

Refreshing Insights

Elevating Beverage Quality Through Trusted  
Air Treatment Expertise



- Introduction  
Air Quality - ISO 8573-1 Classes
- Case Study: Beverage Bottling Company
- Compressed Air Filtration Solutions
- Air Quality Verification: Measurement Technology

## Compressed air quality according to ISO 8573-1

The DIN ISO 8573 series of standards deals with compressed air quality in nine parts. Parts two to nine include test methods. Part 8573-1 classifies compressed air by a maximum content of impurities (particles, water and oil) that may be contained in the airstream.

Air qualities in accordance with ISO 8573-1:2010

Class	Solid particles, max. number of particles per m <sup>3</sup>			Pressure dew point °F	Oil content (liquid, aerosol, oil vapor) mg/m <sup>3</sup>
	0.1 μm < d ≤ 0.5 μm	0.5 μm < d ≤ 1.0 μm	1.0 μm < d ≤ 5.0 μm		
0	In accordance with the unit operator's or supplier's specifications, stricter requirements than class 1				
1	≤20,000	≤400	≤10	≤-100	≤0.01
2	≤400,000	≤6,000	≤100	≤-40	≤0.1
3	-	≤90,000	≤1,000	≤-4	≤1
4	-	-	≤10,000	≤37	≤5
5	-	-	≤100,000	≤45	> 5
6	-	-	-	≤50	-

■ Measured in accordance with ISO 8573-4, ref. conditions 14.5 psi [a] absolute, 68 °F, 0% RH

■ Measured in accordance with ISO 8573-3

■ Measured in accordance with ISO 8573-2 and ISO 8573-5, ref. conditions 14.5 psi [a] absolute, 68 °F, 0% RH

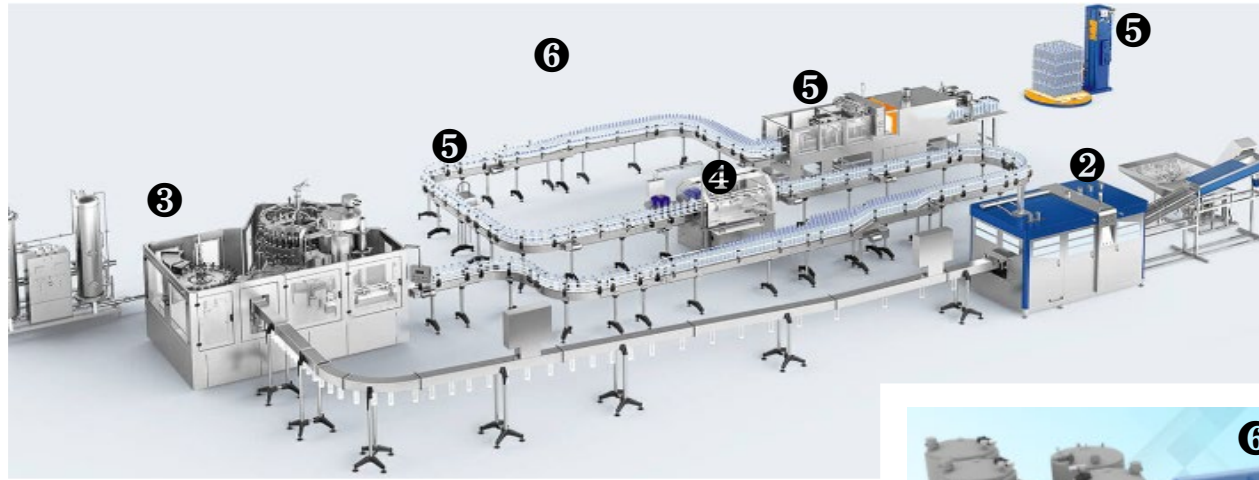
# Case Study: Beverage Bottling Company

- No air quality standard in industry – company standard had to be created
- Looking for someone who knows compressed air treatment
- Someone who recognizes causalities between air treatment and measurement technology
- Chose BEKO due to independent and unbiased opinion
- Consultation focused on what quality of compressed air they needed and the options to accomplish and monitor the air quality chosen
- Based on our advice, the compressed air classes were defined by the customer
- For food contact areas, customer decided oil-free compressors were mandatory, Filters, Refrigeration Dryers and Activated Carbon adsorbers were used.
- For everything else, oil-lubricated compressors were acceptable, Filters, Adsorption / Desiccant Dryer and Activated Carbon Adsorber were used.
- Measurement technology from BEKO was chosen to monitor parameters.
- European specifications rolled out to plants worldwide





# Case Study: Beverage Bottling Company



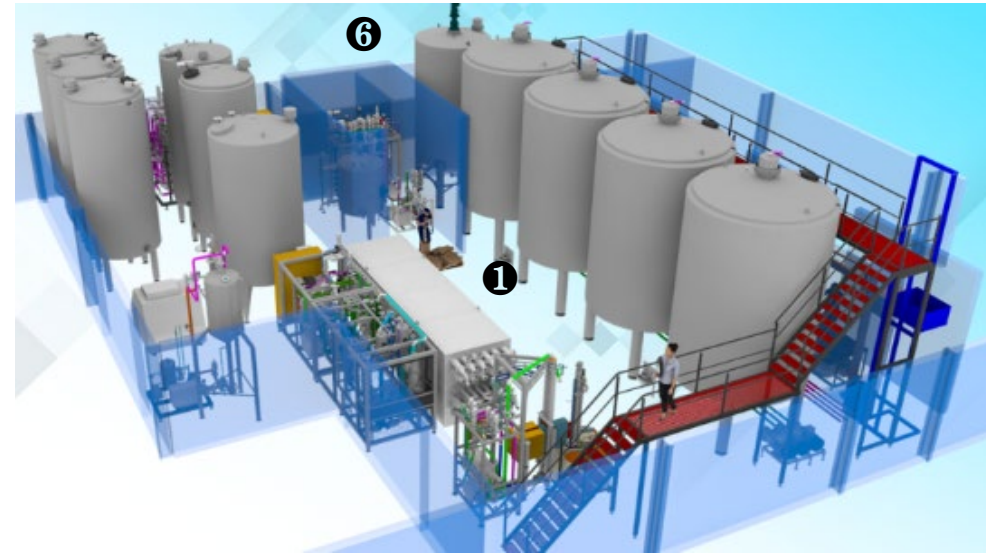
Mixing and Blending

① Product contact

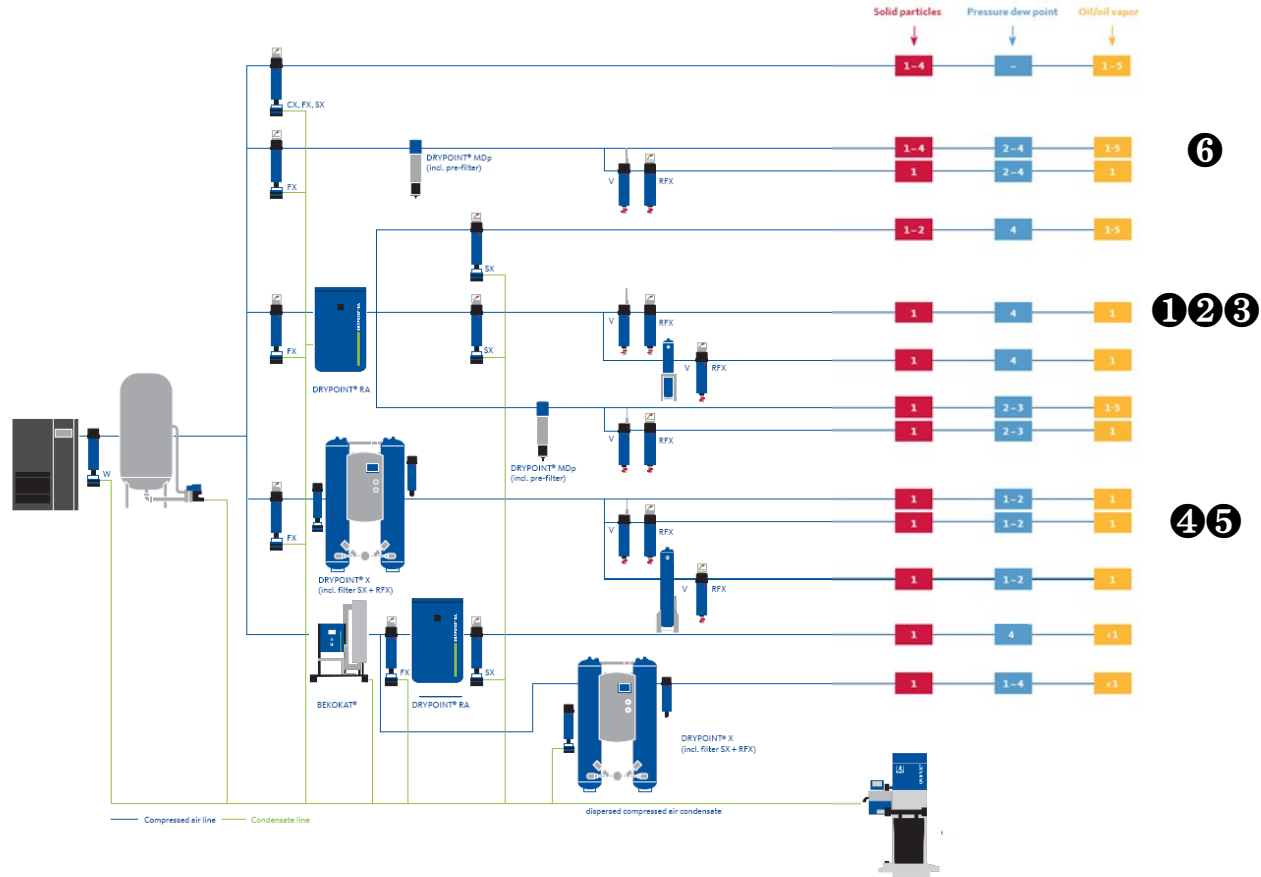
⑥ General purpose air for power tools and general maintenance

Production Line:

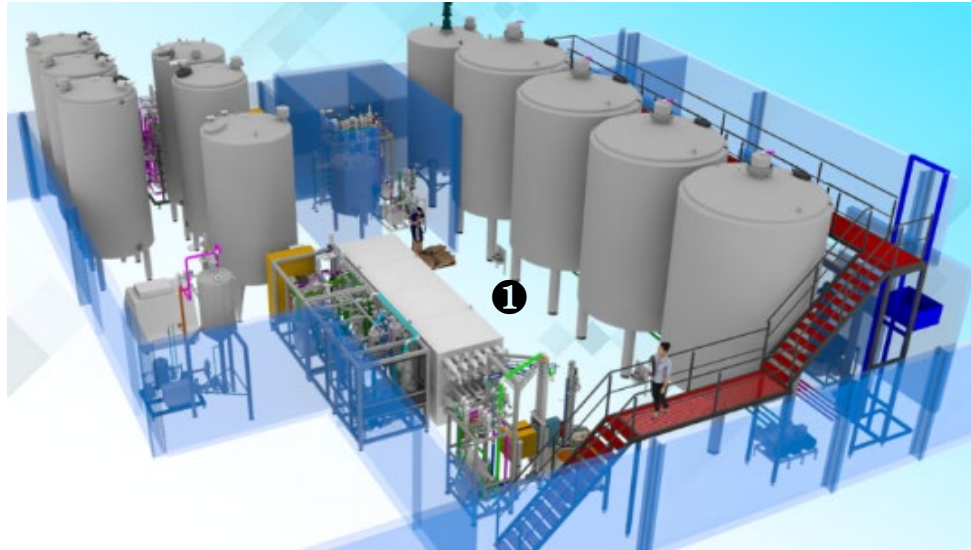
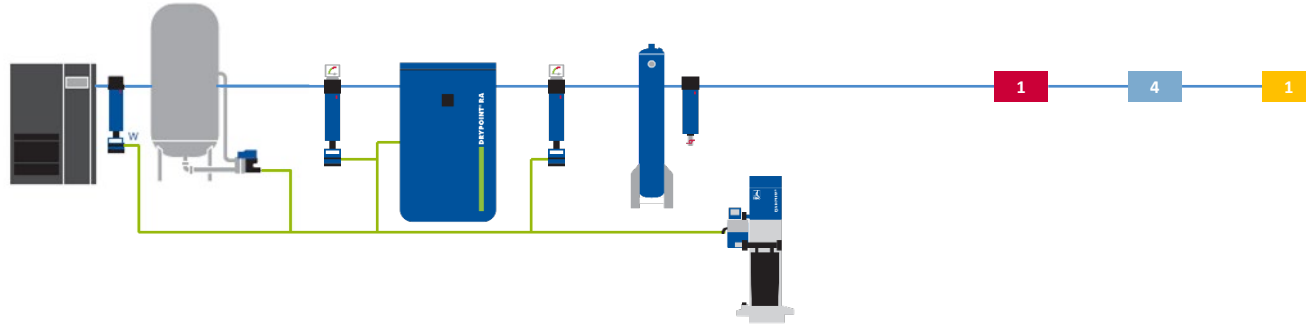
- ② Blow Molding High Pressure
- ② Blow Molding Low Pressure
- ③ Bottle Rinsing / Drying
- ③ Filling Valves
- ④ Air Knives - Bottle drying
- ④ Labeler various functions
- ⑤ Conveyors and secondary packaging
- ⑤ Air Knives - Bottle drying
- ⑥ General purpose air for power tools and general maintenance



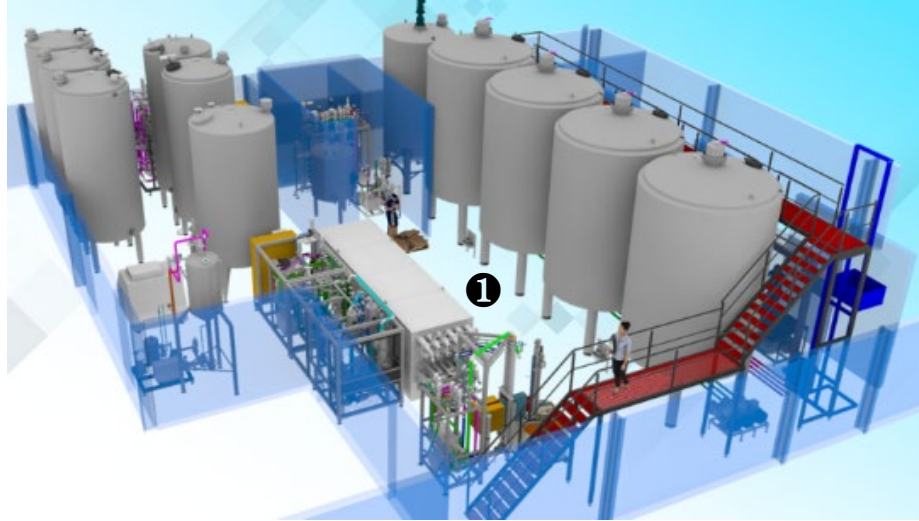
# Case Study: Beverage Bottling Company



# Case Study: Beverage Bottling Company



# Case Study: Beverage Bottling Company



Oil-free compressor

**Preparation Room Air quality: 1:4:1**

1 – CLEARPOINT® SX Super fine filter

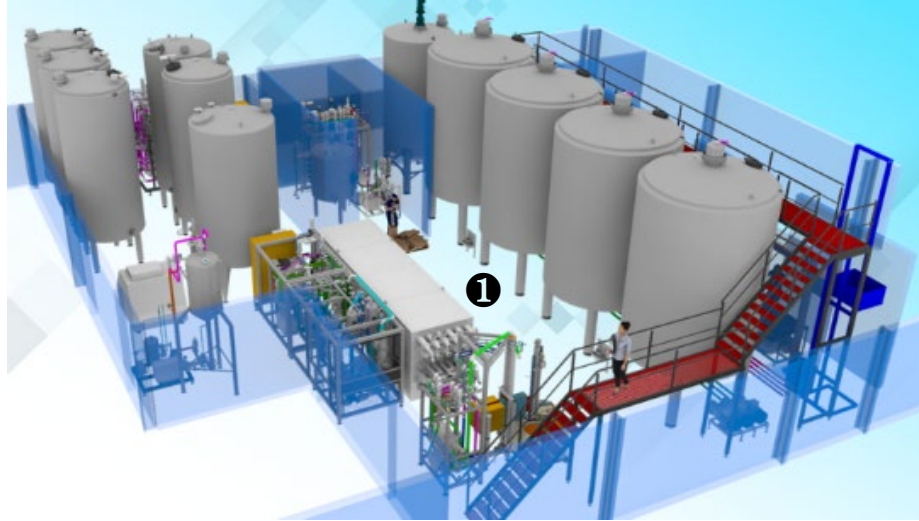
4 - DRYPOINT® RAx Refrigerant Dryer

1 – CLEARPOINT® V Activated Carbon Tower





# Case Study: Beverage Bottling Company



## Air Quality Verification and Data Logging\*

METPOINT SD – Dew Point Sensor

METPOINT SP – Pressure Sensor

METPOINT FLM – Flow Meter Sensor

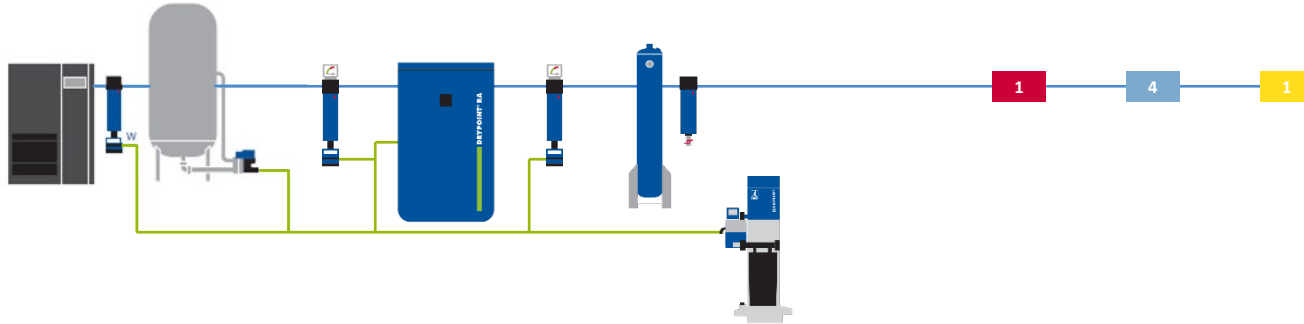
METPOINT OCV – Oil Vapor Sensor

METPOINT BDL XL – Data Logger

\*PC 400 Particle counter  
available with options for  
0.3 $\mu$ m and 0.1 $\mu$ m



# Case Study: Beverage Bottling Company



# Case Study: Beverage Bottling Company



Oil-free compressor

**Blow Molder Air quality: 1:4:1 High/Low Pressure**

1 - CLEARPOINT SX HP (with CLEARPOINT PN50)

4 - DRYPOINT RS – High Pressure Refrigerant Dryer

1 –CLEARPOINT V HP Activated Carbon Tower





# Case Study: Beverage Bottling Company



## Air Quality Verification and Data Logging

METPOINT SD – Dew Point Sensor

METPOINT SP – Pressure Sensor

METPOINT FLM – Flow Meter Sensor

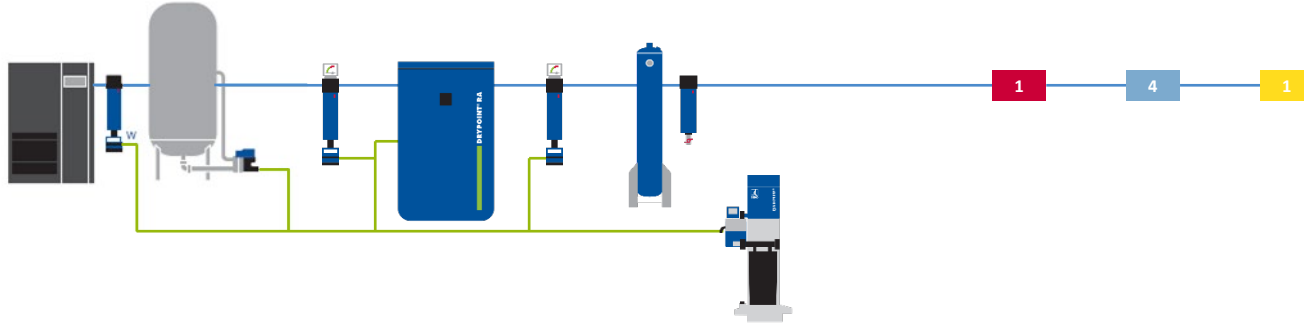
METPOINT OCV – Oil Vapor Sensor

METPOINT BDL XL – Data Logger





# Case Study: Beverage Bottling Company



# Case Study: Beverage Bottling Company



Oil-free compressor

**Filler Air quality: 1:4:1 Low Pressure**

1 - CLEARPOINT SX

4 - DRYPOINT RAX Refrigerant Dryer

1 - CLEARPOINT V Activated Carbon Tower



# Case Study: Beverage Bottling Company



## Air Quality Verification and Data Logging

METPOINT SD – Dew Point Sensor

METPOINT SP – Pressure Sensor

METPOINT FLM – Flow Meter Sensor

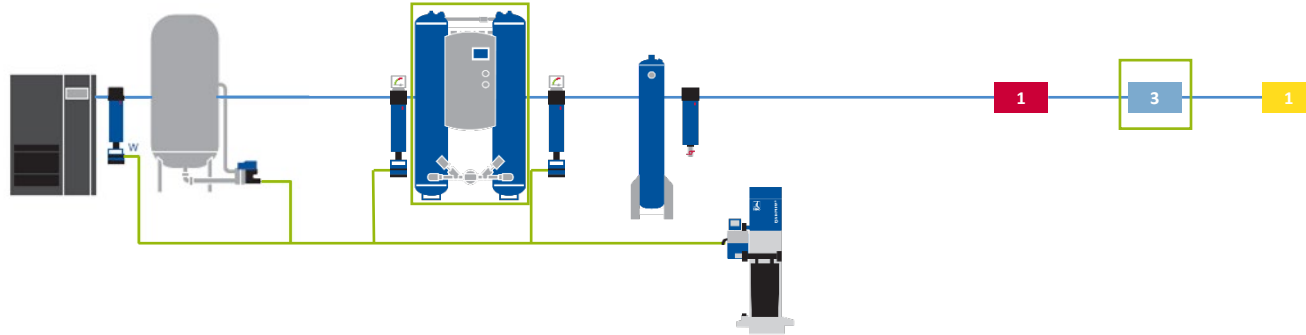
METPOINT OCV – Oil Vapor Sensor

METPOINT BDL XL – Data Logger





# Case Study: Beverage Bottling Company





# Case Study: Beverage Bottling Company

④



Oil lubricated compressor

**Labeler Air quality: 1:3:1 Low Pressure**

1 - CLEARPOINT SX

3 - DRYPOINT XFi Desiccant Dryer

1 - CLEARPOINT V Activated Carbon Tower



# Case Study: Beverage Bottling Company

4



## Air Quality Verification and Data Logging

METPOINT SD – Dew Point Sensor

METPOINT SP – Pressure Sensor

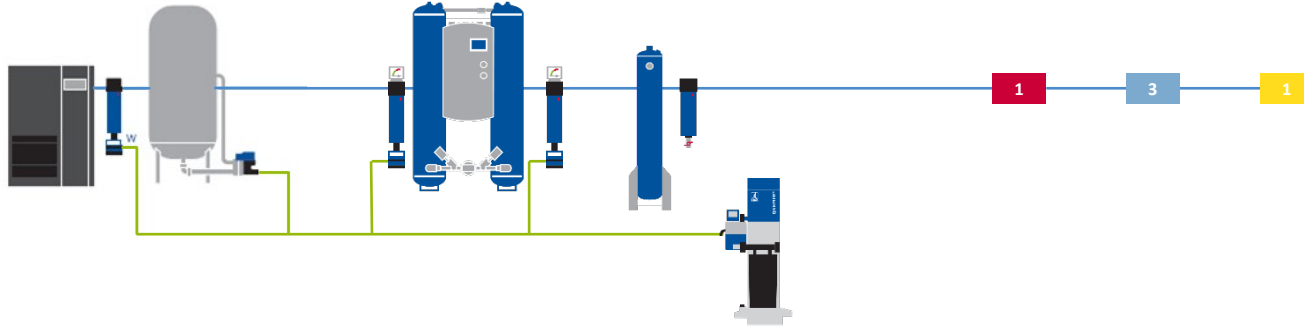
METPOINT FLM – Flow Meter Sensor

METPOINT OCV – Oil Vapor Sensor

METPOINT BDL XL – Data Logger



# Case Study: Beverage Bottling Company



# Case Study: Beverage Bottling Company



Oil lubricated compressor

**Conveyors and Secondary Packaging Air  
quality: 1:3:1 Low Pressure**

1 - CLEARPOINT SX

3 - DRYPOINT XFi Desiccant Dryer

1 – CLEARPOINT V Activated Carbon Tower





# Case Study: Beverage Bottling Company



## Air Quality Verification and Data Logging

METPOINT SD – Dew Point Sensor

METPOINT SP – Pressure Sensor

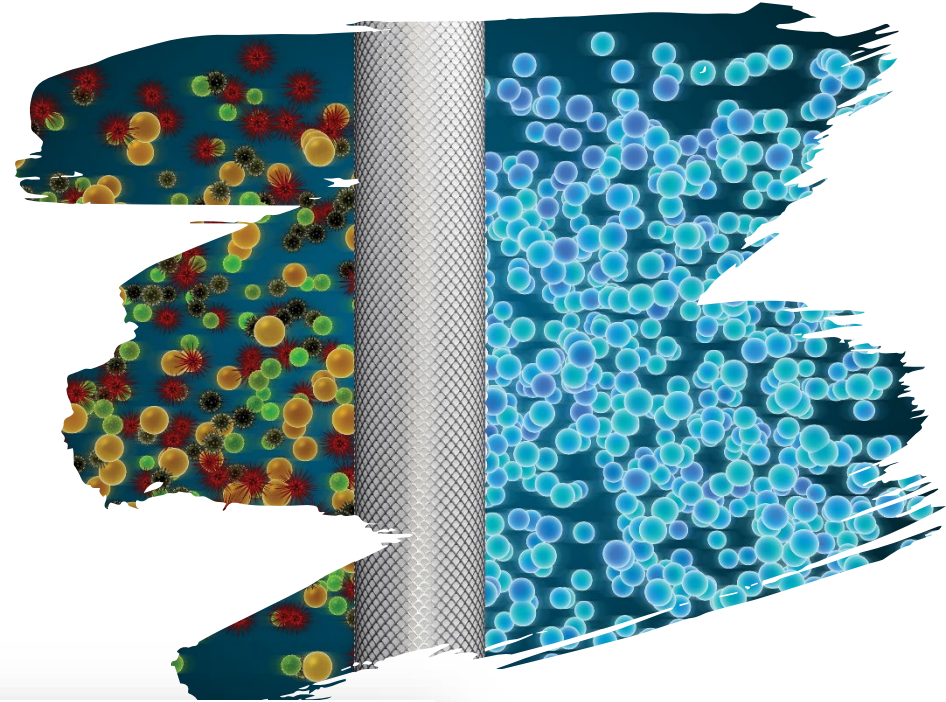
METPOINT FLM – Flow Meter Sensor

METPOINT OCV – Oil Vapor Sensor

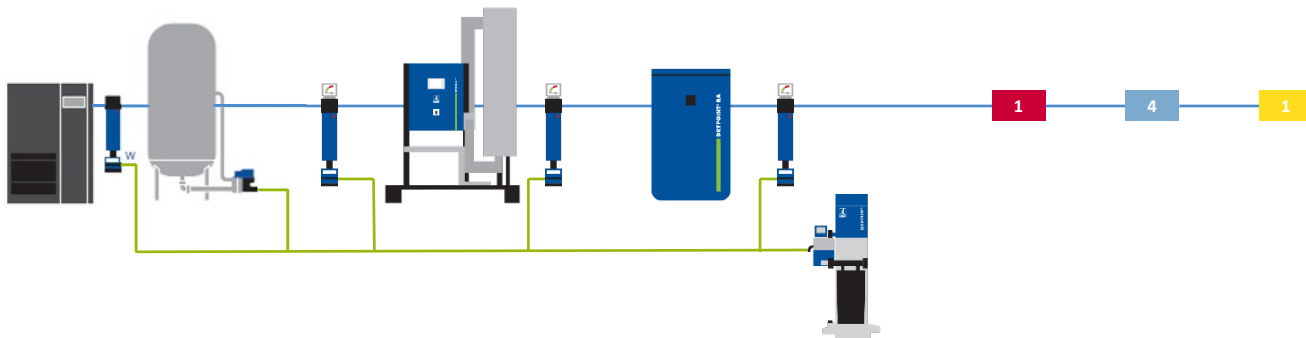
METPOINT BDL XL – Data Logger



What is compressed air  
filtration?



**CLEARPOINT®**



- New standard for IFS Food Standard certification
  - Class 1 for residual oil content
- Multiple approaches were examined but costs too high
- CLEARPOINT filters, BEKOKAT, DRYPOINT RA and METPOINT
- Maintained Class 1





- Chocolate Manufacturer
  - **High quality standard (Class 1:4:1)**
  - IFS New Food Standard certification
  - Use of CLEARPOINT filters with BEKOKAT and DRYPOINT RA





# Compressed Air Filtration Solutions



## Air Quality Verification and Data Logging\*

METPOINT SD – Dew Point Sensor

METPOINT SP – Pressure Sensor

METPOINT FLM – Flow Meter Sensor

METPOINT OCV – Oil Vapor Sensor

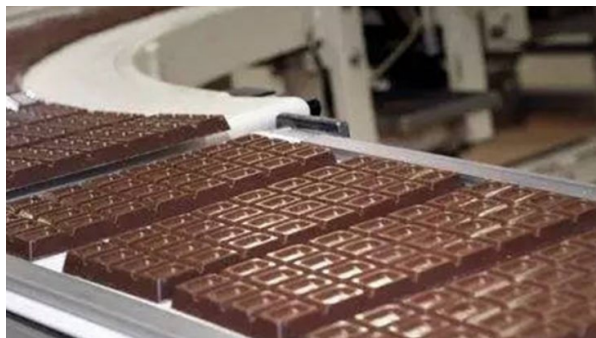
METPOINT BDL XL – Data Logger

\*PC 400 Particle counter  
available with options for  
0.3 $\mu$ m and 0.1 $\mu$ m



# Filter Types and Contaminants

Filter Type	Water Aerosols	Solid Rough Particles	Solid Aerosols	Oil Droplets/Oil Aerosol	Oil Vapor
Coalescence	X	X	X	X	
Particulate		X	X		
Activated Carbon Adsorber/Activated Carbon Filter					X



# Filter Elements

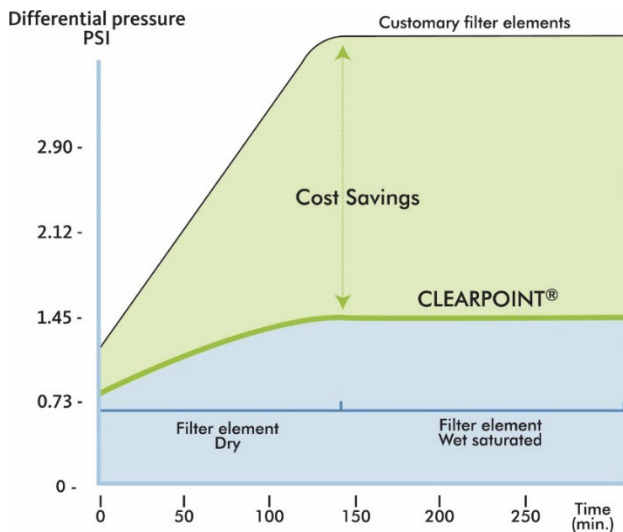
Element Types	Particle Size (Microns)	ISO 8573-1 Class
Coarse	2.0 - 5.0 $\mu$	4.-.4
Fine	0.5 - 2.0 $\mu$	2.-.2
Super Fine	0.1 - 0.5 $\mu$	1.-.2



# Other Things To Consider with Filtration

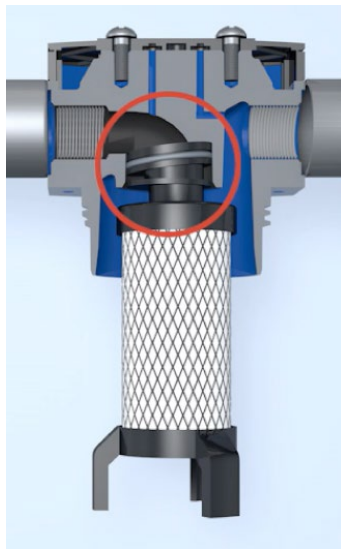
## Differential Pressure

- Key to an efficient system
- Low pressure drop = Cost Savings (every 2 PSI adds 1% to energy costs)
- BEKO Filter patent design supports low pressure drop



## Serviceability

- Regular filter maintenance is imperative
- Dirty/clogged filters reduce air flow
  - Air quality degradation
- BEKO “push fit” technology
  - Quick and easy replacement
  - Reduced system down time





How understanding the measurements of your compressed air system can improve the performance, reliability, efficiency, and safety of your facility.





**Would you ever drive a car without any gauges?**

- › Customer was not confident the Dew Point was consistent with the dryer's manufacturer information.
- › METPOINT SD Dew Point meter installed in conjunction with METPOINT BDL Data Logger without stopping the line.

## Our solution



# METPOINT technology = controlled processes

*The food industry wants safe products. An important influencing factor is the quality of the compressed air used at many points in the production process. The French syrup producer MONIN installed a new compressed air treatment unit from BEKO TECHNOLOGIES at its Bourges site*





## Our solution

The heart of the BEKO TECHNOLOGIES treatment system is the heat regenerating adsorption dryer with heated blower purge with integrated Dew Point Sensor

The METPOINT FLM flow meter offers precise point-of-use monitoring.

The METPOINT OCV monitoring system permanently monitors the residual oil vapor content in the compressed air network.

MONIN can thus permanently ensure the quality and purity of its process compressed air.



"Volume flow, compressed air consumption, air quality, everything is under control and traceable. As soon as a critical threshold is exceeded, an alarm message is triggered".



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