

POLISHING FILTER



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The global community of soft drink producers has increased the demand for ingredients at the highest purity level. The most referred impurity problems recently are related to carbon dioxide and the recommended measure to be taken as a safety against high notes of specific impurities is the introduction of the gas phase CO₂ Polishing Filter.

Union Engineering a/s based in Fredericia, Denmark, is highly specialized in CO₂ related businesses and has designed a range of carbon dioxide polishing filters, matching the following CO₂ gas flow rates:

Unit:	Design capacity CO2 gas:
PFU 0300	300 kg/h
PFU 0500	500 kg/h
PFU 1000	1000 kg/h
PFU 1500	1500 kg/h
PFU 2000	2000 kg/h
Other capacities on request	
Design Pressure: 20 bar gauge	
Design code: As per customer requirements	

Table 1. Product range and CO₂ gas flow rates

CO₂ POLISHING FILTER

Description of Polishing Filter Unit

The polishing filter is intended as a final, valuable safeguard to remove trace amounts of impurities that might be present in the carbon dioxide gas.

The CO₂ gas from the CO₂ evaporator is led to the CO₂ Polishing Filter inlet manifold through a bypass shutoff valve system to the filter bed. Before being sent to the point of consumption, the CO₂ gas passes a particle filter for removal of possible dust residues originating from the activated carbon filter bed.

The Union Engineering activated carbon filter bed consists of a special mix of activated carbon, which is specifically blended for this application and is able to remove peaks of oxygenates (alcohol, aldehydes, ketones), hydrocarbons (benzene, oil), nitrogen dioxide and various compounds of sulphur.

The particle filter installed after the Polishing Filter has a rating of 1 micron ensuring an absolutely dust-free CO₂ gas being sent to the point of consumption in the bottling company.

Lifetime of bed material is 6 months of normal operation, and the activated carbon bed must be replaced, if the carbon bed has been exposed to non-spec. CO₂ as specified by major soft drink companies.

The Polishing Filter is delivered as a complete prepacked skid mounted unit with only inlet and outlet connections to be made upon arrival on site.

Operational Characteristics

The Union Engineering Polishing Filter is designed to prevent instantaneous impurity peaks making their way to the point of consumption in the beverage plant. The figure above shows how a high note of a specific impurity will be caught by the highly efficient activated carbon bed material, and hereby ensuring a consistent CO₂ quality from the Polishing Filter unit.

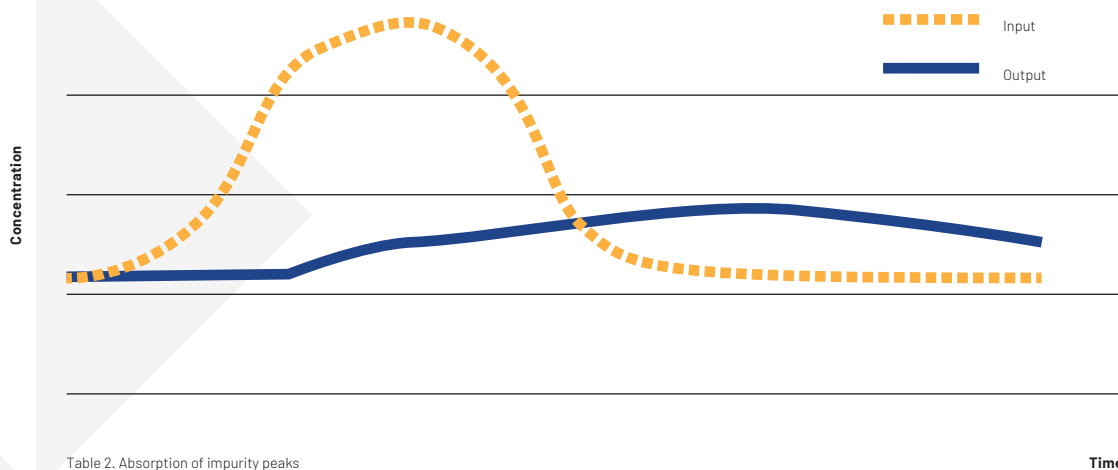


Table 2. Absorption of impurity peaks

Time