

## PEarlene™ SiPC MB01 Silicone

### Description

PEarlene silicone is a gum-containing master batch for the compounding and/or extruding of certain plastics, copolymers and elastomeric formulations that can help provide improved processability (extrusion rate, mold fill and power consumption) and/or performance (izod impact resistance, especially at low temperatures).

The PEarlene silicone line is a family of functional master batches containing high levels of ultra-high-molecularweight polysiloxane which are melt compounded into a thermoplastic polymer. This product line consists of several silicone gum masterbatches based on PE, PP and PC.

### Key Features and Typical Benefits

- Improved lubricity of fabricated part
- Improved izod impact resistance especially at low temperatures
- Increased fabrication line throughput
- Reduced extrusion drive load
- Reduced extruder head pressure
- Reduced energy usage in processing

### Typical Physical Properties

|                          |                      |
|--------------------------|----------------------|
| Form Uniform             | Free flowing pellets |
| Color                    | Off-white            |
| Density (gm/cc) at 20 °C | 1.20 - 1.22          |
| MFI (230 °C at 2.16 Kg)  | 2-4g / 10 min        |

|                     |                      |
|---------------------|----------------------|
| Siloxane Content, % | 30                   |
| Odor                | Essentially odorless |
| Solubility in Water | Insoluble            |
| Melting Point, °C   | 270                  |

Typical properties are average data and are not to be used as or to develop specifications.

### **Polymer Modification:**

PEarlene SiPC MB-01 silicone (PC: polycarbonate carrier)

These masterbatches modify the rheological characteristics of the resin or compound, which can allow for increased throughputs in production as well as a reduction in the drive torque and machine head pressure, and at increased levels can improve the surface appearance of the fabricated part and lower the coefficient of friction (CoF) on finished parts. It can also noticeably improve fine molded details and mold release. Typical usage levels are from 0.2% to 1.6% by weight of silicon gum.

Select the carrier compatible with your formulation or check with Momentive Performance Materials for detailed information.

### **Potential Applications**

PEarlene silicone gum-containing masterbatches are free-flowing, dry, pelleted materials and excellent candidates to consider for compounding operations and extrusion-based fabrication processes including:

- Wire and cable extrusion,
- Pipe extrusion,
- Injection and compression molding,
- Blown and cast film,
- Foaming operations (closed and open cell as well as structural); thermoforming.

These masterbatches have shown to be effective in polyolefins (PP, PE and their copolymers) as well as EVA, nylon and PC. The product is manufactured to not contain any halogens.

Improper mixing or the use of the wrong type or wrong level of additive will not result in the expected performance enhancements.

### **General Considerations for Use**

Generally, PEarlene silicone gum masterbatches can be added to the resin or compound during the final melt extrusion or fabrication step, and typically processed on conventional equipment under the same processing conditions recommended for the base resins and/or compounds. While no special conditions or process modifications are generally required, PEarlene silicone gum masterbatches must be melt processed under conditions that will assure a high level of homogeneity in the final product.

At addition levels between 0.2% to 1.6% of PEarlene silicone masterbatches by weight of silicone gum, the resin and/or compound will typically be rheologically modified, which can enable better mold flow and fill, replication of fine mold details with more precision, and easier part release without the need for a separate mold release agent.

The addition of PEarlene silicone gum masterbatches typically will improve the coefficient of friction (CoF) of the final part, enhance the surface finish, abrasion resistance, and mar resistance of the fabricated part and render the final part less subject to warpage. Generally, the tensile and elongation properties of the final products will only be slightly affected by the PEarlene silicone gum masterbatches, even at the highest recommended level of addition, and the impact resistance will be improved especially at low temperatures. The product is essentially odorless and colorless (though some grades are off-white), and will normally not affect the odor or color of the material it is added to, also after final fabrication.

Process benefits may include an increase in throughput and a reduction in machine torque and pressure in screw slippage, potentially lowering manufacturing variable costs. The process may also benefit from less frequent shut downs for screw, screen, die and tooling cleanup, as well as less effort being required for the cleaning of machine parts.

Please note that it might be necessary to increase the extrusion speed and reduce machine temperature settings to achieve the full benefit of the additional throughput

when using these masterbatches.

Compounds containing PEarlene silicone masterbatches may be available from your resin or compound supplier.

### **Patent Status**

Nothing contained herein shall be construed to imply the nonexistence of any relevant patents or to constitute the permission, inducement or recommendation to practice any invention covered by any patent, without authority from the owner of the patent.

### **Product Safety, Handling and Storage**

Customers should review the latest Safety Data Sheet (SDS) and label for product safety information, safe handling instructions, personal protective equipment if necessary, emergency service contact information, and any special storage conditions required for safety. Momentive Performance Materials (MPM) maintains an around-the-clock emergency service for its products. SDS are available at [www.momentive.com](http://www.momentive.com) or, upon request, from any MPM representative. For product storage and handling procedures to maintain the product quality within our stated specifications, please review Certificates of Analysis, which are available in the Order Center. Use of other materials in conjunction with MPM products (for example, primers) may require additional precautions. Please review and follow the safety information provided by the manufacturer of such other materials.

### **Limitations**

Customers must evaluate Momentive Performance Materials products and make their own determination as to fitness of use in their particular applications.

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