



# High Pressure Refillable Cylinders (HPC) and Equipment

Including **\*\*NEW in 2020\*\*** ISO 17025 Range



5ST / 5AL



10ST / 10AL



50ST / 50AL

Calgaz the world leader in calibration gases, is able to supply a wide range of gas mixtures in High Pressure refillable Cylinders (HPC) globally in addition to its non-refillable cylinder product offering. Calgaz is able to offer HPC mixtures for a wide variety of applications including:

**Gas Detection / Safety - Breath Testing (BrAC) - Mud Logging - Marine**

In addition, Calgaz can also supply a range of regulators compatible with the gas mixtures and cylinder threads supplied.

# High Pressure Refillable Cylinders (HPC)

Characteristic				
Type	Water Volume	Pressure	Dimensions*	Weight**
5ST	5 litres	150 bar (2175 psi)	480 mm x 140 mm (18.9" x 5.5")	9 kg (20 lb)
5AL	5 litres	150 bar (2175 psi)	505 mm x 150 mm (20" x 6")	8 kg (18 lb)
10ST	10 litres	150 bar (2175 psi)	690 mm x 160 mm (27.2" x 6.3")	16 kg (35 lb)
10AL	10 litres	150 bar (2175 psi)	700 mm x 175 mm (27.6" x 6.9")	14 kg (31 lb)
50ST	50 litres	150 bar (2175 psi)	1520 mm x 230 mm (59.8" x 9")	70 kg (155 lb)
50AL	50 litres	150 bar (2175 psi)	1550 mm x 250 mm (61" x 9.8")	57 kg (125 lb)

\* Cylinder heights are to the centre of outlet valve. Add 100mm or total absolute height with guard or cap.

\*\*The weights are cylinder and valve without contents.

Specifications				
Type	Approvals	Type	Cylinder Valve	Recommended Equipment
Steel (ST)	ISO7866	Refillable	BS, CGA or DIN*	<ul style="list-style-type: none"> <li>• Single Stage Brass</li> <li>• Two Stage Brass</li> </ul>
Aluminium (AL)	ISO7866	Refillable	BS, CGA or DIN*	<ul style="list-style-type: none"> <li>• Single Stage Stainless Steel</li> <li>• Two Stage Stainless Steel</li> </ul>

### **Mixture Tolerances for standards mixtures**

Minor components are certified to the following analytical tolerance:

2-20ppm = +/- 10%

21- 50ppm = +/- 5%

>51ppm = +/- 2%

## ISO 17025 Mixture in HPC's

Calgaz has traditionally supplied gravimetric mixtures traceable back to NPL standards.

In 2020, Calgaz was pleased to announce the introduction of a range of ISO 17025 accredited mixtures, especially suited to the Marine Industry, Breath Testing, Mud Logging and Offshore market as well as our traditional Gas Detection markets.

ISO 17025 Gas Mixtures available in Refillable (HPC) cylinders		
	Min	Max
H2S	10ppm	200ppm
Ethanol	50ppm	500ppm
SO2	25ppm	2500ppm
CO2	2.5%	30.0%
CO	25ppm	500ppm
CH4	1.5%	4.5%
NO	125ppm	3000ppm
NO2	25ppm	200ppm
NOx	5ppm	500ppm

# Balance Gas and Pure Gas Impurities

Nitrogen (5.0) 99.999%	
Impurities	Concentration
Oxygen (O2)	< 3 ppm
Moisture (H2O)	< 4 ppm
Total Hydrocarbons (THC)	< 0.5 ppm

Hydrogen (5.0) 99.999%	
Impurities	Concentration
Nitrogen (N2)	< 5 ppm
Oxygen (O2)	< 2 ppm
CO / CO2	< 0.5 ppm
Moisture (H2O)	< 3 ppm
Total Hydrocarbons (THC)	< 0.5 ppm

Methane (3.5) 99.5%	
Impurities	Concentration
Nitrogen (N2)	< 100 ppm
Oxygen (O2)	< 20 ppm
CO2	< 50 ppm
Moisture (H2O)	< 20 ppm

Helium (5.0) 99.999%	
Impurities	Concentration
Nitrogen (N2)	< 4 ppm
Oxygen (O2)	< 2 ppm
CO / CO2	< 0.5 ppm
Moisture (H2O)	< 2 ppm
Total Hydrocarbons (THC)	< 1 ppm

# Equipment for HPC Cylinders

Calgaz HPC products can be supplied with a range of valves including BS, DIN and CGA. Cylinders are normally sold outright and so not subject to rental or the need to return.



R21



R31



718



802

804



1001



1002



1003



DFR 2003



DFR 2006

# Regulators - R Series



R21



R31

## Specifications

	Configuration	Inlet Pressure	Outlet Pressure	Body Port Size	Material	Stability	Weight
R21B	Single Stage	137bar (2000psi)	3.5 or 7 bar	1/4" NPT(F)	NI-Brass	Non-Reactive Gases	1.8 kg (4 lbs)
R21S	Single Stage	137bar (2000psi)	3.5 or 7 bar	1/4" NPT(F)	NI-Brass	Reactive Gases	1.8 kg (4 lbs)
R31B	Two Stage	137bar (2000psi)	3.5 or 7 bar	1/4" NPT(F)	NI-Brass	Non-Reactive Gases	2.1 kg (4.6lbs)
R31S	Two Stage	137bar (2000psi)	3.5 or 7 bar	1/4" NPT(F)	Stainless Steel	Reactive Gases	2.1 kg (4.6lbs)

**Temperature Range:** 40°F to 165°F (-40°C to 74°C)

**Temperature Range** 2 x 10 atm.cc/sec He

**Connectors** 1/4" NPT(F) to available with British Standard (BS), US CGA or DIN

# Regulators - Other



Specifications							
	Inlet	Outlet	Fixed Flow	Stages	Max Inlet Pressure	Max Outlet Pressure	Gauge/Knob
<b>718</b>	1/4" NPT Internal	4.8mm (3/16") Barb	0.2 to 6.0 LPM	1	150 Bar (2200 Psi)	4.1 Bar (60 Psi)	0-205 Bar (0-3000 Psi)



Specifications						
	Inlet	Outlet	Variflow	Stages	Max Inlet Pressure	Max Outlet Pressure
<b>802</b>	1/4-18" NPT	4.8mm (3/16") Barb	0.5 Lit/Mn to 5.0 Lit/Mn	2	275 Bar (4000 Psi)	4.1 Bar (60 Psi)
<b>804</b>	1/4-18" NPT	4.8mm (3/16") Barb	0.5 Lit/Mn to 5.0 Lit/Mn	2	275 Bar (4000 Psi)	4.1 Bar (60 Psi)



Specifications						
	Inlet	Outlet	Stages	Max Inlet Pressure	Max Outlet Pressure	Gauge/Knob
<b>1001</b>	1/4-18" NPT	1/8" - 27 NPT	2	207 Bar (3000 Psi)	0-0.7 Bar (0-10 Psi)	0-207 Bar (0-3000 Psi)
<b>1002</b>	1/4-18" NPT	1/8" - 27 NPT	2	207 Bar (3000 Psi)	0-3.5 Bar (0-50 Psi)	0-207 Bar (0-3000 Psi)
<b>1003</b>	1/4-18" NPT	1/8" - 27 NPT	2	207 Bar (3000 Psi)	0-7 Bar (0-100 Psi)	0-207 Bar (0-3000 Psi)



Specifications							
	Inlet	Outlet	on-Demand Flow Rate	Stages	Max Inlet Pressure	Demand Pressure	Gauge/Knob
<b>DFR 2003</b>	1/4-18" NPT	4.8mm (3/16") Tubing	0 to 3 LPM	2	150 Bar (2200 Psi)	5.6mm (3" H2O)	0-207 Bar (0-3000 Psi)
<b>DFR 2006</b>	1/4-18" NPT	4.8mm (3/16") Tubing	0 to 3 LPM	2	150 Bar (2200 Psi)	5.6mm (3" H2O)	0-207 Bar (0-3000 Psi)



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