

# HAFFMANS CAS

## CO<sub>2</sub> ANALYSIS SERVICE

### GENERAL PRODUCT INFORMATION

Product quality and safety are essential in the beverage industry. Each beverage has to be free of hazardous contaminants that could be harmful, or negatively effect the taste, odor and/or shelf life of the product. As both recovered and/or commercially produced carbon dioxide (CO<sub>2</sub>) gas is often added to the product by means of carbonation, a frequent check for hazardous contaminants is vital. The CO<sub>2</sub> Analysis Service (CAS) offers the analysis of both commercial and recovered gas. In the latter case, the analysis is an excellent tool to check the performance of the CO<sub>2</sub> Recovery Plant.

When Pentair Haffmans receives an order, special protected sample bags, along with sampling instructions, are sent to the customer. The customer fills the sample bags according to the instructions and returns the bags to Pentair Haffmans.

Within five working days an objective analysis report is prepared and returned to the customer. This report specifies the measured concentrations of the CO<sub>2</sub> in the customer's sample and compares it to normal industry standards. If concentrations are too high, the customer can contact Pentair Haffmans' CO<sub>2</sub> Systems Service Department for further assistance and to ensure that fast and complete service can be performed.



### CUSTOMER BENEFITS

- **Perfect product control**
  - confirmation of CO<sub>2</sub> quality
  - able to detect very low limits
  - detection of unexpected compounds
  - objective measurement
- **Verifies performance of CO<sub>2</sub> Recovery Plant**
- **Know-how center for CO<sub>2</sub>**

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### TECHNICAL DATA

#### Sulphurous compounds

Hydrogen sulphide (H<sub>2</sub>S)  
Carbonyl sulphide (COS)  
Dimethyl sulphide (DMS)

#### Alcohols

Methanol  
Ethanol  
1-Propanol  
Iso-butanol  
2-Methyl-1-butanol  
3-Methyl-1-butanol

#### Organic compounds

Acetaldehyde  
Acetone  
Ethylacetate  
Ethylpropionate  
Iso-amylacetate  
Ethylcaproate

#### Aromates

Benzine  
Toluene

The CO<sub>2</sub> samples are analyzed with a gas chromatograph with mass spectrometer detector (state-of-the-art gas chromatical analysis)

#### Gas chromatical detection limits

Alcohols	1 ppb w/w
Organic compounds	1 ppb w/w
Aromates	1 ppb w/w
H <sub>2</sub> S	20 ppb w/w
COS	10 ppb w/w
DMS	1 ppb w/w

### SCOPE OF SUPPLY

- Sample bag
- Sampling procedure
- Shipping instructions
- Analysis report

### OPTIONS

- CO
- CH<sub>4</sub>
- NO<sub>x</sub>
- NH<sub>3</sub>



#### HAFFMANS B.V.

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