

## FOOD & BEVERAGE

### **Cost-effective Liquid Nitrogen dosing for snack food manufacturers.**

Technological advances in rigid containers caused most nut processors to abandon steel vacuum packed containers and package their nut products in composite cans flushed with nitrogen gas, which streamlined the packaging process. The most recent advancement in the evolution of packaged nuts is the use of liquid nitrogen. Vacuum Barrier Corporation has developed a cost-effective method to meter liquid nitrogen into composite, glass and plastic, containers effectively purging the container of oxygen.

Vacuum Barrier's method was to incorporate the use of liquid nitrogen (LN<sub>2</sub>) by means of liquid injection, creating a nitrogen-rich atmosphere. The rapid expansion of LN<sub>2</sub> displaces atmospheric air making it an effective and efficient method of purging oxygen. Vacuum Barrier Corporation provided significant advances in this process by establishing the protocol for direct LN<sub>2</sub> injection, eliminating the flushing tunnel. Traditionally, product traveled through a plastic tunnel filled with nitrogen gas, circulating throughout the tunnel. This method led to higher sanitation and labor costs because of the maintenance required cleaning the tunnels after each production run.

The process of direct LN<sub>2</sub> injection revealed multiple benefits. The manufacturer realized a 50-60% reduction in nitrogen gas use while consistently maintaining less than 3% oxygen content in each container, reduced maintenance costs with the elimination of the flushing tunnel, and the added benefit of instant dosing adjustment all led to a successful jointventure.

A spokesman for the manufacturer says,

“The implementation of Vacuum Barrier's LN<sub>2</sub> dosing equipment has been instrumental in allowing us to continually



achieve less than 3% oxygen content in our containers while significantly reducing our nitrogen consumption.”

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