Film Containing 6w% MULTIBASE™ AMB-12235 Masterbatch Pressed Against Non-silicone Treated Film.



Figures 4 and 5 show that the mechanical properties of the films are not affected by the addition of MULTIBASE™ AMB-12235 Masterbatch.

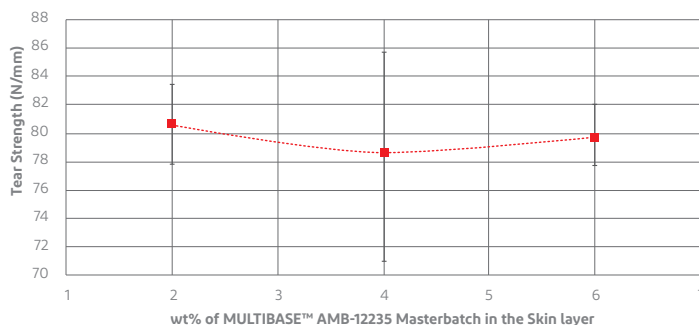
**Figure 4**

Tensile Properties as a Function of MULTIBASE™ AMB-12235 Masterbatch Content in the Skin Layer



**Figure 5**

Tear Strength in Transversal Direction as a Function of MULTIBASE™ AMB-12235 Masterbatch Content in the Skin Layer.



## How to use

MULTIBASE™ MB Series Masterbatches may be processed in the same way as the thermoplastics on which they are based. Sufficient MULTIBASE™ AMB-12235 Masterbatch should be blended with virgin polymer pellets to give the desired siloxane level in the final product. MULTIBASE™ AMB-12235 Masterbatch pellets can be added during compounding in a single screw extruder or added at the feed hopper during extrusion blown film process or injection molding

## Food contact

For specific food contact regulation(s) contact your local representative.

## 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 DUPONT WEBSITE AT DUPONT.COM, OR FROM YOUR DUPONT SALES APPLICATION ENGINEER, OR DISTRIBUTOR, OR BY CALLING DUPONT CUSTOMER SERVICE.

## Usable life and storage

When stored inside warehouse at or below 35°C (95°F) in the original unopened containers MULTIBASE™ AMB-12235 Masterbatch has a shelf life of 48 months from the date of production.

## Packaging information

This product is available in a variety of container sizes. Contact your local DuPont 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, DuPont 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, [dupont.com](http://dupont.com) or consult your local DuPont representative.

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