

## ShieldSys™ MX120 Anti-Stick Industrial Coating

### Description:

ShieldSys™ MX120 is a next-generation, permanent mold release coating designed to provide unmatched durability, anti-stick, and ease of release across a broad range of moldable substrates. ShieldSys™ MX120 uses a proprietary polysiloxane copolymer to generate a hard, lubricous coating on metallic, ceramic and plastic surfaces. Utilizing our exclusive crosslinking resin technology, ShieldSys™ MX120 coatings are chemically inert and extremely abrasion resistance making them ideal for continuous mold release scenarios such as rollers, high-throughput molds, large-complex mold geometries and numerous other applications. Properly applied, our product develops a durable, thin-film on surfaces typically between 10-20 µm. ShieldSys™ MX120 can also be used in numerous anti-stick applications and is resistant to temperatures up to 275 °C. ShieldSys™ MX120 is ideally paired with one of our ReleaSys™ Semi-Permanent release agents to greatly extended coating life, reduce build-up, and minimize reapplications. Benefits of this product include:

- Extremely Hard, Durable Thin-Film coating
- Exceptional Release and Anti-Stick Properties
- Ideal for continuous production, high throughput, and large mold configurations
- Provides unmatched lubricity and extremely low coefficient of friction
- Clean, Non-oily, Non-migrating

### Potential Applications:

ShieldSys™ MX120 is formulated to provide unmatched utility in compression, injection and transfer molding and other anti-stick/release applications:

- Complex Mold Configurations
- Large Molding Configurations
- Silo Liners
- Pipelines
- Baking Trays
- High-Throughput Molding
- Rollers and Embossing Tools
- Injection Molding Units
- Vulcanizing Molds
- Plastic Surfaces

### Recommended Application Procedure:

1. Clean surface thoroughly. Mechanical cleaning such as media blasting, followed by chemical cleaning, provides the best surface for application. Removal of all previous mold release agent and contamination is critical.
2. ShieldSys™ MX120 is moisture sensitive and should be handled properly. Whenever possible keep the cap on the original container. After opening, the product can be blanketed with nitrogen or argon to extend shelf life. Only dispense out the required amount of coating required to coat the intended substrate. Do not pour unused material back into the original container.
3. ShieldSys™ MX120 can be applied by hand wiping or dip application however it is ideally applied via spray application to a room temperature surface.

4. **ShieldSys™ MX120 should be agitated prior to use. Product will settle over time and proper dispersion of these solids is critical to the performance of the product**
5. **Hand wiping:** Lightly apply a single coat to room temperature surfaces. Application should be done with a lint-free, microfiber cloth. Do not overlap your passes over the mold. Work quickly to coat the mold, apply only the lightest of pressure to the surface. Do not buff the surface.
6. Allow the coating to dry for 30 minutes and apply a second coat.
7. See **Curing Procedure** for proper cure method
8. **Dip Application:** Dispense out only what is needed to coat the intended part into a clean, dry container.
9. Dip parts into the solution and retract slowly. Allow the coating to dry 30-40 minutes depending on room conditions or until the coating is tack-free.
10. The part can be dipped again if needed. If not see **Curing Procedure** for proper cure method.,
11. **Spray Application:** ShieldSys™ MX120 is ideally applied via spray application from a HVLP spray gun. Utilization of dry, oil-free air is critical to guarantee optimal performance and surface adhesion.
12. Application of light, even, and uniform coats to a room temperature substrate is critical. The coating must be applied as a wet, continuous coating and allowed to dry on the surface. Failure to do so will cause performance and durability issues.
13. Typically, a single coat with 50-75% overlap is sufficient, however if a second coat is desired, wait 30-40 minutes between coats.
14. Allow the coating to air dry for 30-40 minutes prior to performing the final heat cure.
15. **Curing Procedure:** ShieldSys™ MX120 requires heat curing to reach its optimal film properties, maximizing lubricity, durability, and anti-stick properties.
16. The coating needs to be heated to a minimum of 150 °C for 1 - 2 hours or 180-185 °C for 1 hour. Hotter and shorter cure programs can be used however this can lead to blistering and adhesion loss. The user should test for suitability.

**NOTE: Cure time should begin once the surface temperature of the coated substrate reaches the desired cure temperature.**



# Product Information

[www.miller-stephenson.com](http://www.miller-stephenson.com)

**Top-Coat:** ShieldSys™ MX120 provides exceptional release, anti-stick, and lubricity properties to surfaces. While the coating will performance exceptional well without any further modification, the maximal workable life, release ease and anti-stick properties can be improved upon if top coated with one of our ReleaSys™ Semi-Permanent coatings. For selecting the best top-coat, please contact our Technical Service Department.

## Physical Properties:

Primary Polymer:.....Reactive Polysiloxane Copolymer  
Appearance:.....Clear  
Odor:.....Aromatic  
Specific Gravity:.....0.81 g/mL @ 25°C  
Flash Point:.....-4.0 °C

## Storage and Handling:

ShieldSys™ MX120 should not be used at temperatures above 350 °C or near open flames. Chemical breakdown will occur which will result in the generation of toxic fumes. When spraying, avoid inhalation of mist and exposure to skin. Always wash hands after handling.

ShieldSys™ MX120 should be kept at 70-77°F in a dry, controlled air environment and away from direct contact with sunlight. Failure to store the product as recommended above may lead to deterioration in product performance. This product is sensitive to moisture and atmospheric humidity. Containers, once opened, should be used quickly or blanketed with dry air, nitrogen, or argon. Do not expose to freezing temperatures. Prior to use, container should be lightly agitated.

## Clean-up:

Uncured ShieldSys MX120 can be removed with aromatic, hydrocarbon, ketones, or glycol ethers. Removal of cured ShieldSys MX120 will require abrasion, typically with steel wool or media blasting.

## Shelf-Life

ShieldSys™ MX120 has a shelf life of 6 months from the date of shipment in an unopened container.

## ShieldSys™ and ReleaSys™ Product Line:

Miller-Stephenson's offers a selection of high performance, semi-permanent release systems to meet your mold process needs. All variants of the ShieldSys™ and ReleaSys™ Series will deliver higher productivity, lower rejection rates, and higher quality products.

**LIMITATION OF LIABILITY AND REMEDIES:** Manufacturer warrants that, at the time of shipment by the Manufacturer, this product is free from defect in material and manufacture. If the product is proved to be defective, the exclusive remedy, at Manufacturer's option, shall be refund of the purchase price or replacement of the defective product, provided written notice of the defect is given no later than one year after the date of shipment by the Manufacturer. Manufacturer shall not otherwise be liable for loss or damages whether direct, indirect, incidental or consequential, regardless of the legal theory asserted, including negligence and strict liability. **Manufacturer expressly disclaims all implied warranties, including the implied warranty of merchantability and the implied warranty of fitness for a particular purpose. There are no warranties which extend beyond the description on the face hereof.**

1683-10

For further technical information call 800.992.2424 or 203.743.4447

For product sales: CT 800.442.3424, CA 800.771.8161

[www.miller-stephenson.com](http://www.miller-stephenson.com)

Miller-Stephenson Logo, ShieldSys™ and ReleaSys™ are trademarks of Miller-Stephenson Chemical Company Inc