



NanoMoldCoating® Heat Cure HC & HCF

Application instructions for in the tool room

Contents of the Nanomoldcoating Kit

Heat Cure HC 5ml, 15ml, 25ml, 50ml

- (1) bottle of Heat Cure HC
- (1) bottle of NanoMoldCoating® Remover
- (2) microfiber application cloths
- (2) microfiber tipped application swabs for hard-to-reach areas
- (1) spray atomizer to be used for remover only
- (1) dropper for applying the mold coating

As when handling all chemical solvents, personal protective clothing; eye protection; and solvent resistant (nitrile) gloves should be worn at all times. Keep the area well ventilated.

The NanoMoldCoating® kit comes with a dropper for applying the liquid to the microfiber cloth or microfiber swab. This dropper should only be used for applying the coating. After application the dropper should be removed from the bottle and the cap replaced to seal bottle and preserve contents. Clean the dropper with isopropyl alcohol.

The enclosed “sprayer” or “atomizer” is to be used only for the remover and not to apply the coating. The sprayer should be removed from the remover bottle and pumped free of any product after use.

Essential to the success of the coating

1. Proper Cleaning – Residual oils left on the coated surface may cause the coating to wear prematurely.
2. Proper Heating – The heating process initiates the catalyst in the coating.
3. Proper Curing – Once the catalyst is activated it requires a minimum of three (3) hours for it to harden the coating. Although the surface seems dry, it needs the full three (3) hours to completely cure. If not, the coating may wear prematurely.

Mold Cleaning Prior to Coating

1. Begin by pre-cleaning surfaces with a standard mold cleaner/degreaser. Remove all surface debris and any oils, lubricants, or rust inhibitors from the pores and crevices of the mold.
2. Use a clean white cloth wetted with ethanol, IPA alcohol, acetone, or MEK solvent to remove any residual degreaser or oils. Do not use red shop rags, as these are often contaminated with lubricants or detergents.
3. Continue cleaning with solvent until no oil or debris is evident on the cloth.
4. Cover the cleaned surface with a clean cloth and allow it to dry for a minimum of five (5) minutes.

Heat Cure HCF 10ml, 15ml, 25ml, 50ml

- (1) bottle of Heat Cure HCF Part A
- (1) bottle of Heat Cure HCF Part B
- (1) bottle of NanoMoldCoating® Remover
- (2) microfiber application cloths
- (2) microfiber tipped application swabs for hard-to-reach areas
- (1) spray atomizer to be used for remover only
- (1) dropper for applying the mold coating

Follow these mixing instructions carefully!

1. Part A is the larger bottle. The Heat Cure HCF components may separate over time. Shake the bottle vigorously to involve all the components in the suspension immediately before use.
2. Part B is the smaller bottle. The Heat Cure HCF components may separate over time. Shake the bottle to involve all the components in the suspension immediately before use.
3. Using the Part A bottle as the mixing container, add Part B (the smaller bottle) to Part A (the larger bottle).
4. Mix well for a full minute to ensure complete blending. Heat Cure HCF is now ready for application.
5. The resulting mixture is the working solution. Follow the NanoMoldCoating Instruction sheet for the application procedure.
6. If mixing HCF in smaller batches is desired, use a mixing ratio of **2 parts A to 1 part B**. An example would be if you only needed 6 ml of the HCF coating, you would mix 4 ml of Part A and 2 ml of Part B to make 6 ml.

Nanomoldcoating[®] - Heat Cure

1. Apply 3-4 drops of NanoMoldCoating Heat Cure on a microfiber cloth or microfiber swab. *(The enclosed “pump sprayer” is to be used only for the remover and should be removed and pumped free of any product after use.)*
2. Apply a thin and even layer of NanoMoldCoating[®] to the mold surface. Remove any excess pooling immediately. When applied correctly it should just appear wet not dripping or pooling.
 - Visualize: When applying a “thin” layer, the surface should look as if you wiped it with an alcohol wipe. It appears wet and then slowly evaporates.
 - Technique: When applying, work in one direction at a time and be careful not to leave swirl marks on the surface.
 - For highly polished surfaces it may be necessary to lightly “fan” any swirls out of the surface.
3. **APPLY HEAT & AIR FLOW**

A heat gun (set at 285° – 315° C with high air flow) approximately 4 – 6 inches from the surface. Apply heat in a slow sweeping, back and forth motion for at least ten (10) minutes over the entire coated area. The temperature setting is based on the heat of the air coming from the gun, not the temperature of the substrate.

 - In the case of large tools, coat and heat up to 24” square sections at a time.
 - Similarly, in the case of large cavitation tools: Coat and heat four to eight cavities at a time. Spend two to three (2-3) minutes per cavity heating the coated areas.

A convection oven can be used as it provides heat and sufficient air flow. Standard ovens will not work. Preheat convection oven to 450°F (232°C). Process the coated mold for 10 minutes in the convection oven, then remove from the oven.
4. Let it sit for a minimum of three (3) hours at room temperature. It is not sufficient for the coating to be “dry”. This is just the beginning of the cure cycle. It requires a minimum of three (3) hours to properly harden.
5. The mold is now ready for production.

Maintaining Molds with NanoMoldCoating

For general maintenance of molds when the coating is on the mold, use only Nanoplas Nano Mold Cleaner for best results. Nano Mold Cleaner is designed to not remove the coating. If other, harsher cleaners are used you will run the risk of removing the coating. Do not use a solvent based cleaner.

Remover

If at any time, coating removal is required: spray remover onto the surface and let soak in for 1 – 2 minutes. This breaks the chemical bonds. Rub aggressively to remove the coating.

Production Notes

Also beneficial to the success of the coating are adjustments made to compensate for the higher performance potential afforded by NanoMoldCoating.

Less Friction Resistance – allows for modifications to molding parameters, including:

- Reduced Injection Pressure
- Reduced Pack Pressure

Benefits of Fine Tuning – settings that take full advantage of the coating’s properties can produce benefits including:

- Reduction or elimination of Sink Marks
- Reduction or elimination of Short Shots
- Improved Cycle Time
- Exceptional Part Release

