



Application Guide

FORMULA FIVE[®] Matte Top Coat

Semi-Permanent Mold Release

FORMULA FIVE[®] Matte Top Coat semi-permanent mold release is a high slip release agent that may be used as a one-step semi-permanent mold release system for non-cosmetic parts. Formulated from a proprietary blend of cross-linking polymers in a solvent carrier, FORMULA FIVE[®] Matte Top Coat bonds to the mold surface to protect the mold and preserve fine detail, produces very little mold build up, and yields multiple releases per application. FORMULA FIVE[®] Matte Top Coat is applied using a simple wipe-on leave-on or spray-on-wipe application that requires no polishing and will maintain a matte finish on parts made from matte finish molds. Ideal for applications where transfer of release agent to finished part must be avoided. FORMULA FIVE[®] Matte Top Coat may be applied over other semi-permanent releases without stripping.

FORMULA FIVE[®] Matte Top Coat is a very robust and chemically resistant semi-permanent that is especially suited for use in non-gel coated applications, with primer gel coats, with heavily filled matrices such as cast polymer and polymer concrete, with aggressive resin systems such as DCPD (dicyclopentadiene resin), and in many non-cosmetic applications such as roto-casting, male molds and "B" sides of closed molding operations. FORMULA FIVE[®] Matte Top Coat is ideal for challenging mold surfaces such as "non-skid" and can replace flange, edge, or hat wax with the advantage of eliminating risk of wax contaminating cosmetic mold surfaces.

FORMULA FIVE[®] Matte Top Coat is also suitable for the release of both gel coated and non-gel coated fiberglass (FRP/GRP¹), phenolic, epoxy, polyester, and vinylester resins, rubber, and many polyurethane foams and elastomer parts from most substrates, including metal and gel coated mold and plug surfaces. FORMULA FIVE[®] Matte Top Coat also extends life of silicone rubber molds. Recommended for most molding processes including contact molding, hand lay up, spray up, filament winding, cast polymer (cultured marble/solid surface), rotational molding, closed molding (RTM, compression, injection), polymer concrete (polycrete/GRC²), and with in-mold coatings. Suitable for use with mold process temperatures up to 500 °F (260 °C).

NOTE: The cross-linking resins used in FORMULA FIVE[®] Matte Top Coat cure by hydrolysis (interaction with moisture in the atmosphere) and temperature. Recommended storage is in original containers tightly sealed avoiding extreme temperatures. Decant the amount of material expected to be used into HDPE containers with a positive closure just before use. Do not return air exposed release back into original container. For more robust mold releasing use over FORMULA FIVE[®] Mold Sealer-S.

¹ FRP/GRP = Fiber Reinforced Polymer or Plastic / Glass Reinforced Plastic or Polyester

² GRC = Glass fiber Reinforced Concrete

PREPARING THE MOLD SURFACE

FORMULA FIVE[®] Matte Top Coat is ready to use as received with no mixing or agitation necessary. Do not dilute or mix with other chemicals or dilute. Clean mold thoroughly with FORMULA FIVE[®] Mold Cleaner according to instructions or, if necessary, by compounding followed by warm water/detergent wash and followed by FORMULA FIVE[®] Mold Cleaner. For new, reconditioned, porous, or damaged molds, apply FORMULA FIVE[®] Mold Sealer or FORMULA FIVE[®] Mold Sealer-S according to instructions prior to using FORMULA FIVE[®] Matte Top Coat.

Use tape test at several places on molding surface to verify cleanliness. Use good quality 3/4 or 1 inch (18 - 24 mm) wide general-purpose masking tape such as Scotch[®] Performance Masking Tape 234. Always use the same tape so the feel of its standard removal becomes familiar. Apply a piece of tape about 8 inches (20 cm) in length and burnish to the mold. Pull the tape up at a 90-degree angle to the surface. When testing a mold surface that has properly applied mold release, very little resistance should be felt. Perform tape test at different areas of mold to ensure cleanliness or proper mold release application.

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DIRECTIONS FOR USE

FORMULA FIVE[®] Matte Top Coat should always be used in a well-ventilated area with appropriate personal protection equipment, including solvent resistant gloves and eye protection.

FORMULA FIVE[®] Matte Top Coat performs very well at application temperatures of 70 °F (21 °C) and above but curing at higher temperatures such as 120 - 150 °F (49 - 66 °C) will result in a more durable release coating. Multiple coats and longer curing times between mold release coats before first part being made will also yield a more durable release coating. Spray application is recommended for mold surfaces at or above 130 °F (55 °C) because of rapid evaporation rate of carrier solvents.

Using a clean dry lint-free cloth or high quality paper towel, wet but not dripping with FORMULA FIVE[®] Matte Top Coat, gently wipe mold surface covering up to 5 ft² (0.5 m²) at a time. Never pour mold release directly on mold. Wipe away any pooling but do not over wipe or apply excess material. Reapply FORMULA FIVE[®] Matte Top Coat to cloth frequently during application. Repeat on neighboring areas, overlapping to ensure complete coverage, until mold surface is completely covered. No buffing or polishing is necessary.

Allow 15 minutes for FORMULA FIVE[®] Matte Top Coat to cure at temperatures above 100 °F (38 °C) or 30 minutes at ambient temperatures. Then, using a fresh clean applicator, repeat previous step two more times for a total of three protective coats. Durability of mold release will be improved by allowing films to cure longer or by heat curing at temperatures above process or part resin exotherm temperature. Reapply one coat of FORMULA FIVE[®] Matte Top Coat as described above after first part has been de-molded and when molded parts begin to hesitate or stick upon release.

If resin scum is observed after de-molding a part, clean area using FORMULA FIVE[®] Matte Top Coat and wipe away residue. Continue molding parts. If scumming persists, lightly clean area with FORMULA FIVE[®] Mold Cleaner and a Scotch-Bright[®] type pad, wiping away residue and reapplying one or two coats of mold release as described above. If scumming is chronic, clean mold with FORMULA FIVE[®] Wax Stripper according to instructions and then buff. Proceed by applying FORMULA FIVE[®] Matte Top Coat (and FORMULA FIVE[®] Mold Sealer or FORMULA FIVE[®] Mold Sealer-S as required) again as described above from first step. If streaking is observed after applying a coat of mold release, polish off with clean cloth after cure. Streaking can be caused by applying too heavy of a coat of mold release or by applying with a cloth containing partially or fully cured release or other contaminants.

If pre-release is experienced on parts made with gel coat it may be due to the high-slip properties of FORMULA FIVE[®] Matte Top Coat. A very light wiping of problem areas with FORMULA FIVE[®] Mold Cleaner will increase surface tension and reduce gel-coat pre-release.

FORMULA FIVE[®] Matte Top Coat is packaged in 55 gallon (208.2 liter) drums and 1 gallon (3.79 liter) jerricans.