

# HAFFMANS CPM® FILTER SYSTEMS

## CO<sub>2</sub> FILTER SYSTEM FOR SOFT DRINK PLANT

CASE STUDY

### NEW STANDARD IN GAS FILTRATION – FIVE-STAGE CO<sub>2</sub> FILTER SYSTEM

**Pentair Haffmans, in cooperation with a world-leading soft drink producer, developed a new standard in gas filtration featuring a five-stage carbon dioxide (CO<sub>2</sub>) filter system with an integrated control and monitoring system.**

The CO<sub>2</sub> used in soft drink production must meet the highest quality requirements and is subject to strict quality control.

To prevent contamination of the CO<sub>2</sub> as it moves from the CO<sub>2</sub> storage tanks to the mixer, Pentair Haffmans provides a five-stage filter combination of coalescence, activated carbon and sterile filters that remove any oils, particles, hydrogen sulfides, aromatic hydrocarbons, or carbonyl sulfides (COS) present in the CO<sub>2</sub>.

#### Automation Provides Highest Process Safety

The safety provided by filter systems can be compromised due to the fact that many soft drink producers simply follow manufacturer's instructions on when to replace the filter elements, which in many

cases does not correspond with the actual wear. To assure higher product safety, Pentair Haffmans automated this process through a control and monitoring system.

The existing filter system was extended with a High-Flow Activated Carbon Filter. To prevent any overload of the filter, an integrated measuring and control system with a flow meter regulates the maximum filter capacity according to specifications. The actual flow rate through the activated carbon filter plus the total flow since the last filter element change, along with a day counter are displayed on a monitor.

Before the filter reaches maximum capacity a notice on the screen informs the operator about the upcoming filter element change. All filters of the five-stage system are coordinated with each other in regard to their capacities, which allows for easy filter element change coordination.

The Pentair Haffmans' system allows for trending over a specified time period. The daily flow rate of the filter system is stored

and can be displayed on the monitor as a trend line. The flow meter is equipped with a Profibus PA that enables a readout of volume flow, density and temperature, which are also displayed in the trending.

In summary, the filtration system allows for maximum process safety. Soft drink producers have a better overview on filter performance and can be assured that the optimal filter service life is maintained.

### KEY FACTS

#### Application

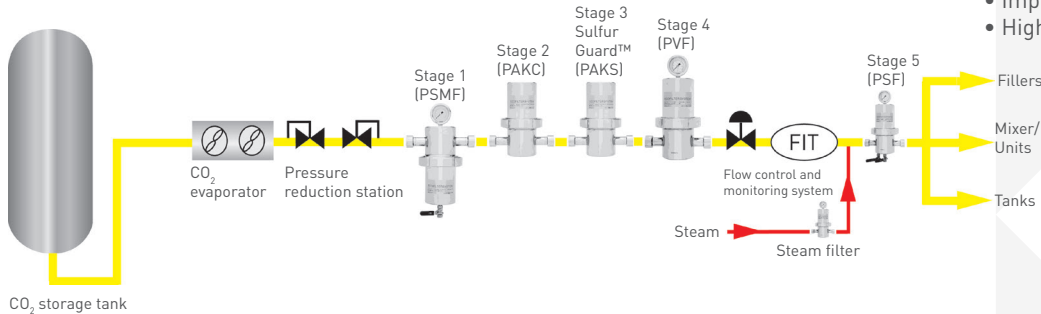
CO<sub>2</sub> filtration in soft drink production

#### Filter types used

CPM® Coalescence Filter, type PSMF  
 CPM® Activated Carbon Filter, type PAK(C)  
 CPM® Sulfur Guard™ Activated Carbon Filter, type PAKS  
 CPM® Pre-Filter, type PVF  
 CPM® Sterile Filter, type PSF

#### Benefits

- Filter performance overview
- Optimal filter service life assured
- Improved process safety
- Higher product safety



#### HAFFMANS BV

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