



## Sample Securitiser

- Support for highly accurate analysis of LPG and other matrices
- Focus on safety by Safety Centered Design
- Easy handling by flexible cylinder connection
- Fully compliant with PED directive

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GAS offers custom configured GC analysers for many application fields for over 50 years. GAS analysers are designed to meet many standardised methods from GPA, ASTM, UOP, ISO, EN and others. The efficient configurations are based on proven GC technology, resulting in robust, highly productive instruments with an optimal return on investment.

The analysis of volatile and medium-volatile components in Liquefied Petroleum Gas and other liquefied matrices is widely performed in many laboratories. This process ensures the quality and safety of the gas before it is distributed. Accurate monitoring is crucial for compliance with industry standards. Advanced equipment like the Sample Securitiser enhances the reliability and efficiency of these analyses.

#### Liquefied samples

Liquid injection of LPG and other liquefied matrices is preferred over gas injection, especially to avoid loss of heavier components like C<sub>6</sub>-C<sub>10</sub> hydrocarbons. Pressures up to 20 bar are used to secure the liquid sample state for obtaining accurate results. When such high pressures are applied in laboratories, safe sample handling is essential.

#### Control of pressure in Liquid Sampling Valve

The liquid sample is injected by LSV (Liquid Sampling Valve) into the heated Split injector for fast evaporation before entering the analysis column. For reliable quantitative results, it is essential that the sample loop is completely filled with liquid sample and no (partial) evaporation occurs prior to injection. This is achieved by raising and controlling the pressure at the sample cylinder and LSV above the sample pressure.

#### Adaptable couplings

The Sample Securitiser takes a variety of sample cylinders and allows for safe hook up and accurate handling. Samples are taken from the process line by means of special sample cylinders. The 1/4" NPT couplings allow for a wide range of (quick) connectors to adapt to specific user conditions.

#### Configuration

The Sample Securitiser is equipped with two gauges to monitor the pressure of the pressurising gas and the sample. It also contains a liquid rotameter, providing a visual check of the sample flow and purge gas flow at every moment. With two clearly visible on/off valves, the operation is easy, straightforward and safe.



Figure 1 Sample Securitiser

## Safety specifications

Handling of LPG needs careful treatment! Both the high pressure cylinders and the flammability of LPG create hazardous situations. For this reason compliance with Pressure Equipment Directive (PED 2014/68/EU) is compulsory.

### PED

The Sample Securitiser has been analysed using the PED Directive (2014/68/EU) and the result is that the pressurised equipment is categorised under Clause 3, sub 3, which is below the base pressure and volume thresholds. The directive states that pressure equipment and assemblies below the specific pressure and volume thresholds must:

BE SAFE

BE DESIGNED AND  
MANUFACTURED  
ACCORDING TO SOUND  
ENGINEERING PRACTICE

BEAR SPECIFIED  
MARKINGS

To make sure that the product is compliant with the directive we have used the harmonised standard EN 13445 for our product design. All possible risks are considered while designing it.



### Earth Bonding Point (EBP)

Another safety feature of the Sample Securitiser is its Earth Bonding Point (EPD), which assures proper earthing of the equipment, and minimises electrical risks.

### Focus on Safety: Safety Centered Design - SCD

During and at the end of our design process we have, together with some main end users (Exxon, Inspectorate, Lanxess, Borealis, BP, Shell, Lyondell, SCS, Zeeland Refinery, Messer and Intertek), performed several dedicated risk investigations and evaluations. Virtually all possible circumstances that involve hazards have been taken into consideration. The result is a fully safe Sample Securitiser, both during preparation and operation and more specifically whilst handling the sample cylinders.



**Figure 2** Thermo Trace 1600 GC and Sample Securitiser

# Technical specifications

## Dimensions

Size (width \* depth \* height): 21 \* 46 \* 70 cm  
Weight: 13 kg

## Pressures, gases

Max pressure: 20 bar; typical 10–20 bar, depending on sample type  
34.5 bar optional  
Pressurising gas: N<sub>2</sub> or He (preferable)

## Sample cylinder

Max diameter: 15 cm  
Max height: 70 cm (including valves and connectors)

## Filters

Inlet particle filters (2 pieces): 15µm and 7µm

## Safety

Applicable directives: PED (2014/68/EU)  
Electrical safety: Earth Bonding Point

## Sample suitability

C<sub>3</sub>, C<sub>4</sub>, C<sub>5</sub> liquefied gases  
Analysed components up to C<sub>10</sub>, max 0.5%

## Connections

Front panel:  
Sample cylinder: ¼" NPT male standard, can be extended with various types of Quick-connectors on request  
Flexible hose: ¼" NPT male standard, can be extended with various types of Quick-connectors on request  
Top panel:  
Connections to LSV: 1/16" Swagelok  
Rear panel:  
Pressurising gas, sample vent, relief valve out: 1/8" Swagelok

## Options

Safety rail with chain for securing top quick-connector  
Mounting bracket for fixed positioning of the Sample Securitiser  
Additional waste valve for sample release in case of blocked inlet filters  
High pressure liquid rotameter with max. 34.5 bar (standard is 20 bar)  
Additional shut-off valve for repeated analysis from one cylinder  
*Contact us for more options*

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