



PLASTICS RESEARCH LABORATORIES, INC.  
MOLD RELEASES & PROCESS ADDITIVES

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## Technical Data Sheet



# 840

### Product Description

External mold release: An air-drying reactive resin solution that cures to provide a durable semi-permanent coating. Permits multiple releases without transfer at both ambient and elevated temperatures.

### Composition

Proprietary resin solution comprising modified siloxane-based polymers which crosslink and form a release film upon evaporation of the solvent carrier.

### Handling

MOISTURE SENSITIVE. KEEP TIGHTLY SEALED.  
Minimize exposure to atmosphere.  
Do not return exposed material to can.  
Store above freezing and below 100°F/38°C.  
DO NOT DILUTE

### Features

Reduces scumming and build-up  
Fast curing  
Can be wipe or sprayed on  
No polishing required  
Highly durable coating  
HAPS free

### Uses

Especially for RTM and Closed Molding of thermoset resins where good gloss is required. Also suitable for natural + synthetic rubber + many polyurethane rigid foams and elastomers.

### Typical Properties

Effective Ingredients	<1%
Color	Clear
Specific Gravity	0.726 @25°C
Flash Point	<73°F / <23°C (C.O.C.)
Shelf Life	12 months in unopened/original container
Solvents	Aliphatic Hydrocarbon Blend

### New & Green FRP Molds:

Read AXEL publication FocusOn New & Green Molds.  
Apply a minimum of 2 coats of XTR sealer.

### Mold Preparation

Mold surfaces should be clean and free of previously used mold releases and other surface contaminants.

### Application Instructions

#### Hand Wiping

Apply with a clean, woven, lint free cloth, such as the Scott Shop Towels On A Roll®, Kimberly-Clark WorkHorse® rags or WypAll® wipes, or a heavy-duty plain white paper towel.

Wet the cloth with release until it is damp but not dripping. Wipe onto mold surface using smooth even strokes. Apply a thin, uniform coating and allow the release to evaporate. Do not overwork the area or continue to wipe. Simply wipe on, and allow to dry.

1) When working on a large surface area, apply to one section at a time, working from one end of the tool surface to the other. Natural bristle brushes and most foam paint applicators can also aid in smoothing out the coatings or working them into textured or hard to reach areas. When working with sprayers or brushes, avoid pooling the release in any one area.

2) 3-4 coats of release are recommended for a clean well-conditioned tool. New tools and repaired area should be handled with special care (see Focus On: New & Green Molds. At least 2 coats of XTR sealer are recommended for repaired molds).

3) Allow approximately 15 minutes for each coat of release to dry and cure before applying the next coat. Low ambient temperatures (below 70°F / 20°C) may necessitate longer cure times.

4) Always use a fresh, clean cloth for each coat of release. If streaking occurs, replace your cloth with a clean one. Also make sure that the cloth is not too saturated, as heavy applications of release can streak (see FAQ's Semi-Permanent Mold Releases & FRP Molds). Most streaks can be removed by waiting for the release to cure and then lightly buffing the surface with a clean, dry cloth.

5) 30 minutes cure time after the final coat is applied is generally adequate. Once again, the longer you wait, the better.

6) To maximize productivity, a break-in procedure can be beneficial. A good method is to apply a light re-wipe of release to the mold surface following the first pull, another after the third, and another after the fifth part. It is also a good idea to do more frequent touch ups on sheer edges, radius areas, and high wear sections. This will improve release performance and provide the best protection for your tool.

## Application Instructions

### Spraying

1) Immediately before molding, make sure that the mold is dust free. Spray 840 using a High Volume Low Pressure type spray gun, such as those by Binks, AccuSpray, or DeVilbiss. The release should go on wet without puddling. Recommended settings:

Pot Pressure - < 5 psi  
Air Pressure - < 40 psi  
Fluid nozzle = Binks #94  
Air nozzle = Binks #95P or 93P

2) Strokes should overlap slightly to assure complete coverage. Adjust air and liquid controls to provide a light, uniform film. Keep the spray nozzle @ 6 – 10 inches from the mold surface. An air pressure setting in the 30 – 40 psi range should reduce any fogging effect. Adjust air and liquid controls to maintain a uniform spray pattern.

3) Spray successive coats of release. Allow each coat to flash dry before applying the next coat.

4) 3-4 coats are recommended although new or porous tooling may require additional coats.

5) Following your final coat of 840 allow 30 minutes for the release to cure before using the mold. Hot and humid conditions can affect the drying time of the spray and may require adjustment of settings to insure a uniform spray.

6) When spraying a large mold that requires walking on the surface, apply the release to a section at a time. Apply all of your coats and allow the 30 minutes cure time before moving on to the next section.

\* Due to the unique properties of this material, we require a clean closed application container. The container we find best suited, is a HDPE bottle with a shampoo squeeze style cap, where only a small amount of air is transferred. Gallons should be transferred into the type of container described above. At your request we can supply a sample and source. Drum quantity customers are required to use a desiccant drier attachment to assure proper release performance.

## Maintenance & Touch-up

If scumming or sticking begins: Wipe the problem area mold with XTEND 840 to dissolve and remove residue. Continue molding. If the residue does not dissolve, lightly work over the tool with a Scotchbright® pad wet with XTEND 840, then apply one coat of release.

If scumming persists: Wipe off with AXEL's CX-525 cleaner and a Scotchbright® pad. (This cleaner is designed to take off the residual styrene buildup without removing the base coat of release.) Then wipe on 1 to 2 coats of XTEND 840 while heating the mold, waiting 10 minutes between each coat.

In extreme scumming conditions: Strip the tool with CX-525, CX-200HS and by buffing the tool. This will remove all scumming, buildup and the release. It will also condition

the mold for break-in. Start from step 1 to recondition the mold.

**Removal:** Use CX-200HS, followed by a water wipe and a good general purpose cleaner, such as AXEL's CX-500.

The key to easy, consistent releases is maintaining molds through balanced use of release and cleaner. To further optimize the closed molding process we also recommend using an internal mold release.

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