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# User Guide

## NanoMouldCoating

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### **NanoMoldCoating® HC. & .HCF. General Application & Storage**

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

***Follow These Instructions Explicitly!!!!***

#### **Contents of the Kit**

1. Each NanoMoldCoating® kit comes with:
  - (1) bottle of NanoMoldCoating®
  - (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
2. The NanoMoldCoating® bottle comes with a “Euro-Dropper” insert in the bottle. This is built in to allow the person applying the coating to meter the amount of liquid being applied to the microfiber cloth or microfiber swab. It can be removed if necessary.
3. 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.

#### **Note**

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 to dry for a minimum of five (5) minutes.

### NanoMoldCoating Application

1. Apply 3-4 drops of NanoMoldCoating 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.
  - 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 in the surface.
  - For highly polished surfaces it may be necessary to lightly “fan” any swirls out of the surface.
3. Apply heat with a heat gun (*set at 550° – 600° F 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.
4. The temperature setting is based on the heat of the air coming from the gun. It is not meant to heat the substrate to the temperature of 550° - 600° F.
  - 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.
5. Air flow is critical to the cure process. A convection oven can be used as it provides heat and sufficient air flow. Standard ovens will not work.
6. Let sit for a minimum of three (3) hours. It is not sufficient for the coating to be “dry”. This is just the beginning of the cure cycle. It requires the minimum three (3) hours to properly harden.
7. For longer coating life, repeat NanoMoldCoating Application steps 1 – 4 before going into production. *(It is possible to recoat over the coating for touch up and continued release.)*



8. 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 the Mouldpro, Nano Clean for best results. Nano Clean is designed to not remove the coating. If other more harsh cleaners are used, you will run the risk of removing the coating.\*\***

### Remover

1. 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.
2. 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 the 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

### Change log

Date of change	Change	Version
10-07-2019	Layout	001