NOVATEC™

>> AUTHOR

Mark Haynie
Novatec
Vice President, Moisture & Drying Technology

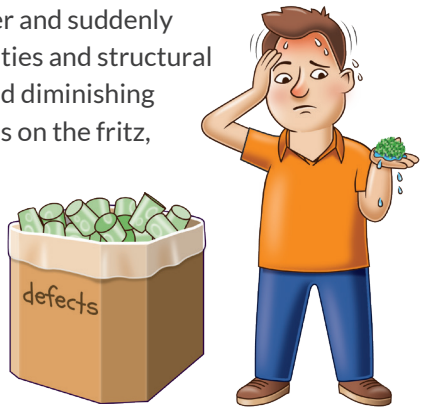
Mark has been designing and installing dryer systems for over 40 years and has worked at Novatec, a leading dryer equipment supplier for the plastics industry, for 25 years. Mark is a well-known and well-respected resin drying expert. Throughout his career, Mark has visited thousands of plastics plants offering solutions for drying challenges and has authored many technical drying and moisture-related articles.

Is Summer Weather Hampering Your Resin Dryer Performance?

Learn how to ensure your dryers operate at peak performance during hot, humid weather.

Warmer weather is upon us, seasonal allergies are acting up, and so it seems is your resin dryer.

If your dryer performance was stellar all winter and suddenly your products show signs of aesthetic deformities and structural integrity issues, increasing your scrap rates and diminishing your profits, you might think your resin dryer is on the fritz, but that's likely not the case.



Summer brings fun activities like picnics, golf, and relaxing in the sun. But for plastic processors, it can bring on major headaches when your usually flawless production now produces inferior products.

The higher temperatures and humidity of spring and summer increase the initial moisture content of pellets. Plastic resin gains moisture depending on the type of material being processed, the environmental conditions, and the time of exposure to ambient conditions. The wetter your material, the longer it will take to dry.

Hygroscopic materials, in particular, gain higher amounts of moisture much faster in humid conditions. Resins like Nylon, ABS, Acrylic, PET, PBT, Polyurethane, and Polycarbonate, which are all hygroscopic, have a strong affinity to attract and absorb atmospheric water from the air. They can absorb 2-8% moisture by weight at saturation.

HYGROSCOPIC RESINS	
Nylon	PBT
ABS	Polyurethane
Acrylic	Polycarbonate
PET	

Covered material storage bins and Gaylords help to minimize plastic pellet moisture regain and contamination.

MINIMIZE MOISTURE IN YOUR PLASTIC RESIN

To minimize moisture in your hygroscopic resins, only open sealed bags of material when ready to use, keep your Gaylords and in-plant storage bins covered, and store plastic material in a climate-controlled area if possible. Other ways to minimize the impact of humidity on your plastic material are to use closed-loop conveying (conditioned air) and keep a minimum amount of material over the machine's throat. Also, be aware of the material's immediate surroundings; the higher the relative humidity, the faster it will absorb moisture.

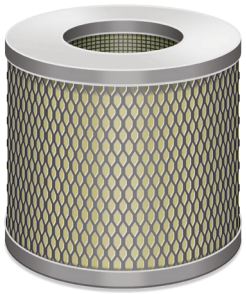
REGULAR RESIN DRYER MAINTENANCE CRITICAL DURING HUMID SUMMERS

Regular maintenance of your dryer system is vital for optimal performance in humid weather conditions.

- Check your drying system for air leaks. Leaks allow ambient air/moisture from the environment to enter your drying systems, making it necessary for your dryer to work harder to heat and dry plastic resin. Ensure hoses, clamps, fittings, and gaskets are in good condition, free from wear, and securely connected. Replace any hoses that show signs of damage or wear. Reposition or tighten any connections. Replace worn gaskets. Inspect your hopper door to make sure the seal is in good condition and has no leaks. Replace the hopper door gasket if necessary.

Baltimore, MD 21225 USA | 410-789-4811 | Fax: 410-789-4638 | 1-800-237-8379 | sales@novatec.com | **www.novatec.com**

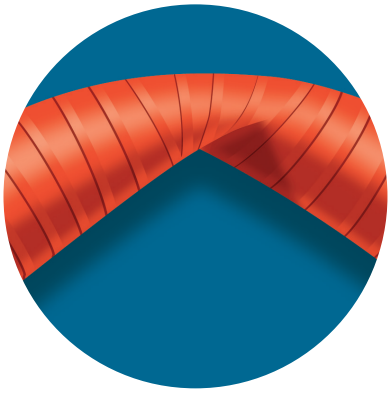
- Keep your filters clean. Filters should be kept clean and in good condition for maximum airflow and efficient drying. Thoroughly clean clogged filters, and replace any that are damaged, worn, or cannot be wholly unclogged. If your material is particularly dusty or contains excessive fines, you should consider adding a dust collector. You should have a well-maintained plasticizer trap if you are drying resins that release volatiles, such as PET, TPUs, flexible PVCs, and others that produce volatiles. The trap must be regularly drained and cleaned to avoid airflow issues, to increase the longevity of your dryer, and to prevent the risk of flammability if oily, waxy contaminants are allowed to build up.



Dryer filters should be kept clean and in good condition to filter out the maximum amount of dust and fines and allow for optimal airflow.

Dust collectors should be added to any dryer systems when processing plastic materials that are particularly dusty or contain excessive fines.

A well-maintained plasticizer trap must be used when drying plastic resins that release volatiles.



- Make sure dryer hoses are free from kinks or other obstructions that will hinder airflow. Reposition any kinked hoses that have excessive loops or are obstructed.

- If your dryer has an after-cooler or pre-cooler, keep the cooling coils clean to allow them to work efficiently.

Make sure dryer hoses are free from kinks or other obstructions that will hinder airflow.

The HT3 HydroTracer by aboni for Novatec can be used to measure initial moisture when offline process verification is needed.

FOR OPTIMAL PROCESSING MONITOR INITIAL MOISTURE CONTENT OF PLASTIC RESINS

Monitoring the plastic resin's moisture content before you begin processing and during processing is the key to making high-quality plastic parts with reduced waste and increased efficiency. The initial moisture content of the plastic material you are drying is always essential, but even more so in warmer weather when the humidity level is high and constantly changing, along with the starting moisture in your plastic pellets. By knowing and understanding the moisture content of your plastic resin, you can dry to the resin manufacturer's recommended dryness level, maintain the intended performance characteristics of the plastic resin, and yield a high-quality, cost-effective plastic part in the least amount of time possible.

When selecting a moisture analyzer for plastic resin, it is essential to understand how they function and their differences. All moisture analyzers for plastic resins measure the material's moisture percentage.

Novatec's latest offerings in plastic moisture analyzing products include the DryerGenie for pre-drying inline moisture analysis with automatic drying parameter adjustments and the HT3 HydroTracer by aboni for Novatec when active inline moisture-based drying with offline process verification is needed.

Follow the advice in this article to keep your resin drying system running smoothly all summer long.

The DryerGenie by Novatec is a new offering in plastic moisture analyzing products and for the first time ever the dryer will know the exact moisture of the pellets prior to drying. Then, the program within the dryer control will automatically adjust the drying parameters so the plastic resin is dried to the prescribed moisture level in the shortest possible time with no operator intervention needed.

Baltimore, MD 21225 USA | 410-789-4811 | Fax: 410-789-4638 | 1-800-237-8379 | sales@novatec.com | **www.novatec.com**