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## To Decrease Cycle Times, Think Outside The Mold

Steve Petrakis, Frigel North America

Methods to reduce cycle times come in many forms. Often improvements may be focused on mold performance, part design or automation, but molders may be overlooking a significant opportunity.

Implementing an intelligent process cooling system can optimize water temperature, flow and control, all which improves part cooling in the mold and decreases cycle times by up to 20 percent.

### Frigel's Ecodry – change how you think about cooling

The [Ecodry technology](#) starts with a closed-circuit fluid cooler instead of a traditional cooling tower. Towers require continuous maintenance, run up chemical expenses and waste millions of gallons of water. They also do not perform well when ambient temperatures top 85°F or drop below freezing.

The Ecodry's built-in control systems allow operation in extreme hot or cold temperatures. When ambient air hits 85° F or higher, the Ecodry system automatically switches into "adiabatic" mode. In this mode, air passes through an adiabatic chamber before reaching the heat exchanger. A fine mist of city water is pulsed into the incoming air stream inside the chamber.

Adiabatic cooling cost effectively and reliably maintains water below set point. The concept is based on the use of ambient air, rather than evaporation, to cool the process water. Advanced controls monitor the process and automatically make the necessary changes to fan speed and water misting, leading to precise water temperature for better parts and dramatic energy savings.

The [technology saves processors](#) up to 95 percent on their water and energy costs, a benefit which is complemented with environmentally friendly operation, production efficiencies and ultimately, less scrap and better parts.

### Uniform, precise cooling equals higher productivity

The Ecodry system incorporates a Microgel (chiller/TCU combo) or Turbogel (TCU), replacing the need for central chilling systems.

As you know, flow rate and temperature are the two most important things in mold cooling. The Microgel is designed to optimize those two factors by creating and maintaining the temperature and flow requirements at each individual mold, reducing cycle time and increasing productivity.

A single set of uninsulated pipes supplies the process water, without heat gain, to a Microgel or Turbogel at each machine. Besides high flow and precise temperatures, they feature a built in "free cooling" valve that provides automatic free cooling when ambient temperatures are lower than process setpoint.

By controlling flow and temperature at the point of use, energy is conserved. Most importantly, process parameters can be optimized to reduce the  $\Delta T$  across the mold, making parts most effectively and reducing cycle time.



For more information on intelligent process cooling or for a cost saving analysis, contact Frigel at (847) 540-0160 or [info@frigel.com](mailto:info@frigel.com).

We've opened up an additional month's capacity using this system.



The Ecodry's modular components and design makes installation and expansion less complicated and more affordable than conventional cooling tower systems – and there's no need to mount components on the roof.

## Your Expert

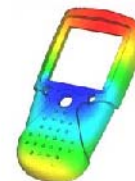


### The Power to Outperform

Since its foundation in 1960, FRIGEL has been manufacturing machinery and equipment for industrial process cooling and temperature control. Thanks to their constantly updated know-how in thermodynamics and related technologies, and the experience made in various industrial processings, they have become specialists in finding the best solution for the most different needs in process cooling and temperature control; such as: plastic and rubber processing, metal die casting, paper printing, wineries and distilleries, petrochemical, pharmaceutical, textile, ceramic, machine tooling, laser and soap processing.

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