

How Do You Pick the Right SLIDE Mold Release?

There are many types of mold releases: silicones, paintable silicones, PTFEs, waxes, stearates, etc. Selection is dependent on many factors.

- Are you molding a solvent sensitive resin? Styrenics such as ABS, Styrene, Polycarbonate, SAN, etc. are sensitive to chlorinated solvents that can cause surface blemishes or stress cracking. Polycarbonate is well known for stress cracking after the part is put in service.
- Will parts require sonic welding or be finished by: painting, hot stamping, screen-printing, pad printing, vacuum metalizing, electroplating, etc.? Some releases cause adhesion problems. Often the lack of good adhesion is not apparent until after the part is in service with the consumer. Regular silicone releases are not acceptable but paintable silicones usually are. **[Any release applied in excess may cause an adhesion problem]**.
- Are you looking for a “universal” release so that you avoid the confusion of having several releases in your plant? This simplification will probably give you less than the best release for some jobs.
- Are FDA approvals required? Medical molding and parts for food applications may require a release that has FDA approval.
- Is UL recognition required?
- Is the application for the electronics industry? Silicones and paintable silicones when degraded by an electrical arc are oxidized to silica, which is an excellent electrical insulator. Since release “oils” creep, they may wind up on electrical contacts. This is not serious on power applications with 110 volt or more systems, but is deadly on millivolt systems such as computer connectors, etc.
- Does the release contain Ozone Depleting Chemicals [ODC’s] or hazardous materials? Government regulation continues to play a larger role in the type of solvent systems used in releases. Often there are trade-offs when trying to meet corporate goals concerning ODC’s and hazardous materials. Replacement releases usually have some disadvantages. Because of government-mandated restrictions, price tends to be greater for these newer releases. SLIDE has eliminated ODC’s from most of their releases, but some releases have chlorinated compounds that are not acceptable to some companies. Customer should look at the MSDS sheet to determine what is acceptable within their corporate policy.
- Are you going to automate the release application? Some releases require agitation. It is anywhere from awkward to impossible to use these releases.
- When picking a SLIDE™ mold release, use the chart on page 3 of a current Slide catalog. You will see ten categories of releases such as Food approved, Paintable, Recommended for Medical Molding, etc. For each category there are number of release types which are: Light, Medium and Heavy duty releases, Specialty releases and Thermoset releases with specific Slide products listed in each type.

Questions to ask:

1. Is the release for thermoplastics or thermosets?
2. If thermoplastics determine the solvent/propellant system that will be acceptable to the customer. What resins is he molding? If customer is molding styrenics, there is a chance that chlorinated solvents will contact parts, or the injection melt will contact release that has not yet dried. This should be avoided and the Slide EconoSpray series of releases are not appropriate [this includes any [xxxxxT] products such as [40716T]. Other choices are [xxxxxN] products such as [41612N] and E/S products [water based]. Currently, few molders use the E/S products on cool molds as drying time is slower due to the water involved. Increasingly, companies become more interested in water based releases as they try to eliminate chlorinated and fluorinated solvents.
3. Establish the basic type of release agent that is acceptable and works for as many molding jobs as possible. Check to see that releases are acceptable for the molding temperatures required.
 - A) Can they use a regular silicone release? Most of the time regular silicones get more release for the dollar spent
 - B) B)If no to [A], can they use a paintable silicone release? Custom molders and OEMs who have secondary operations that preclude use of a regular silicone, often use paintable silicones.
 - C) C)If no to [A] & [B], select from the available specialty releases. These include zinc stearate, lecithin, modified vegetable oils and fluorinated polymers such as DuPont's Krytox® which is the key ingredient in Slide's Dry Film Lube [DFL].
 - D) D)Based on type of molding and cost of release, choose a light, medium or heavy duty release. There are three releases in each category. At the sampling stage, at least two should be tried to select the one that will get the job done and be most cost effective.

For more information on releases for thermoplastic resins, see "*Mold Releases: For Better or for Worse*", by Jim Cunningham.

If the release is for thermosets, Slide has a narrower range of products to consider. Determine he following: What resin is being molded? What process is being used? At what temperatures does the curing occur?

For urethane foam, try Slide Urethane [45812N].

For rotational molding, try Slide DuraKote [41716T].

For compression molding of phenolics, ureas, melamines, alkyds and polyesters, BMC and SMC, try Slide DuraKote [41716T] and Thermoset Mold Release [45416T].

For encapsulation, potting or injection molding of epoxies, polyester and phenolics, try Slide Epoxease [40616T].