

Making our world more productive



Precision also comes in the smallest sizes

Specialty gases in small cylinders



When mobility matters

Small on size, big on flexibility

More and more industries and organizations are prioritizing the health and safety of their workers. Gas detectors can play a key role here. They are used to efficiently measure and assess the composition of gases, dusts and vapors. Detectors are also commonly used for environmental and emissions monitoring. Regular tests must be carried out on these detectors to ensure they are fully functional and working reliably. Calibration and testing gases are required for this.

Ultimately, a gas detector is only ever as good as the specialty gases used to calibrate it. Large gas cylinders are usually too large and heavy for calibration tasks especially across larger and remote industrial sites. With gas monitoring, for instance, detectors are often placed in hard-to-reach places. In the past, small and light disposable containers were used for these remote tasks but these come with a negative environmental impact and energy balance. Hence gas detection systems and analyzers are becoming more and more compact and portable with a growing emphasis on reusability.

We are supporting this miniaturization trend with a wide range of specialty gas mixtures and pure gases in small, convenient cylinders. Designed to comply with all the applicable regulatory requirements, these cylinders combine state-of-the-art safety with outstanding sustainability.



This brochure presents the following products:

HiQ[®] MINICAN

HiQ[®] MICROCAN 400

HiQ[®] MAXICAN

ECOCYL[®]

HiQ[®] Multimix

These products support a broad application spectrum. Typical use cases include gas detectors and gas sensors used to monitor air in confined spaces and protect workers from hazardous gases and vapors; trace analysis and monitoring equipment for measuring and monitoring environmental pollution, as well as quality and process control analyzers. With our specialty gases in small cylinders, you can efficiently and safely calibrate the equipment used for all these analytical tasks.

Maximum flexibility for low-volume needs

HiQ[®] MINICAN

Many production and manufacturing activities require measuring devices and detectors that need to be calibrated and checked on a regular basis. HiQ[®] MINICAN has been developed specifically for these tasks. These disposable aluminum canisters provide a flexible, low-pressure and cost-effective solution for a large variety of applications extending from indoor air monitoring through exhaust gas control to oxygen measurement.

12^{Pressure} bar

Diameter
80 mm

1 litres
Water capacity

270 mm
Height
(cap included)

Weight (empty)
ca. 140 g

Valve connection
7/16"-28 UNEF



Suitable for all types of gas

With a filling pressure of 12 bar, these cans have a self-closing, protected valve with the same connection for all gas types. A range of dedicated fittings is available for gas withdrawal.

Inexpensive shipping

All gases, except for carbon monoxide and toxic gas mixtures, can be shipped by post in boxes containing up to 10 cylinders. This reduces logistical effort and significantly lowers transport costs.

Both compressed gas mixtures and pure gases at pressures of up to 12 bar are available in HiQ[®] MINICAN.

Fittings for HiQ[®] MINICAN

Various withdrawal fittings are available.



→ Spray nozzle

for spraying open measuring devices



→ Syringe adapter

for withdrawing the smallest amounts of gas using pressure-resistant syringes or cannulas



→ Pressure regulator without pressure gauge

with metering valve for gas withdrawal under constant overpressure of 500 mbar (fixed setting), screw connection for hoses with 4 mm inside diameter and approx. 1 mm wall thickness



→ Pressure regulator with manometer

to provide live contents indicator



→ Fine regulation valve without pressure gauge

particularly suitable for metered withdrawal of the smallest amounts of gas, 3 mm hose nozzle



→ Fine regulation valve with manometer

to provide live contents indicator



→ Compression fitting for glass tube

as additional equipment for the precision regulation valve, suitable for connection to glass equipment, 6 mm outer diameter



→ Flow meter

with regulation valve and content manometer, e.g. for spraying open measuring devices, approx. 800 ml/min max flow, 0-15 bar pressure gauge display

Small package with a big punch

HiQ® MICROCAN 400

R&D and industry laboratories often only require small amounts of gas for testing and calibration purposes. Large gas cylinders are generally too bulky, especially if technicians are working in space-constrained fume cupboards. In addition, many labs do not permit standard-sized cylinders for safety reasons.

Small cylinders are the solution of choice in these cases. Many labs are looking for portable, compact solutions but are keen to avoid the waste and environmental impact of disposable packages. HiQ® MICROCAN 400 solves this problem. It is refillable and therefore more environmentally sustainable. Customers can simply bring their empty MICROCAN cylinders back to us and we refill them after careful cleaning and checking.

Equipped with valve connections according to DIN 477, the new HiQ MICROCAN 400 can be used with existing standard pressure regulators and valves.



Valve connection

7/16"-18
UNEF

200 bar

Pressure

Gas content

80 litres

Diameter

60 mm

320 mm
Height
(with valve)

1 kg

Weight
(empty with valve)

Water capacity

0.4
litres

Currently available with the following gases:

Argon 5.3
Helium 5.3
Krypton 4.0
Methane 4.5
Neon 4.5
Oxygen 4.5
Nitrogen 5.3
Hydrogen 5.3
Xenon 4.0
Isotopes

Fittings for HiQ® MICROCAN 400

Withdrawal fittings for valves with connections according to DIN 477 can be used. The cylinder pressure regulator C 250 Mini was specially developed for these small cylinders. This fitting comes with an impressively compact design and low weight.

Technical data C 250 Mini

- Max. inlet pressure: 230 bar
- Downstream pressure control ranges: 0–1.5 bar
0–4 bar
0–10 bar
- Service gas outlet: 6 mm clamping ring
- Weight: 0.52 kg



Refillable, portable, environmentally sustainable. HiQ[®] MAXICAN



Kind to the environment

Our new HiQ[®] MAXICAN solution speaks to the sustainability trend and growing demand among our customers for reusable cylinders. This portable cylinder is refillable and therefore more environmentally sustainable than disposable options. Customers can simply bring their empty cylinders back to us and we refill them after thorough cleaning and testing.

Global fit

Equipped with the universal 5/8 "-18 UNF connection, HiQ MAXICAN is compatible with the fittings used commonly by our customers around the world. Care must be taken, however, to observe the permissible pressure level. den Armaturen, die bei unseren Kunden häufig anzutreffen sind. Allerdings ist auf die zulässige Druckstufe zu achten.

Currently available with the following gases:

Nitrogen 5.0
Helium 5.0
Hydrogen 5.0
Hydrocarbon-free synthetic air
Gas mixtures for room air monitoring
Gas mixtures for explosion protection
Gas mixtures for emission monitoring

Fittings for HiQ[®] MAXICAN

Various withdrawal fittings are available. For corrosive gas mixtures, we recommend stainless steel fittings.



→ Single-stage regulator with pressure gauge and fixed volume flow

Standard pressure regulator with wheel for manual opening and closing of the gas outlet. The volume flow is fixed at 0.5 l/min. Outlet hose nozzle 3/16 ". Made of chrome-plated brass and stainless steel.



→ Standard pressure regulator for devices with an internal pump (flow-on-demand controller)

The pressure regulator opens automatically through the suction of a pump. The volume flow is fixed at 3 l/min. Outlet hose nozzle 3/16 ". Made of chrome-plated brass and stainless steel. Ausführung in Messing verchromt und Edelstahl.



→ Standard pressure regulator with variable backpressure

With this model, the desired outlet pressure is freely adjustable between 0 and 75 psig (5.2 bar). Outlet 6 mm clamping ring (Swagelok), made exclusively from chrome-plated brass.



→ Standard pressure regulator with spray function (trigger)

By operating the trigger guard, test gas can be briefly applied to the sensors of a gas measuring device. The volume flow is limited to 0.5 l/min. Chrome-plated brass version only.

The robust, lightweight companion

ECOCYL®



The non-removable plastic guard protects the valve and improves handling.

ECOCYL® is a small, refillable aluminum cylinder with a valve plus pressure (up to 200 bar) and flow (up to 10 l/min) regulator fully integrated into a specially developed protective guard. It is available in 1- and 2-litre models. The system is safe, simple and immediately ready to use. The operator only needs to open the cylinder valve and set the flow to between 0.1 and 10 liters per minute. No additional fittings are required to deliver the gas at the point of use.

ECOCYL is one of the world's most advanced valves with an integrated pressure regulator. For maximum convenience, ECOCYL is available with a hose nozzle, a quick connector or a 1/4-inch compression fitting.

ECOCYL® benefits:

- All-in-one cylinder with integrated valve and regulator to set the gas flow
- No additional fittings required (e.g. external pressure regulator, flow meter or fine regulation valve)
- High volume – with over 50% more content than most disposable containers
- High flexibility thanks to three different outlet connection options
- Improved stability data for reactive gas mixtures
- Certificate of analysis available for mixtures (depending on the type of gas required)
- Non-removable, specially designed protective guard for valve
- Compact, portable, robust and easy to use
- No disposal or storage costs for empty cylinders
- Environmentally sustainable choice, eliminating the waste involved with disposable options



Robust valve protection

Systems like ECOCYL® are also known as VIPR. VIPR stands for “Valve with Integrated Pressure Regulator”. The ECOCYL® VIPR is always shielded by a non-removable protective guard, which ensures safe storage, handling and use. This is particularly important for portable gas cylinders, which are often used in the field and under harsh on-site conditions. ECOCYL has been tested and approved in accordance with the globally applicable regulatory requirements for transportable pressure equipment.

Typical application scenarios

- Test stations for gas detection systems and gas sensors
- Calibration and measurement gases for remote emission monitoring systems, e.g. installed on a chimney
- Calibration and measurement gases for emission measurement devices used in Real Driving Emissions (RDE) tests in the automotive and non-road mobile machinery (NRMM) sectors
- Calibration and carrier gases for micro gas chromatography for process control in industries such as petrochemicals

ECOCYL® 201



ECOCYL® 202



Technical specifications

	ECOCYL® 201*	ECOCYL® 202*
Maximum package diameter	9.5 cm (including protective guard)	10.2 cm (including protective guard)
Height	49 cm (including protective guard)	55 cm (including protective guard)
Weight (empty)	2.5 kg	3.3 kg
Cylinder diameter	8.0 cm	10.2 cm
Cylinder volume	1 litre	2 litres
Cylinder material	Aluminium, AL6061	Aluminium, AL6061
Valve material	Stainless steel and aluminium	Stainless steel and aluminium
Maximum filling pressure	200 bar g/2900 psi g	200 bar g/2900 psi g
Gas volume	0.15 m³ for mixtures and 0.2 m³ for pure gases	0.3 m³ for mixtures and 0.4 m³ for pure gases
Outlet pressure	3.8 bar (55 psi)	3.8 bar (55 psi)
Manometer cylinder pressure	300 bar, 270° scale	300 bar, 270° scale
Outlet flow (pre-set values)	0 / 0.10 / 0.25 / 0.50 / 1.00 / 2.50 and 10.0l/min	0 / 0.10 / 0.25 / 0.50 / 1.00 / 2.50 and 10.0l/min
3 outlet connections	Hose barb (standard), quick connector and ¼"-compression fitting	Hose barb (standard), quick connector and ¼"-compression fitting
Inlet connection (cylinder)	3/4" x 16 UNF-2A	3/4" x 16 UNF-2A
Inlet connection filling port	Customized	Customized

*Wide range of gases
ECOCYL® is suitable for non-corrosive pure gases up to 6.0 (99.9999%) grade and gas mixtures that can contain both non-corrosive and corrosive components (e.g., ammonia, hydrogen chloride, sulfur dioxide). The device does not meet the requirements for gases with an oxidation potential that is higher than that of air. Oxygen and mixtures with > 21% oxygen content are not supplied in ECOCYL cylinders.





HiQ® Multimix for special applications

The innovative mobile gas dilution system

The possibilities of ECOCYL® extend beyond single cylinders with pure gases and mixtures. Two ECOCYL units can be connected to our special HiQ Multimix blender to achieve extremely low concentrations of corrosive components; concentrations that cannot be produced in a stable way in a gas cylinder. For example, calibration gases such as 5 ppm NH₃ in N₂ can be diluted to 50 ppb. HiQ® Multimix also makes easy work of multi-point calibration.

This is how the system works:

HiQ Multimix combines dynamic and static production methods for calibration gas mixtures. A calibration gas of a certain concentration is "diluted" by mixing it with a zero gas. A dilution of up to 1/100 is achieved here.

Advantages over other gas mixture generators:

- No auxiliary power supply required
- Portable (approx. 10 kg)
- Immediately ready for use
(no running-in phase as is the case with permeation systems)
- Easy to use
- Quick response
(calibration curve with several points in a few minutes)

The HiQ® Multimix package

The system combines the HiQ Multimix dynamic blender with two ECOCYL cylinders (test gas in 1 or 2 l cylinder at 150 bar, pure gas in 1 or 2 l cylinder at 150 or 200 bar possible) with all the regulators necessary for dilution. By simply adjusting the flow rate, different concentrations in the ppm to ppb range can be produced in stages. A total of 23 different calibration gas concentrations are possible.

Areas of application

- Multi-point calibration
- Dynamic production of low concentrations (e.g., 50 ppb NH₃) that are statically not feasible in cylinders
- Testing of analyzers for linearity and cross-sensitivity

Possible types of gas

In principle, all test gas mixtures that are produced in ECOCYL cylinders are feasible. These include SO₂, NO, NO₂, NH₃, CO, CO₂ (also reactive gases such as HCl or Cl₂). The maximum concentration of the test gas is approx. 1000 ppm.



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