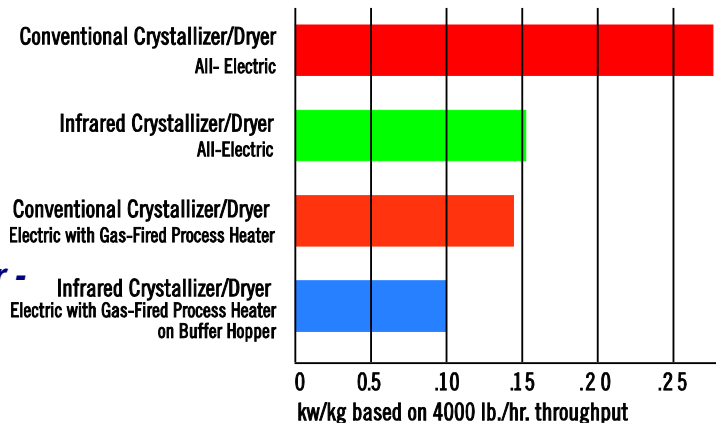


PET Processors Can Reduce Energy Costs by 45% Compared to Conventional Crystallizing and Drying Methods

Hi, I'm Tim Noggle, VP of Sales & Marketing for Novatec. I'd like to explain why we are so excited about our Infrared (IRD) Crystallizer/Dryer.

First & foremost, ***you can enjoy a 45% reduction in energy usage compared to a conventional crystallizer/dryer.***

The crystallizing and drying process is complete in 1 hour - compared to 5-6 hours with conventional systems.



In-process material is reduced by about 500%



Our video was filmed in our Drying Technology Center in Baltimore, where we use a small IRD to demonstrate the crystallizing/drying process and run material tests for PET processors who are considering a purchase. |

This IRD in our Drying Technology Center set up with all the components of a working in-plant PET system so we can demonstrate the complete crystallizing/drying process to potential customers. ***Novatec is the only US manufacturer of this patented system and our lab is the only place where PET processors can actually watch their material being tested and get immediate moisture analysis test results - as a free service.***



is

Let's review the material flow.

Typically a vacuum pump loads the PET material into a receiver on top of the IRD and it is metered into the IRD. The PET is usually flake from industrial regrind or re-cycled material and **may have a residual moisture content of 3500ppm or more.**



The PET material flows downward through this tube, which is on the back end of the lamp module, into the rotating drum.

Access to the interior of the drum and the lamp module is straight-forward.



Simply disconnect electrical connections...
and slide the lamp module out.

Likewise, the module slides easily back into place.

The IR Lamps, when inserted into the rotating drum, provide the heat to crystallize and dry the scrap or re-cycled PET material, which takes about 15 minutes.



The stainless steel drum is fitted with an internal helix that moves the PET resin through the drum...



Tumbler fins ensure that the PET material particles are evenly exposed to the infrared rays.



The crystallized and dried PET material drops into a takeoff box at the end of the drum and is transported to the buffer hopper.



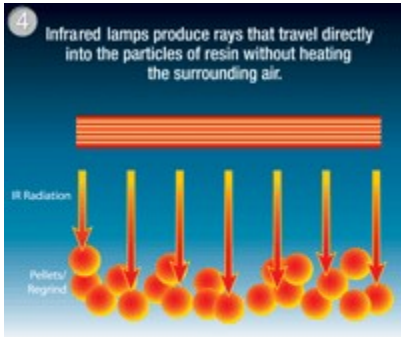
There is a small NovaWheel™ Desiccant Wheel Dryer to provide dry air to the buffer hopper. This ensures that the PET reaches the **desired low level of moisture, usually below 50 ppm**. The material remains in the buffer hopper about 45 minutes so **you only have about one hour of processed material on hand**. The dryer and hopper are sized to accommodate about 1/4 of your hourly throughput.



Load cells on the buffer hopper are connected to the IRD control

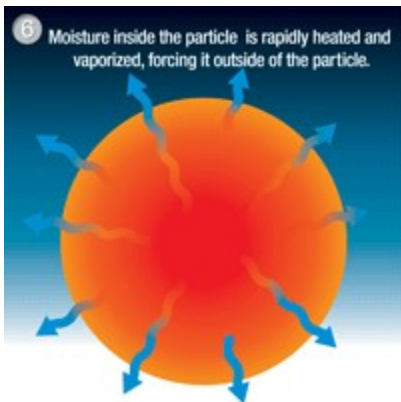
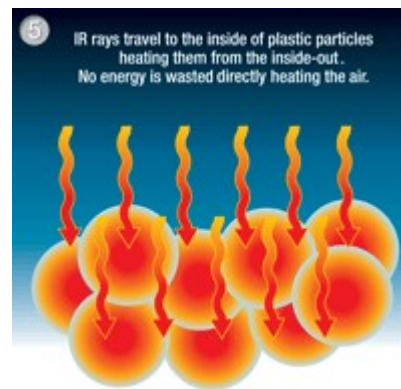
to monitor throughput and slow IRD processing rate if the extruder slows down.

Here's why the IRD is so efficient –



Infrared rays travel directly into the particles of resin without heating the surrounding air.

IR rays travel to the center of the particles, drying them from the inside out. █



Moisture inside the particle is rapidly heated and vaporized, forcing it outside the particle.

A stream of air removes the vaporized moisture from the process

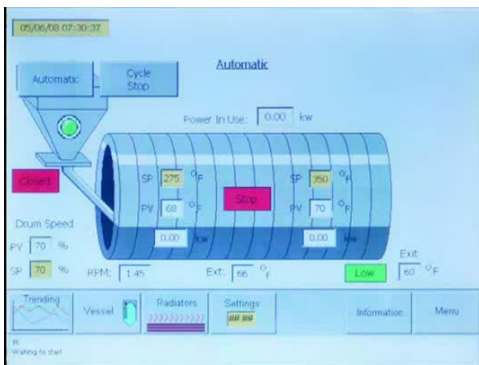


As the material move quickly through the rotating drum, it is crystallized and dried in one step.

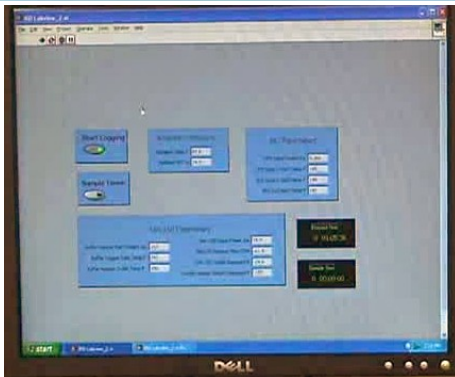


PET sheet regrind is relatively clear before it is crystallized

After crystallization, it appears milky white.



The whole process is controlled by an advanced touch-screen PLC.



We use a LabView program to monitor and record energy usage and other functions of the IRD as well as the Dryer for the buffer hopper.

This is a Novatec IRD-4000 built here in our Baltimore facility. This is the largest IRD ever built - anywhere in the world.



We developed our Drying Technology Center to better serve processors like you.

We are hosting tests for PET processors on a regular basis ...and giving them immediate results...proving the our claims about the effectiveness of the IRD in crystallizing and drying PET in less than 1-hour...



We provide test results showing initial and final moisture in ppm and energy usage in kW/kg.

Novatec is the only US manufacturer of the energy-saving infrared crystallizer/dryer - once again proving our leadership in dryer technology. If you are a candidate for our IRD, we welcome you to visit our Drying Technology Center for a demonstration. We also run tests for customers using our wheel dryers, membrane dryers and vacuum dryers as well as conveying equipment. Contact me, Tim Noggle, or Mark Haynie, our Sales Manager of Dryer products to arrange a visit to our Drying Technology Center - 15 minutes from BWI airport.