

# >> NITROGEN GASSING SYSTEMS

## >> FEATURES:

- Evacuation/gas injection
- Gas purging (Flushing)
- Batch or Continuous
- Pre-gassing or post gassing systems
- Monitoring and control of residual oxygen levels.



## Nitrogen Gassing Systems or MAP Systems

Modified Atmosphere Processing Systems (M.A.P) remove Oxygen and replace with inert gases. Oxygen promotes several types of deteriorative reactions in food powders including fat oxidation, browning reaction etc. Inert gases such as Nitrogen or mixture of Nitrogen and CO<sub>2</sub> help to extend the shelf life and prevent product spoilage due to oxidation. Nitrogen Gassing systems are used in packing whole milk powders and other food powders . Designed to evacuate Oxygen and replace with Nitrogen or similar gas mixtures to achieve less than 1% Residual oxygen.

Typical systems are used with filling machines for cans, sachets, 25kg Bags, Bulk Bags and Bulk Bins.

## Control Systems

Systems include complete control systems for powder conveying, evacuation, Continuous on-line sampling provides Residual Oxygen measurement in real time and feedback control ensures performance to tight specifications.

## Evacuation/Injection or Gas Flushing (purging)

Depending on process requirements, gassing systems may be designed to operate on a batch process of evacuation followed by inert gas injection, or on a continuous basis with gas flushing of a powder vessel creating laminar flow and stratified oxygen reduction also known as purging . In general gas flushing/purging systems are simple but will have relatively higher nitrogen consumptions compared to evacuation and gas injection process



Powder Process-Solutions  
Div. of Powder-Solutions Group  
Ph: 877-933-2556  
sales@powder-solutions.com  
[www.powder-solutions.com](http://www.powder-solutions.com)

# >> NITROGEN GASSING SYSTEMS

## >> BENEFITS

- Low residual oxygen levels in finished product
- Extended shelf life in packed products
- Combined vacuum transport and pre-gassing systems



*Vacuum Pre-Gassing*

## Combined Vacuum Conveying & Pre-Gassing Systems

These systems use a vacuum conveying system and vacuum pump to convey powder from one or more storage hoppers, fully evacuate the Oxygen, and then back flush with Nitrogen or Inert Gas. This eliminates the need for a separate convey system providing a significant saving on capital cost.

## Post-Gassing Systems

Post-gassing is the process of gas replacement after filling; in other words gassing takes place after the product has been placed into its packaging.

Typical applications include post-gassing of products after packing into cans, sachets and pouches. These systems have very low gas consumption and require specialized technology.

## Pre-Gassing & Post-Gassing Systems

Depending on process requirements, PPS uses two main technologies. These are commonly known as Pre-Gassing and Post-Gassing.

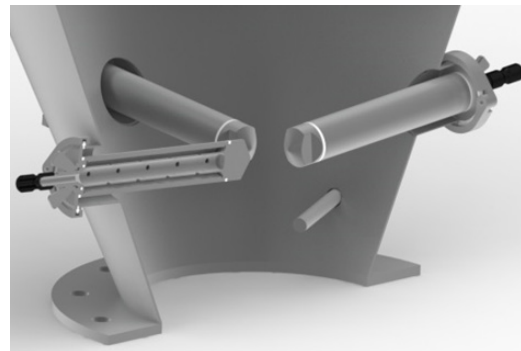
In both methods, oxygen is removed from the product and inert gas is introduced as replacement.

Both methods have their relative advantages and disadvantages: depending on factors such as product type, processing speed and cost of inert gases.

## Pre-Gassing Systems

Pre-gassing is the process of gas replacement prior to filling, where the product is treated separately before filling process. Pre-gassing systems are designed in such a way to provide product with low and controlled residual oxygen levels to the packing machines.

Typical applications include pre-gassing of products before packing into bulk bags/bins/25 kg bags and boxes/drums.



*Gassing Wands*



Powder Process-Solutions  
Div. of Powder-Solutions Group  
Ph: 877-933-2556  
sales@powder-solutions.com  
[www.powder-solutions.com](http://www.powder-solutions.com)