BOC
A Member of The Linde Group

There is no protection without detection.

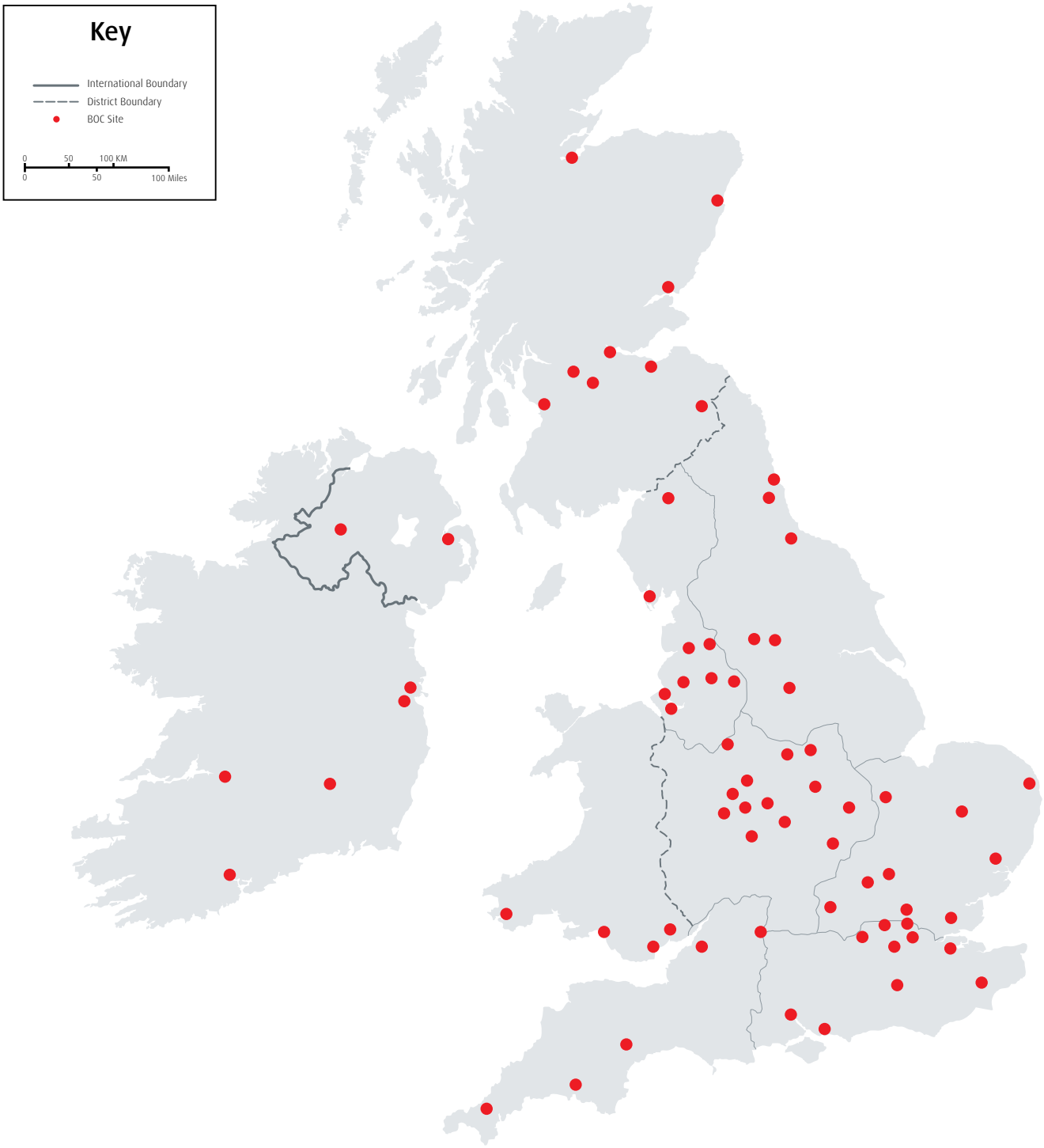
HiQ® speciality gases for environmental applications.

HiQ® speciality gases are key to many applications in environmental and safety engineering. These gases guarantee optimum measurement accuracy by the regular calibration of analytical equipment. In order to ensure safe workplace conditions and a comprehensive protection of the environment, HiQ® offers maximum reliability, optimised equipment and individual services.

HiQ® – Precision matters in everything we do.

BOC's distribution network is unrivalled in the UK.

Wherever you are, we can supply!



Through its comprehensive geographic coverage BOC is able to meet the gas and equipment needs of a diverse range of industries and offer numerous supply options to meet your industrial, medical or special products requirements.

- → Our supply chain utilises local delivery branches to enable efficient movement of cylinders straight from our production sites to you.
- → Our distribution network is well placed to deliver a wide range of cylinder packages from Manifold Cylinder Pallets for large volumes uses to ECOCYL®s for small, portable testing applications.
- → Local delivery branches allow us to set up local stock to offer a next day delivery service for the products you take on a regular basis.
- → Our geographical coverage allows us to respond quickly to your emergencies.
- → We provide precisely what you need, whenever and however it's needed.

BOC gas calibration mixtures.
When precision matters.

BOC – first UK Gases Company to be accredited to ISO guide 34.

BOC are the first commercial gases company in the UK to be accredited by the United Kingdom Accreditation Service (UKAS) to ISO Guide 34: 2000 'General requirements for the competence of reference material producers' as a Reference Material Producer.

BOC have been accredited to ISO 17025 'General requirements for the competence of testing and calibration laboratories' as a Calibration Laboratory (previously M10) since 1991 and has latterly provided an extensive range of accredited gas calibration mixtures to facilitate environmental measurements, analysis of natural gas and petrochemicals, evidential breath-analyser calibrations and exhaust emissions measurements.

Accreditation as both a Reference Material Producer for gases and as a Calibration Laboratory ensures that a consistent and technically robust approach is taken to the production and certification of gas calibration mixtures including the comparability of measurements and certification data. All aspects of the process from contract review through preparation, analysis and certification are covered – this allows us to continue to provide our customers with a quality product meeting current and future needs!

- Widest range of UKAS accredited, nationally-traceable gas mixtures available for QAL2 and AST reference checks on routine gases.
- BOC has a calibration accreditation to ISO 17025 and accreditation for reference material production to ISO Guide 34.
- A full range of non-accredited routine test mixtures are available for QAL2, QAL3 and AST compliance testing.
- Accredited and non-accredited mixtures containing CO, CO_2, NO, O_2, SO_2, HCl, C_3H_8 and C_1 to C_{10} hydrocarbons.
- Practical, portable, refillable small cylinder solutions.
- Full range of pure gases up to N6.0 (99.9999%)

Examples of BOC's UKAS Accredited Mixtures

Gas Mixture	Concentration Range	Relative Uncertainty
Carbon Monoxide/Air	2 ppm - 3.1%	2.7 - 0.7%
Carbon Monoxide/N_2	2 ppm - 10%	2.7 - 0.7%
Carbon Dioxide/N_2	0.1 - 15%	1.6 - 0.7%
Nitric Oxide/N_2	2 ppm - 1%	1.5 - 0.7%
Oxygen/N_2	0.5 - 25%	2.2 - 0.9%
Sulphur Dioxide/N_2	10 - 3000 ppm	1.7 - 0.5%
Carbon Monoxide, Carbon Dioxide, Propane/N_2	3.5% 14% 2000 ppm	1%

UKAS CALIBRATION 0408

UKAS REFERENCE MATERIALS 4183

SPECTRA-SEAL® calibration gas mixtures.

Consistency you can trust for 5 years.

Background

Calibration standards of low-level reactive mixtures, typically those below 5 ppm, can prove to be unstable over time. This can result in incorrect measurements, lost productivity and, with emission monitoring, potential legislative fines introduced in 1973.

Process

Proprietary process to render the aluminium surface of the cylinder chemically inert. Convert this passivation layer into a smooth, tightly adherent surface, with negligible adsorptive properties. As a result guarantee that SPECTRA-SEAL® calibration gas mixtures will remain stable, with a consistent analytical response for 5 years from their manufacturing date.

SPECTRA-SEAL® standard products

Component	Level	Typical balance gas
Carbon monoxide	> 100 ppb – < 1 %	Air, nitrogen
Carbonyl sulphide	> 100 ppb – < 1 %	Air, nitrogen
Hydrogen sulphide	> 100 ppb – < 1 %	Air, nitrogen
Methyl mercaptan	> 100 ppb – < 1 %	Air, nitrogen
Moisture (H_2O)	> 1000 ppb – 500 ppm	Nitrogen
Nitric oxide	> 50 ppb – < 1 %	Nitrogen
Nitrogen dioxide	> 50 ppb – < 1 %	Air, nitrogen
Sulphur dioxide	> 200 ppb – < 1 %	Air, nitrogen

Unique Portable Gas solutions.

Introduction

Many of today's industries need a broad range of analytical equipment. Analysers and monitors are used to check for and measure environmental pollution, for quality control and process engineering. A wide range of gas mixtures is needed to calibrate the analytical equipment and to ensure its correct operation.

Normally, these mixtures are supplied in high-pressure or disposable gas cylinders. Depending on the consumption and the required mobility, the size of the cylinders varies from 0.4 to up to 10 litres water content.

Solution

BOC has developed unique and environmentally friendly solutions to these problems called ECOCYL®s. They are small, refillable cylinders equipped with a valve, a fixed pressure regulator and a flow meter. These devices are fully integrated into the cylinder's protection cap. The results are safe, easy and ready-to-use systems. The end user only needs to open the cylinder valve and choose from the preset flow ranges.

The RSH units are suited for non-corrosive pure gases as well as gas mixtures that contain non-corrosive as well as corrosive components. Coming soon is the VSH for alkaline related gases and the VAH for acid gases. Both are suitable for gases with an oxidising potential.

With ECOCYL® RSH, BOC covers the business area of truly portable cylinders with integrated equipment, fully protected by a proper cylinder cap. ECOCYL® RSH units are also available with practical shoulder straps.

Also available from BOC

→ A2/S2 refillable cylinders have CGA 110/170 or CGA 110/180 valves to which regulators can be attached
→ Greater volume of product available – up to 200 bar
→ A wide range of high purity gases and mixtures can be provided in our ECOCYL®, A2 and S2 packages
→ Cylinder rucksack for extra portability

Benefits versus lecture bottles and disposables

- Conforms to latest European pressure vessel legislation (TPED)
- Lightweight, flat bottomed cylinders (<2.5 kg)
- Holds 50% more product than most disposables
- Always has the right regulators for your gas mixture*
- Self contained, integrated package with protective cowling*
- Simple operation
- Contents gauge, so you always know when to replace*
- Re-usable package
  - Environmentally friendly – no package disposal problems
- Flexible carrying solutions to suit customer needs. Carrying options available:
  - ergonomic carry handle*
  - shoulder strap*
  - back pack
- Safe to use
- Highly portable, stable package
- No need for fiddly connections and set up in the field
- Safely withstands knocks and drops

* ECOCYL® only

ECOCYL® RSH

Small cylinders A2/S2

Small Cylinder Rucksack

Contact us.

- UK call centres
- Technical advice available 24 hours a day, 7 days a week, 365 days a year
- Filled in the UK for quicker deliveries and emergencies
- Export to where ever you need in the world and let BOC take the strain. BOC can deliver to your nominated location in the UK or can arrange shipping worldwide

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