impressed by vQM

+31 (0)344 670 586

info@vqmpackaging.com

New protective packaging for conservation of

Tea

Conservation issues

broken tea leaves are very vulnerable when it isn't stored under the right conditions. Many factors can influence the quality of the tea like light, temperature, moisture, oxygen and even off odors. There for its important to use the right packaging. By packing the tea hermetically and flushing it with N2 you can stop the oxidation of the tea, so the shelf life will increase massively.

It isn´t a secret that moisture needs to be kept away from the stored tea. Tea releases their flavors when they come in contact with moisture. Therefor you need to pack the stored tea hermetically to prevent moisture inside the packaging. By doing this you also protect the broken leaves against strong off odors. Tea can absorb any odors that come in contact with them and this can lead to a unpleasant taste.

The optimal way to pack and protect the broken tea leaves is our aluminum FIBC and flush it with nitrogen. By doing so you can stop the oxidation of the leaves and protect them against light, moisture, odors and even insects will be killed.

	Vacuum only	*N_2 flushed and vacuum*	*N2 no vacuum*	*Co_2 flushed and vacuum*	***CO2 flushed no vacuum***
Aroma preservation	V	V	V	Not rec	Not rec
Stable humidity	V	V	V	ok	ok
Insect treatment	X	V	V	ok	ok

V proven beneficial

X Not beneficial

Ok No big advantages

Not rec Not recommended

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Optimum conservation conditions

The combination of the vQm valve, sealed inside a vacuum-proof, high-barrier liner, along with the vQm vacuum unit allows you to:

- ***Vacuum pack*** your peanuts on pallet size: in a FIBC with vacuum-liner or smaller bags inside a wrapping liner

- Create ***modified atmosphere (MAP), anoxic conditions***: by connecting an external nitrogen (or CO2) supply, the vQm unit can be easily programmed for multiple cycles of vacuum followed by injection of nitrogen. By doing so, an increased nitrogen concentration can be achieved with every cycle, reducing the residual oxygen concentration inside the packaging. By doing so an anoxic environment can be created that effectively minimizes the oxidation/rancidity. When the vQm protocol “MAP vacuum” is selected, the packaging remains under vacuum, while the protocol “MAP no vacuum” will leave the packaging at (ambient) pressure once the last cycle of gas injection has been completed.

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For what food applications the vQm used in general?

- The high barrier properties of the film that is used for the liner, in combination with the hermetic closure, allows you to ***maintain the moisture content*** of your product during the complete supply chain, from the moment of packaging. Minimize external influences on you product due to high humidity, condensation or direct water contact. If packed under vacuum, no condensation will occur on the inside of the packaging.
- By creating MAP conditions of extreme low oxygen or high CO2 concentration or by maintaining vacuum over an extended period of time, ***all insects in all life stages can be eradicated***. Most quick and easy is high CO2, if the product can endure these conditions. Otherwise low-oxygen in combination with vacuum is the most applied alternative. Since the packaging is hermetic, ***no re-infestation*** can occur as long as it remains intact.
- Often, the quality of products is negatively affected by oxidation. By reducing the number of oxygen molecules in the packaging, this ***oxidation can be minimized***. Oxidation of (lipid) fats and oils in e.g. nuts, powders, seed or brown rice is known as *rancidity*. Oxidation is also causing *decolorization* of products, e.g. dried chilies, spices or herbs.
- ***Preservation of taste and aroma's***. Aroma (or smell or odor) is the sensation perceived when volatile compounds are sniffed through the nose and directly impact on the perceived taste. These volatile compounds can best be preserved in hermetic, anoxic or vacuum conditions. Products that can benefit from are e.g. dried spices, dried herbs and tea.
- Other additional benefits could be e.g. ***reduction of breakage*** (nuts), as the product is fixated under vacuum, ***volume reduction*** (fluffy powders, tea, chilies etc), ***reduced temperature fluctuations*** during the supply chain (under vacuum: temperature transfer is inhibited; particularly useful for e.g. green coffee when shipped in containers with big temp fluctuations inside the container (day/sun vs night).