



Potato  
products.

**Drying, roasting  
and dehydration.**







Drying Potatoes.

## **A History of Processing Backed by Science.**

The humble potato is a nutritious staple enjoyed by billions of people around the world. It is also the one vegetable served for breakfast, lunch, dinner or a snack. For wedges, shreds and hash browns, to slices, dices, chips and fries, precise control over the drying process ensures the texture and taste consumers expect.

With know-how that stems from a long history in the potato industry, and competency deeply rooted in science, Bühler's thermal processing technologies specialize in alternating airflow, to rapidly remove surface moisture while maintaining consistency throughout the cross section of each product.

Potato processing has been Aeroglide's specialty since its founding in 1940 as American Potato Dryers, Inc. Today, engineers design custom processes and technology solutions to scale them. With a fierce dedication to food safety, Bühler sets the standard in product quality, moisture uniformity and energy efficiency.

# Drying, roasting, and dehydration. **A solution for every potato application.**



From French fries, slivers and nubbins, to dehydrated potato products and co-products, Bühler's AeroDry conveyor dryer with heavy duty stainless steel construction efficiently processes potatoes for every application imaginable--functioning as an oven, roaster, toaster and cooler.

For drying to a precise moisture content, the AeroDry single-pass dryer uses air to transfer heat and remove moisture as product gently moves through multiple zones with individually

controlled temperature, humidity, and airflow. Available in both single and dual plenum configurations, the balanced airflow in independent process zones maximizes the efficiency of heat/mass transfer to keep operating efficiency high and utility costs low, all while delivering consistently superior products.

For color development, the unique, dual-plenum configuration of the single-pass AeroRoast delivers a uniform airflow across the entire conveyor, ensuring consistent color at high capacities.





## French fries require precise surface moisture.

The AeroDry single-pass dryer uses air to transfer heat and achieve the precise amount of moisture as product moves through multiple temperature zones on the conveyor bed. Gentle handling, uniform moisture removal and precise control over the drying process are key to high quality French fries and sweet potato fries.



## Food safe processing.

Bühler's dedication to food safety is reflected in countless design features that enable superior access for cleaning and maintenance. Large doors and removable panels allow cleaning to be done quickly and thoroughly during routine operations. Dryer conveyor side guides are sloped and smooth to allow product to flow without becoming a safety or sanitation risk.



## Hygienically engineered.

Dryer floors are continuously welded for maximum sanitation with water collection troughs, making wet washes easier and more effective. Optional rinse-in-place or clean-in-place systems are also available to improve the effectiveness and speed of dryer cleaning.



# Roasting to achieve perfect color and texture. **AeroDry impingement solution.**

**Bühler's AeroDry impingement system is the optimal solution for rapid and uniform baking, roasting, toasting, cooking, drying and cooling. Impingement processing is ideal for a wide variety of applications.**



## **High heat transfer for even roast.**

Bühler's AeroDry impingement system is the optimal solution for roasting potatoes to achieve the desired color. High velocity impingement air tubes deliver rapid, uniform high heat transfer across the entire width of the conveyor bed, eliminating the oven edge effect.

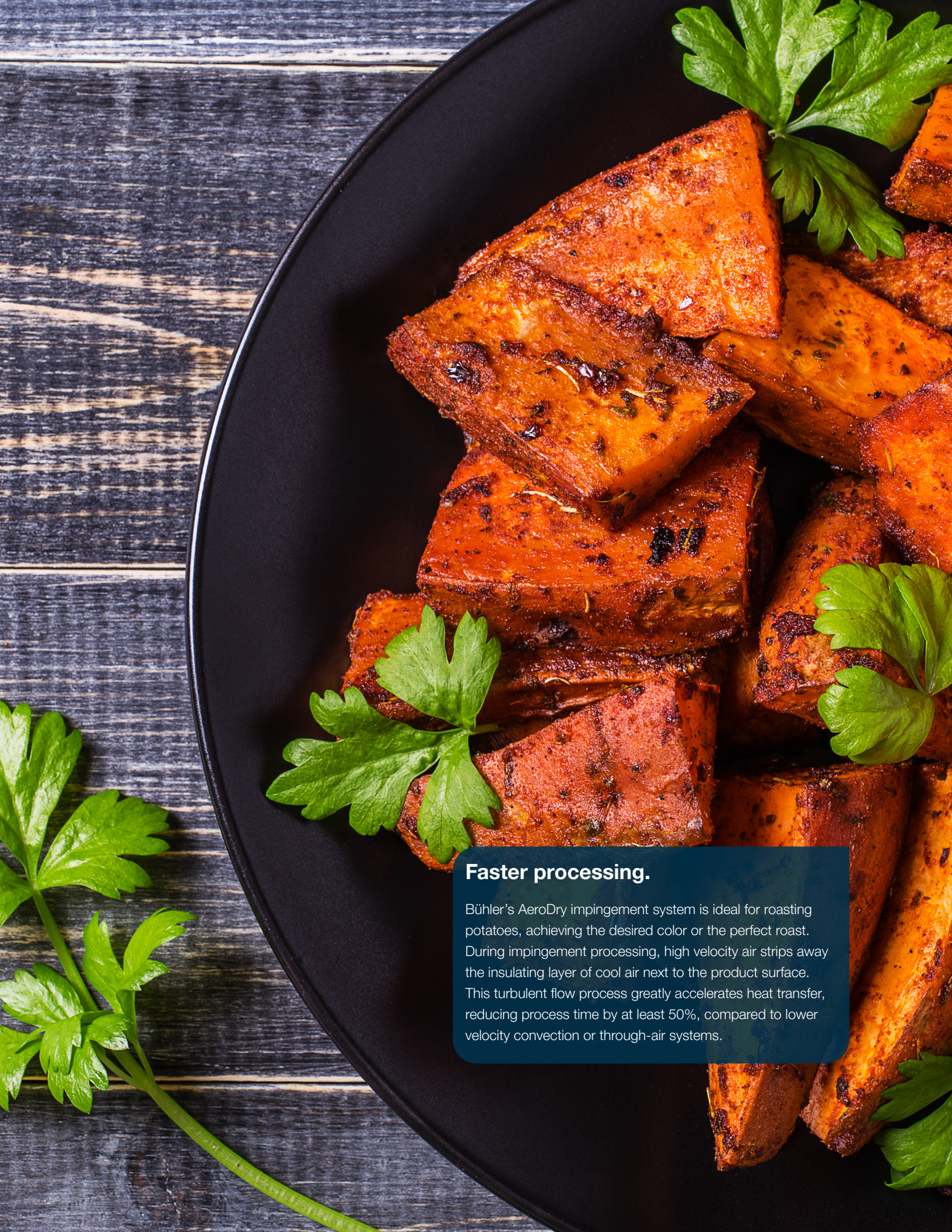
Impingement processing is ideal for many bakery applications as well as snacks, vegetables, refried beans and other food products.



## **Innovative air delivery.**

Impingement systems strip away the insulating layer of cool air next to the product surface. Precisely controlled air flow and temperature from above and below the conveyor in dual impingement systems, improve operating efficiency while producing product of consistently high quality. Single impingement systems, that deliver air from above the conveyor only, are also available.





### **Faster processing.**

Bühler's AeroDry impingement system is ideal for roasting potatoes, achieving the desired color or the perfect roast. During impingement processing, high velocity air strips away the insulating layer of cool air next to the product surface. This turbulent flow process greatly accelerates heat transfer, reducing process time by at least 50%, compared to lower velocity convection or through-air systems.



# Moisture removal to retain flavor and texture.

## **AeroDry dehydration and drying solutions.**



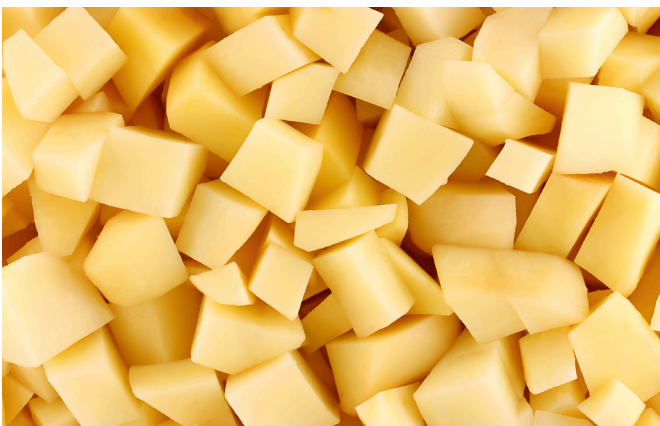
### **Dehydration for long shelf-life.**

For potato flakes or granules, used for instant mashed potatoes, or sliced for au gratin style potatoes, multi-stage dehydrators accommodate the most challenging processes while retaining fresh potato flavor and texture when reconstituted. Thoughtfully designed transfer sections between stages gently reorient product to provide a uniform drying process at each stage of processing.



### **Co-product and retrogradation.**

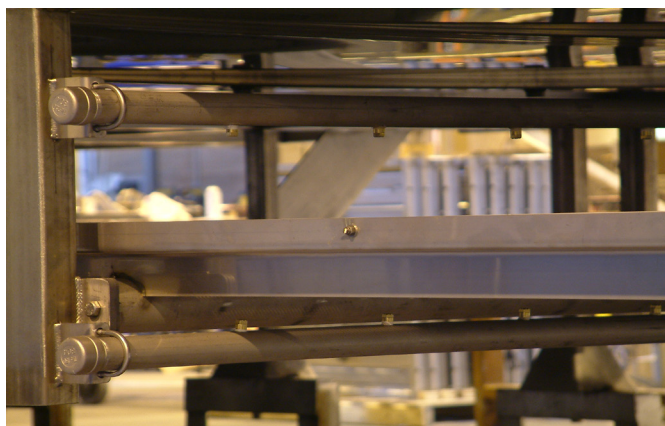
Less than perfect potatoes, like slivers and nubbins, can be processed as co-product, using the AeroDry single-pass dryer. During retrogradation, the product cools down over a long period of time to gelatinize the starch, which reinforces the product wall. This is an important process for hash brown products.



### **Drying dehydro-frozen products.**

For convenience and frozen food processors, the AeroDry dehydro-frozen dryer effectively processes value-added potatoes and vegetables, often diced for soups and stews. For these products, where the focus is on flavor concentration and water removal, a multi-stage configuration offers the operating flexibility needed to control process air, humidity, airflow rate and retention time at different stages of processing.





## Integrated cleaning.

Comprehensive cleaning systems thoroughly sanitize the dryer interior. Continuously welded pitched floors reduce product accumulation points while redirecting water and other cleaning fluids out of the dryer.

Belt scrapers located at strategic points throughout the dryer help to clean the conveyor during operation, keeping the airflow through the product at its highest.



## Increased energy efficiency.

The AeroDry makes optimal use of energy with a recirculated air and managed exhaust system. Fully insulated and independently-controlled process modules keep heated air within the dryer, while high efficiency drive motors and direct drive fans ensure energy costs are kept in check.



## Quick to install. Engineered to last.

The modular design of the AeroDry reduces shipping costs, installation time and onsite costs. A robust design that uses the heaviest gauge frames and bedplates in the industry, ensures reliable operation for the long term.



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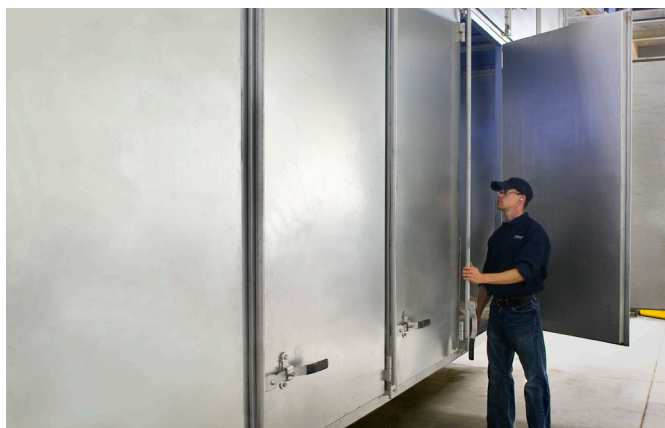


## Expertise and collaboration. **Support at every step.**



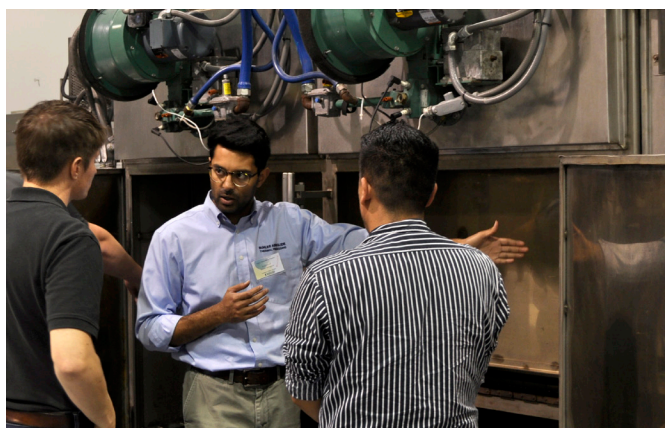
### **Food Science and Technology.**

From standalone solutions to integrated production lines, Bühler's unique know-how in the science of modern food production is proven out at laboratories and food innovation centers around the world. Food technologists help customers create food products, scale them for production and engineer value-added sources to manage food waste sustainably.



### **Global Presence, Local Support.**

Twenty-four hour support draws from the expertise of more than 1,200 field engineers around the world. Bühler conducts field evaluations for drying processes and mechanical performance around the world. The company also offer parts, retrofits and expansion support regardless of the dryer make or model.



### **Processing Education and Training.**

Bühler Aeroglide knows the drying step like no other. Specialized seminars help processors learn the theory of drying and how to apply it, to ensure product yield and profit margins. Customers frequently discover opportunities to improve processing operations and this results in new bottomline profits.



## **Bühler Aeroglide**

100 Aeroglide Drive  
Cary, NC 27511 USA

T +1 919 851 2000  
F +1 919 851 6029

[aeroglide.sales@buhlergroup.com](mailto:aeroglide.sales@buhlergroup.com)  
[buhlergroup.com/drying](http://buhlergroup.com/drying)