

BIAR   
Sampling Systems



**SAMPLING SYSTEM  
FOR LIQUID CHLORINE**

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# SAMPLING LIQUID CHLORINE

Sampling Liquid Chlorine with traditional flow through loop sample systems can be complicated and risky making the task one of the least desirable jobs in a Chlor-alkali plant. BIAR offers a different approach that results in a true representative sample the first time, every time, with ZERO exposure to plant personnel and ZERO emissions to the atmosphere.

Our “sampling system” offers a simple to use solution from taking the sample in the field, to delivering the sample to your lab analysis equipment.

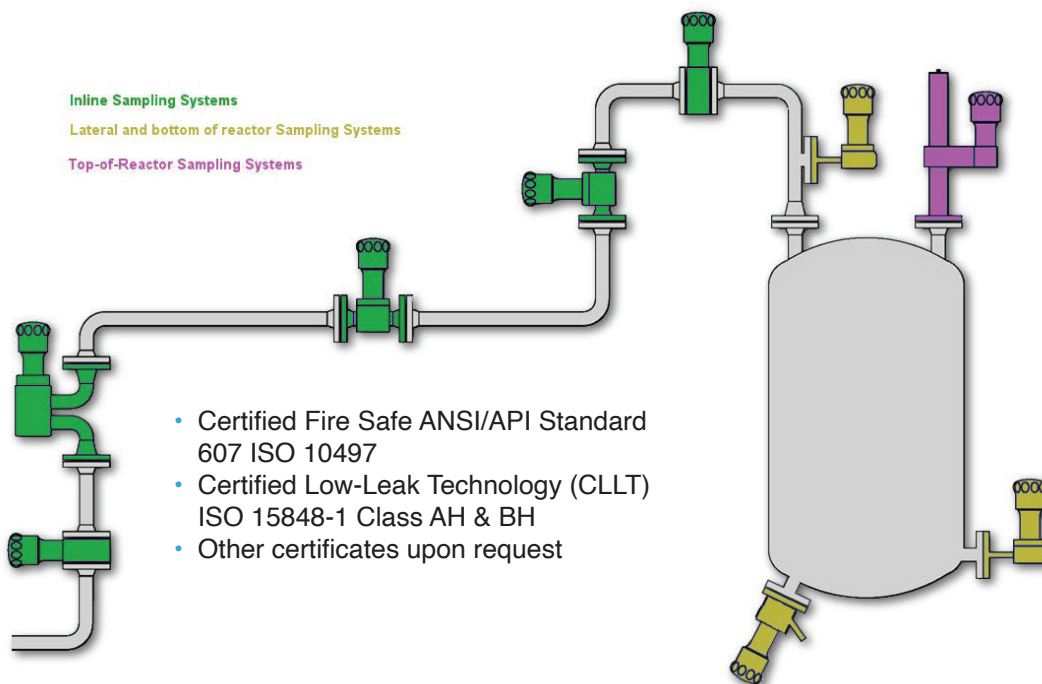
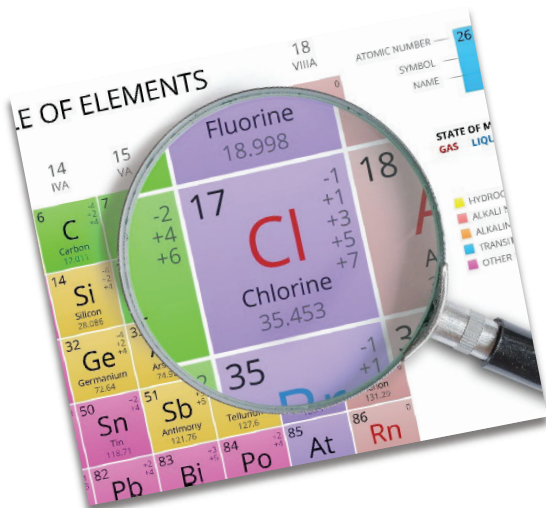
A simple sampling solution is a safe sampling solution.

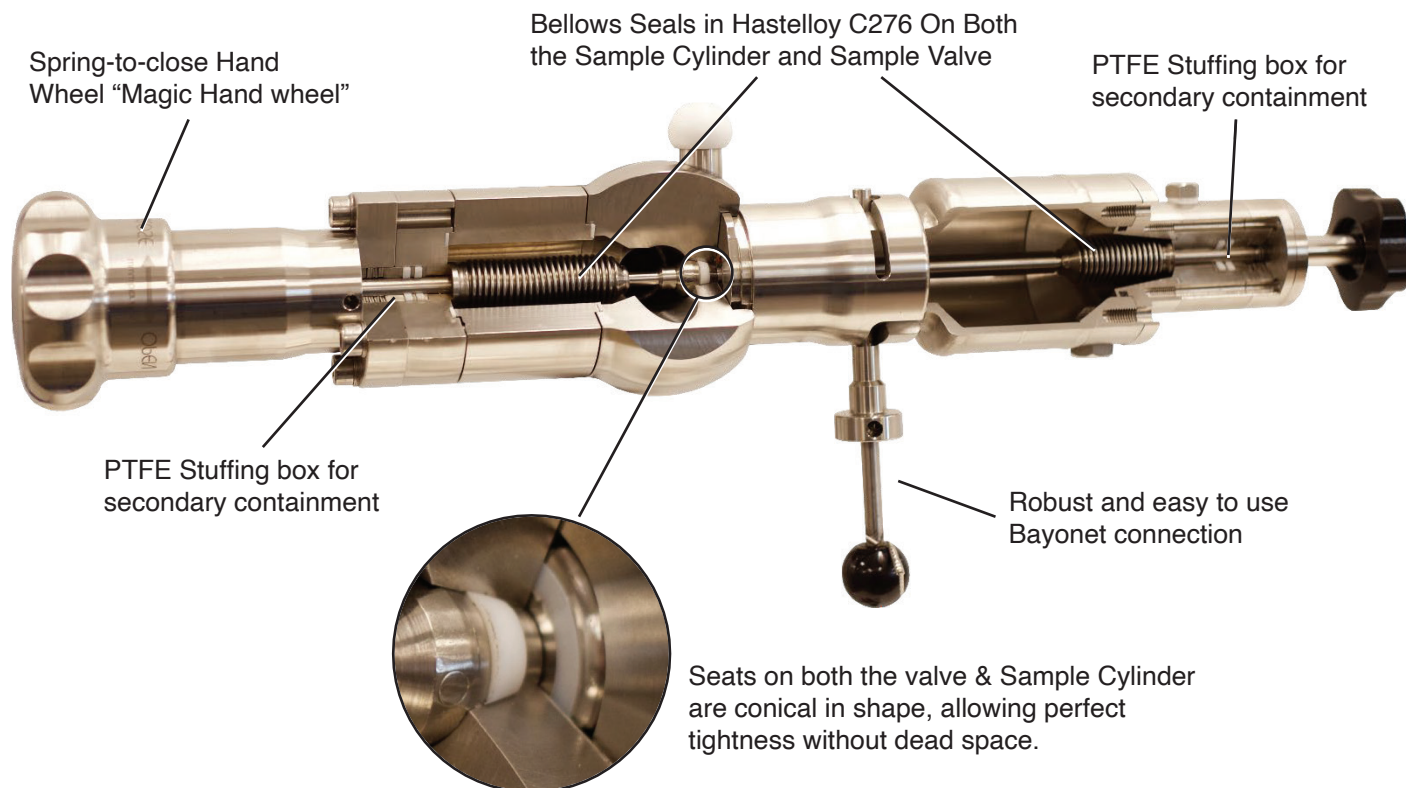
Fundamental principles of Sampling Hazardous Chemicals:

1. The sample must be **REPRESENTATIVE**
2. Sampling must be **SAFE**

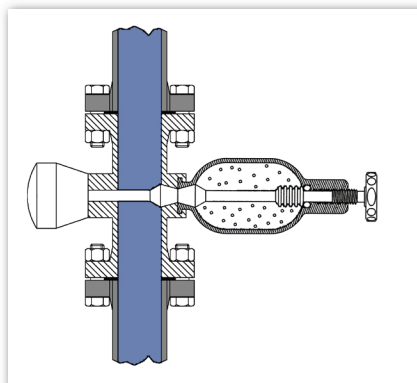
## SIMPLER IS BETTER

- Easy to learn & use
- Maintenance free
- No quick-connect & flexible hose

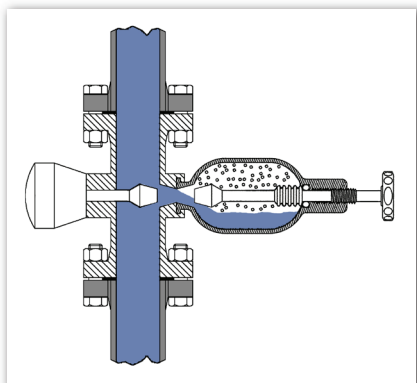




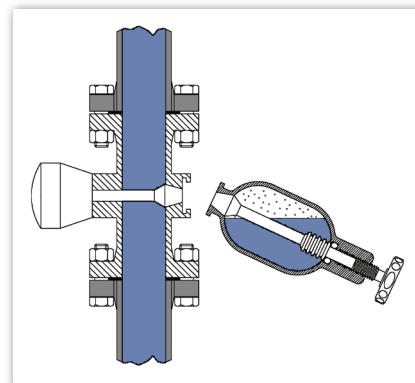
## SIMPLE & SAFE CONCEPT



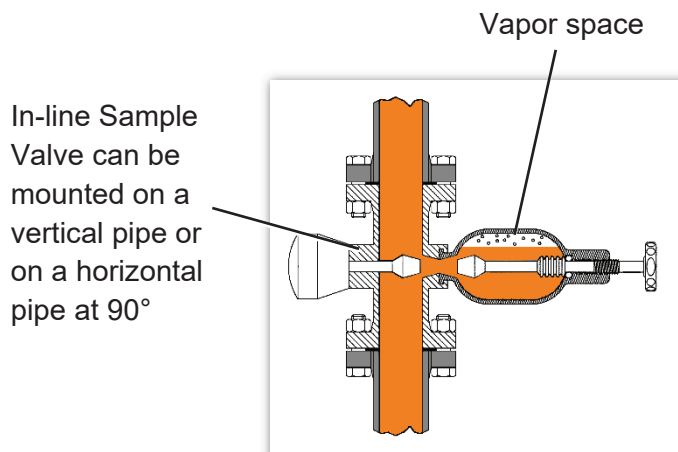
The Sample Cylinder has been cleaned / dried at the lab. When ready to use, simply connect it to the Sample Valve.



Open both the Sample Cylinder and the Sample Valve to collect a Representative Sample.



Once the Sample is grabbed, close both the Sample Valve and the Sample Cylinder. Disconnect the Cylinder from the Valve.



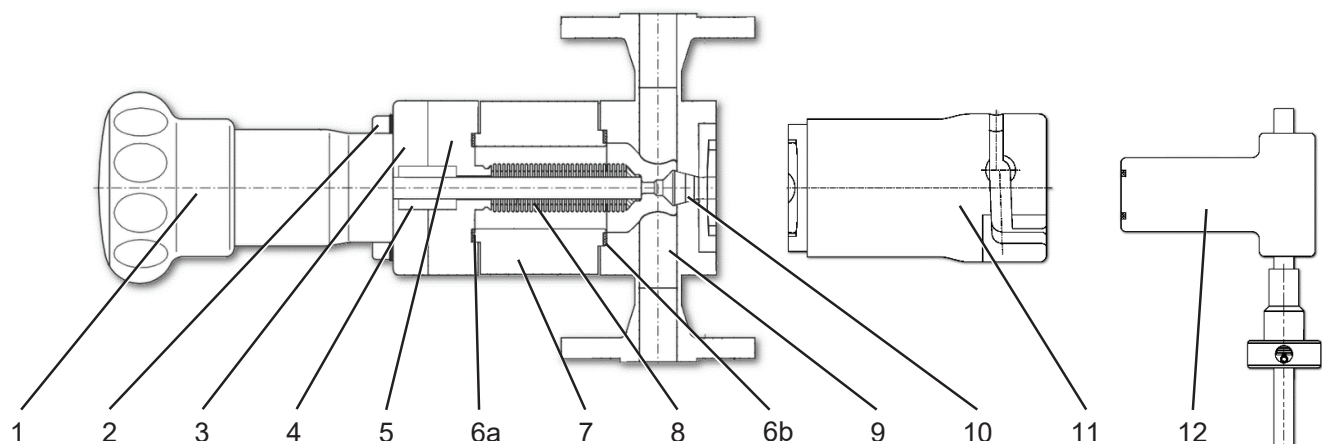
When used horizontally, BIAR sample containers COLUM-BIA-LY create a vapor space that is necessary for volumetric expansion of the liquid.

### Use

Outage is the vapor space in the cylinder expressed as a percentage of the total volume of the cylinder.

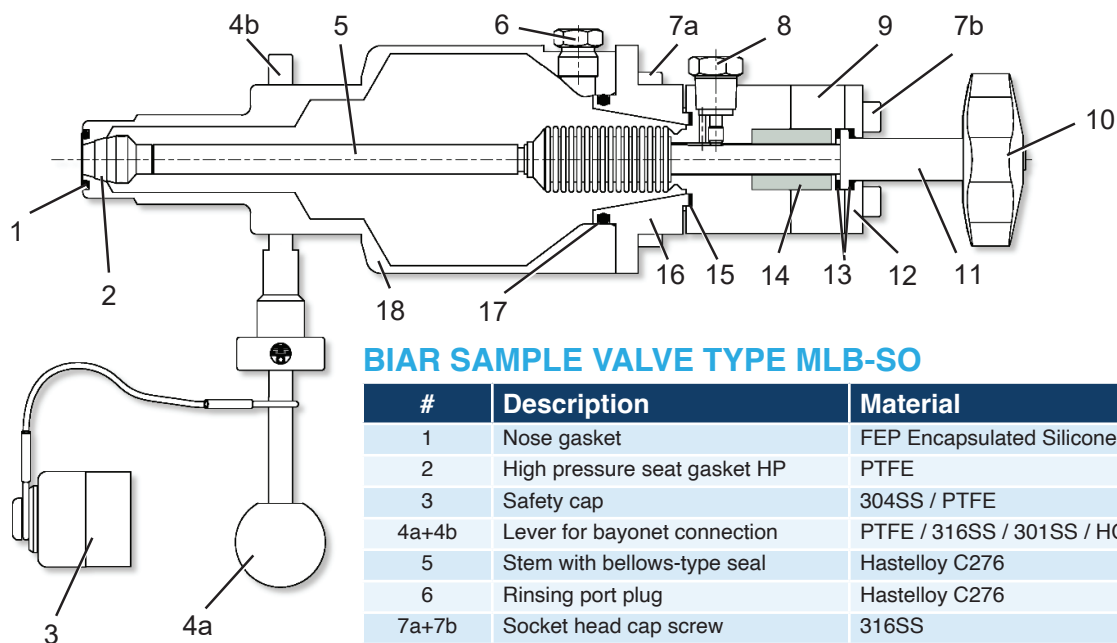
$$\% \text{ outage} = (\text{vapor space} / \text{total volume}) \times 100$$

BIAR Sample Cylinders provide 40% outage as standard.



### BIAR SAMPLE VALVE TYPE MLB-SO

| #     | Description                                       | Material                     |
|-------|---------------------------------------------------|------------------------------|
| 1     | Spring-to-close hand wheel (AKA Magic Hand Wheel) | 316SS                        |
| 2     | Socket head cap screw & Spring washer             | 316SS & 301SS                |
| 3     | Stuffing box cover                                | 316SS                        |
| 4     | Secondary stuffing box                            | PTFE / 316SS / 301SS / HC276 |
| 5     | Flange for bellows-type seal                      | Hastelloy C276               |
| 6a+6b | Body gaskets                                      | PTFE                         |
| 7     | Spacer                                            | Hastelloy C276               |
| 8     | Stem with bellows-type seal                       | Hastelloy C276               |
| 9     | Valve body                                        | Hastelloy C276               |
| 10    | High pressure seat gasket HP                      | PTFE                         |
| 11    | Bayonet connection                                | 304SS                        |
| 12    | Safety plug (secondary containment)               | 304SS / PTFE                 |



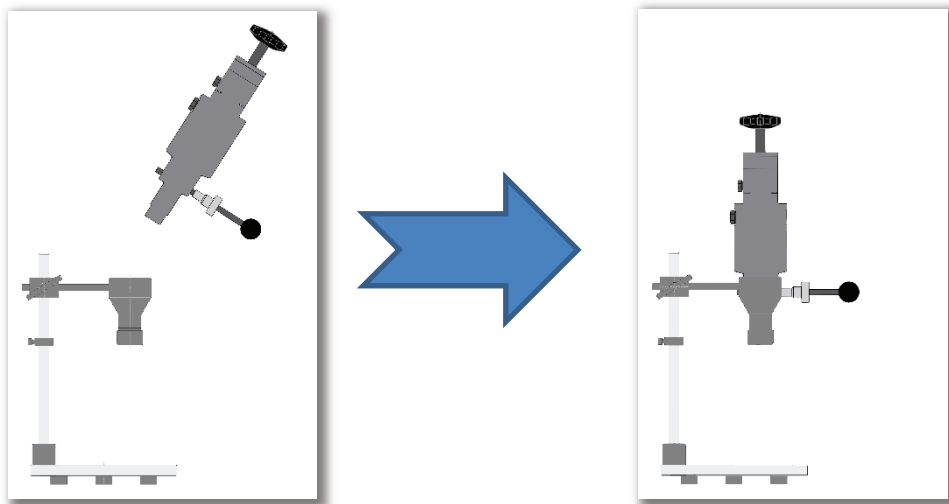
### BIAR SAMPLE VALVE TYPE MLB-SO

| #     | Description                  | Material                       |
|-------|------------------------------|--------------------------------|
| 1     | Nose gasket                  | FEP Encapsulated Silicone Core |
| 2     | High pressure seat gasket HP | PTFE                           |
| 3     | Safety cap                   | 304SS / PTFE                   |
| 4a+4b | Lever for bayonet connection | PTFE / 316SS / 301SS / HC276   |
| 5     | Stem with bellows-type seal  | Hastelloy C276                 |
| 6     | Rinsing port plug            | Hastelloy C276                 |
| 7a+7b | Socket head cap screw        | 316SS                          |
| 8     | Plug for leak detection port | Hastelloy C276                 |
| 9     | Stuffing box cover           | Hastelloy C276                 |
| 10    | Hand wheel                   | Plastic                        |
| 11    | Driving nut                  | 316SS                          |
| 12    | Cover for hand wheel         | 304SS                          |
| 13    | Washer                       | Carbon loaded PTFE             |
| 14    | Secondary stuffing box       | PTFE / HC276 / 316SS / 301SS   |
| 15    | Body gasket                  | PTFE                           |
| 16    | Flange                       | Hastelloy C276                 |
| 17    | Body O-ring                  | Kalrez 0040 (-42°C)            |
| 18    | Cylinder body                | Hastelloy C276                 |

# EASY AND SAFE EXTRACTION OF THE SAMPLE FOR ANALYSIS

The adjustable height Laboratory Stand is used to depressurize the Sample Cylinder and transfer Chlorine to Gas Chromatography (GC) Systems and other analytical equipment.

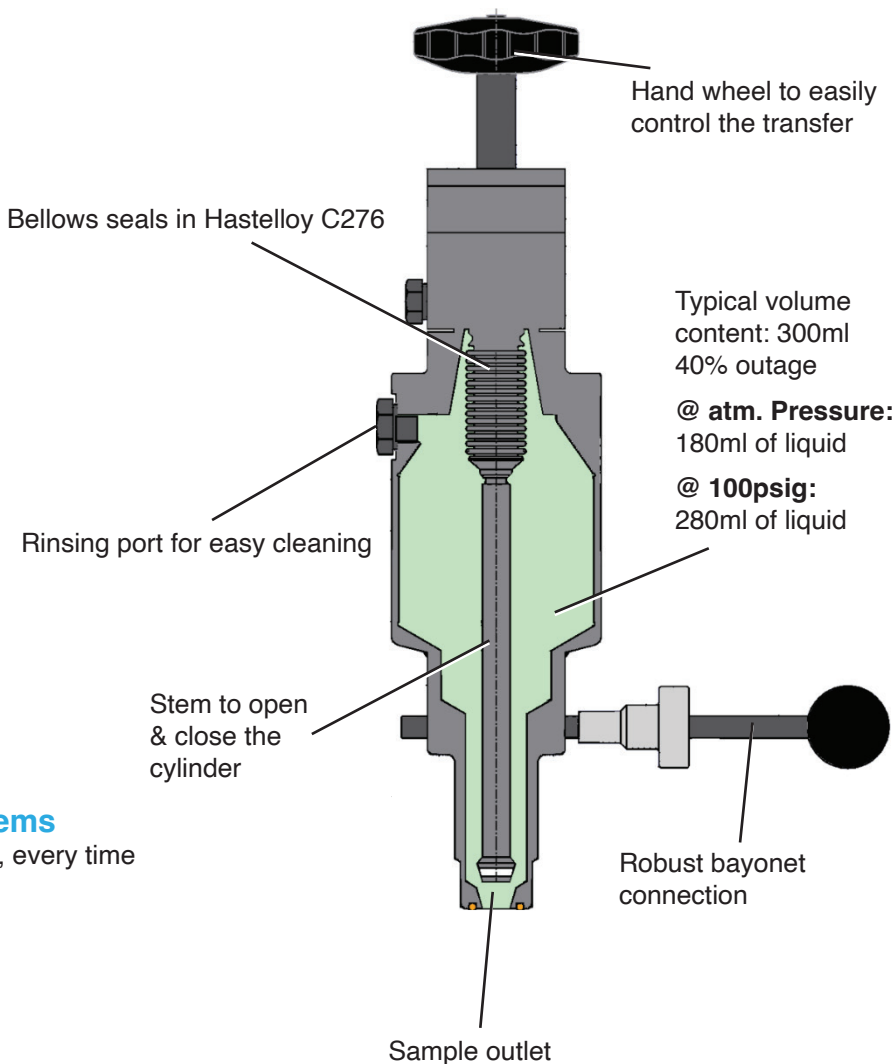
Typical tests include non-volatiles & iron, moisture, chloromethane and inerts.



Example of how the Sample Cylinder is used at a the lab under the safety hood in a laboratory

## Advantages of BIAR Sampling Systems

- Directly representative sample, the first time, every time
- Simple: minimum number of steps required
- Safe, robust design
- "Failsafe" spring-to-close
- No flushing/purging required
- Minimum number of potential leak points
- Suitable for toxic / lethal chemicals





# PROVEN TECHNOLOGY FOR A SAFER PROCESS

## BIAR SAMPLING SYSTEMS

VS

## SAMPLE PANELS & CLOSED LOOP SYSTEMS

- Simple
- Minimum number of steps required
- Only two valves to operate
- Limited potential leak points
- Safe, robust design
- Failsafe spring-to-close
- Installs directly on pipeline
- Directly representative sample, the first time, every time

- Complicated
- Numerous steps required
- Several valves to operate
- Many potential leak points
- Light / fragile fittings
- Small tubing needed
- Recycling / flushing / purging



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