

What is food grade nitrogen and is it safe to use it in food packaging?



One of the things that always comes to our mind when buying a bag of chips is whether we are buying chips or a bag of chips filled with air? And another thing that comes to our mind is why do chips become soft or sour if the package is opened for a while?

Injecting packaging gas when packaging food helps to slow down food spoilage and effectively increases the life span.

Understanding packaging gases

Ambient air contains nearly 78% nitrogen, 21% oxygen and a small amount of moisture. When foods like potato chips are left open to the air, they absorb moisture and quickly become soggy or spoiled. When reacting with the unsaturated fatty acids present in food, oxygen can cause the food to spoil and become tasteless. In addition, it is a challenge for food manufacturers to maintain the desired quality and extend the shelf life of their food products. The use of packaging gases provides an effective solution for food manufacturers and packaging industrialists. Packaging gases are injected into food products during, before or after production to prevent oxidation. Nitrogen is one of the most widely used gases in food products such as bakery products, dried fruit snacks, processed meat products, etc.

Nitrogen as a packaging gas

Nitrogen has gained so much popularity in the food packaging industry that it is now also used in the brewing and coffee industries. It is used in breweries to create "nitro beers" and in the coffee industry it is used to create "nitro beers" to give a richer flavor to the final product.

Nitrogen is the exact opposite of ambient air. Atmospheric air consists of more oxygen and less nitrogen, but nitrogen used for packaging consists of more nitrogen and less oxygen and moisture. Nitrogen is inert in its state; it does not react with the color or flavor of the food. The injection of nitrogen into food packaging can exclude the presence of oxygen and moisture. Thus, changing the atmosphere inside the package can result in optimal food quality and longer food life.

The use of nitrogen in food packaging also helps to protect the delicate food inside the food package from being crushed during transportation or handling.

Packages should be tightly sealed to prevent nitrogen from escaping. Once the package is opened, the contents are exposed to oxygen and air, leading to oxidation and spoilage.

Therefore, it is always recommended that foods infused with package gas should be consumed as soon as the package is opened.

Is it safe to use nitrogen in food products?

Nitrogen has undergone many safety evaluations prior to its use in industrial applications. The World Health Organization Expert Committee on Food Additives has evaluated the safety of nitrogen and concluded that it is perfectly safe when used in food products following good manufacturing practices.

What is food-grade nitrogen?

Food grade nitrogen is very pure, i.e. 99% or better. It does not contain any impurities; therefore, it is very suitable for use in food products.

At XITE, we are in a large position to manufacture on-site nitrogen generators. Industrialists widely choose our on-site plants because they have a longer life span than other generators.

A large food manufacturer and packaging industry installed our 100 m³/h nitrogen plant and were completely satisfied with its performance.

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