Rite-Hete Corporation

STANDARD AND CUSTOM MELTING POTS AND TANKS

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Direct Heater Temperature Overshoot Troubleshooting

When melting high specific gravity materials like wax an overshoot of your set temperature may be seen. This has to do with the properties of your material in conjunction with thermal fusion. Waxes, especially, start out solid as a thermal insulator and, as it melts, becomes a thermal conductor. Basically, as the product melts it releases all of the stored heat and you develop a temperature spike. The only way to decrease this spike is by compensating for it with your temperature setting or, at some point, slowing down the melting process in general. Time must be allowed for the material to absorb the heat and disperse it before giving it more, once again a solid = an insulator. Since the industry demands a fast melt time our products are built to compromise, an acceptable melt time with a minimal overshoot. Everyone's processes and set points are different so a little trial and error may be needed to find what works best for you. While we can make a melter which produces no overshoot it would take 6-8 hours to melt a batch of material, which for most industries is unacceptable. This is the reason why most industries have moved away from water jacketed/double boiler melters, because as they provide no overshoot it is at the cost of slow melt times.

On initial melt you may want to try setting the melter 20-50 degrees cooler than your desired temperature. For example, soy wax melts at 130F but dyes and fragrances are added at 180-190F. Instead of setting you temperature to 180F right away, set it to 130F and allow the wax to fully melt. Once you have full melt you can turn the temperature up to 180f, this would keep the initial overshoot within your temperature range plus the wax will accept more heat easily now that it is fully melted.

Another method would involve setting the melter to your desired temperature immediately, say 180 F. Then at some point, maybe .5-1.5 hours into melting process, turn it down 20-50 degrees. This will compensate for temperature overshoot.

Any overshoot you do see will eventually dissipate and the melter will regulate at the set temperature with no problem.

If you are truly concerned the unit is malfunctioning or out of calibration you would want to test with water, which has a specific gravity of 0. Please be sure to allow adequate time for the melter to work and immerse your temperature probe into the middle of the material when taking a temperature reading. If you would like to discuss this or have additional questions please do not hesitate to call. Thank you for choosing Ritehete Corporation products.