

Natural, safe air filtration during transport and storage; Improves the shelf life of your fruits, vegetables, flowers and plants!

## ■ About ethylene gas

Ethylene gas is mainly produced by products breathing and stimulates the growth, development, maturation, but also the aging of the product. The transition from immature to mature product is called the climacterium phase. In this phase the products are beginning to produce ethylene gas themselves. The ethylene gas that is already produced stimulates the product to produce even more ethylene gas which increases the cumulative maturation. Reducing and controlling the ethylene content in one area delays the climacteric phase. Improving the quality and increasing the shelf life of your products.

## ■ How does the ethylene filter work?

The inside of the Entec ethylene filter is filled with Bio-Tec grains. This is a porous purple grain, which is impregnated with potassium permanganate (KMnO<sub>4</sub>). This potassium permanganate is an oxidizer, a substance which removes ethylene and microorganisms from the air. Because the grains are micro porous, is also the inside of the grains active. After a few months the Bio-Tec are starting to be saturated and have to be replaced. The grains are harmless to the environment and can be deposited in house, garden and kitchen waste. The Bio-Tec grains clean the air of ethylene, microorganisms and other pollution factors. No residue is left in, or on the fruits, vegetables, flowers or plants left. The cold air is cleaned via oxidation by combustion. Resulting in guaranteed quality and longer shelf life of your product!

## ■ Integrated air sterilization

Ionization provides a sterile air en prevents cross infection, which is good for your product quality, your company name en eventually your price.

To shield the good quality starting at the source, we are delivering our products in our home market as well as abroad and in all the phases of the distribution chain. It is certain that in the distribution as well as in storage the chances are higher for infection. Bioclimatic helps you to contain your products in an optimal state.



**With ionization the following pollution is removed from the air:**

- Moulds (Botrytis among them)
- Dust
- Virusses
- Polls
- Bad smells
- Bacteria

# Ethylene abatement & improving air quality

## ■ The results:

- A hygienic atmosphere free of ethylene, fungal spores, fungi and bacteria;
- Reduced loss due to rotting fruit, vegetables, flowers or plants;
- Reduction in the rate of ethylene production: this is the aging process (loss of weight and atrophy of the skin of fruits and vegetables);
- Maintain firmness, acidity and sugars in fruit;
- Maintain the original colour, reduce loss of chlorophyll;
- Significant reduction of bacteria and fungi, including Botrytis, Penicillium, Monillia and other.

## ■ How does ionization work?

By using bi-polar ionization the Bioclimatic systems are able to purify the air in a natural and efficient way. Adding energy to the air (activation) the molecules split near the discharge tube. A large proportion of these molecules are oxygen ( $O_2$ ). The  $O_2$  is turned into loose oxygen atoms ( $O^*$ ) which contain a positive charge or a negative charge. Also other atoms passing by go through the same splitting. Filthy carbon hydrogen, stench molecules etc. get converted in oxygen and (mostly) carbon dioxide. The loose atoms are heavily charged (reactive) and contain a high capacity for burning other molecules, this state only lasts for a short time (around 1ms). By doing so all bacteria, mould and viruses are destroyed efficiently. Osmogens and other components causing bad odours are burned.

