

# MULTIBASE™ Silicone-Based Additives for Polyamide Compounds

Reduce coefficient of friction and improve wear

Do you need to improve the slip, wear and processing performance of polyamide (PA) resins and glass fiber-reinforced PA compounds for highly demanding applications? To meet your specific needs, DuPont offers a silicone-based additive – MULTIBASE™ HMB-1103 Masterbatch – which provide a reduced coefficient of friction (COF) and improved wear resistance at lower loadings than polytetrafluoroethylene (PTFE) while retaining important mechanical properties. In contrast to PTFE, this product avoid the use of fluorine, a potential medium- and long-term toxicity concern. It also aid in processing efficiency and improve material injectability.

A second product, MULTIBASE™ MB50-011 Masterbatch, helps you deliver scratch resistance while enhancing surface quality. It also helps to improve polyamide compounds' injectability.

## MULTIBASE™ HMB-1103 Masterbatch

This new-generation tribology modifier for PA is designed for demanding applications that require long-term COF reduction and good wear performance, such as bearings and gears, window lifting systems, housings, roller shutter modules, household appliances and automotive seat adjustment systems.

### Highlights:

- Provides COF and wear performance similar that of PTFE at very low loadings (1.5-3.5 wt% vs. 15-20 wt% PTFE)
- Retains tensile and impact performance
- Maintains material density
- Improves material injectability
- Improves processing performance

Compared to powdered PTFE additives, MULTIBASE™ HMB-1103 Masterbatch pellets are easier to handle and process. They do not increase the density of PA compounds and provide a fluorine-free tribology solution.



### Benefits

- High slip performance at low loadings
- Fluoro-free mar resistance
- Retention of mechanical properties
- Reduced torque
- Reduce processing temperature
- Improve productivity
- Improved surface properties
- Ease of handling

### Applications

- Automotive components
- Electrical and electronics
- Consumer goods
- Household appliances

	Av Dynamic COF 25N	Av Dynamic COF 50N	Wear 25N (depth in um)	Wear 50N (depth in um)
No additive	0.55	0.52	17.5	80
PTFE	0.08	0.11	0	0
<b>MULTIBASE™ HMB-1103 Masterbatch</b>	<b>0.13</b>	<b>0.18</b>	<b>0</b>	<b>4</b>

Table 1: MULTIBASE™ HMB-1103 at 3.3% delivers comparable wear resistance to perfluorinated additives and same slip performances as 15wt% PTFE.



## MULTIBASE™ MB50-011 Masterbatch

For enhanced anti-scratch performance in glass fiber-reinforced PA compounds, MULTIBASE™ MB50-011 Masterbatch is the material of choice. At loadings of 1.5-2.0 wt%, this masterbatch delivers improved surface properties and resistance to scratching. MULTIBASE™ MB50-011 Masterbatch also provides some COF reduction benefits, more so in neat PA.

## Extend Properties, Enhance Processing, Reinforce Materials.

Combining an industry-leading portfolio of silicone-based additives and masterbatches -plus deep experience in serving the industries that use them -we can help you capture greater efficiencies in production while delivering more performance, durability and quality to your end-users.

To learn more about our wide range of plastics, visit [www.dupont.com/multibase](http://www.dupont.com/multibase) and contact us if you have any questions.

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