

## How to Sublimate a PolySub™ Mug

The successful sublimation of any substrate depends upon balancing the variables of pressure, temperature and time. We tested the following mug presses with various inks and papers to come up with general parameters that will help you get started. Your combination of ink, paper and mug press is unique to you, and will require adjustments to obtain optimum results with the PolySub mug.

**Pressure:** The PolySub mug is an injection molded polymer with a uniform tight tolerance surface. As a result, there is no need for high pressure to achieve good contact between the transfer and the mug. No matter which mug press you are using you should use a low to medium pressure setting. High pressure can cause deformation of the mug, ghosting of the outline of the transfer paper and impression from the heating element.

It is a good practice to make your transfer paper size either 3 1/2" x 8 1/2" or 3 1/2" x 9 1/4", regardless of the size of the image, to eliminate the potential for ghosting. This also helps with the proper alignment of the image on the mug.

Some mug press heating elements have a pattern on the surface which can transfer to the mug. The use of a Teflon sheet can prevent such transfer. The design of one mug press is such that the compression of the heating element is elliptical instead of round and deforms the mug regardless of the pressure setting. Our solution was to design an aluminum tool that slips into the mug to prevent deformation. The insert tool should be used with all mug presses and mug wraps as it stabilizes the mug.

**Temperature:** The PolySub mug has a melting temperature of 430° F. If you are melting the surface of the mug you are well above the temperature required for sublimation to occur and should adjust your settings downward. Remember, the temperature setting of the mug press reflects the design of the controls and the position of thermocouples, and does not necessarily reflect the actual temperature at the surface of the mug.

Mug Press	Temp. Setting	Time Setting
Cactus	390 F	3 min 15 sec
George Knight	390 F	4 min
Hix	390 F	5 - 6 min
JP500	400 F	4 min
Nova Chrome	390 F	2 min 15 sec
Phoenix	340 F	1 min 30 sec
Printa	390 F	3 min 15 sec
Stahls	350 F	2 min 15 sec
Mug Wraps (convection oven)	375 F	12 min

**Time:** The PolySub mug heats up faster than a ceramic mug as it is 1/3 the weight of a ceramic mug. In general, the time to sublimate a PolySub mug is less than a ceramic mug.

**Transfer:** Tape the transfer to the PolySub mug. If the tape comes loose when you remove the mug from the press, then tape it more securely or consider using a different heat tape. Insert the tool in the mug and place the mug with the tool in the mug press. When the process is finished, immediately remove the mug from the press. Remove the insert tool from the mug and immediately dip the mug (with transfer still attached) in cold water to stop the sublimation process and stabilize the mug. Remove the transfer.

For mug wraps, immediately remove the insert tool and mug wrap and dip the mug in cold water (with transfer still attached). If any ghosting occurs you can remove the tool and dip the mug in cold water with the mug wrap still attached.

**Warning:** The insert tool must be removed immediately after sublimation. It may become lodged in the mug if it cools prior to removal. After removing the tool, cool the mug by transferring it immediately to cold water. If the tool sticks inside, reheat the mug/tool until the tool can be removed.

**Note:** The above settings are only intended to give you a reasonable point to begin to determine the best settings for your system. The lid for the Travel Mug may appear loose on the blank. The mug shrinks slightly after sublimation for a correct fit of the lid.