

Experis™

Natural gas calibration mixtures

➤ Demanding energy markets require specialist products

➤ Accuracy

➤ Traceability

➤ Confidence

➤ Peace of mind

➤ Reliable measurements accredited to ISO 17025

- Natural gas composition
- Calorific value
- Density
- Wobbe index

➤ Accurate metering data

➤ Efficient and cost effective analysis

➤ Experienced advice and support

As energy and natural gas markets become increasingly competitive, it is more necessary than ever to demonstrate "value for money". Not only is it important that the commercial value of natural gas (energy content) is accurately known, it is essential that the quality of natural gas meets the most stringent demands from contracts, regulation and legislation, in addition to all health and safety requirements. To achieve this, with minimum uncertainty and minimum cost, the composition of your natural gas must be measured with the greatest possible accuracy.

Air Products, in association with EffecTech, has introduced the Experis™ range of quality calibration gas mixtures with traceable accredited certificates of calibration.



The long established record of production and supply of complex multi-component gas mixtures has been enhanced by the addition of UKAS accredited calibration certificates from a specialist laboratory. This brings a distinct advantage and assurance, as both companies have fully independent traceability records of every bespoke product.

Working together, Air Products and EffecTech can offer you peace of mind as the calibrated mixtures we provide will ensure that you can:

- achieve value for money on the natural gas or fuel gas you are supplied
- calculate the efficiency of the processes you are using
- present accurate gas quality metering data to your business partners, which will stand up to external scrutiny
- provide evidence (insurance) against external audit or litigation

➤ Air Products produces

Air Products Specialty Gases Group has a wealth of experience producing a wide range of **ultra high purity gases and calibration mixtures** for analytical purposes. In addition to the natural gas market, the Experis™ range of gases covers the needs of the traditional laboratory market, the environmental market, requirements of the chemical, petrochemical, pharmaceutical and processing industries, and of all types of analytical applications. Experis™ gases and gas equipment are designed to ensure accuracy, purity, stability and peace of mind.

Air Products supports customers in technology, energy, healthcare and industrial markets world wide. Whether you require a mixture as part of your production process or a high accuracy calibration gas mixture for an analytical application, you can be sure that Air Products has the capability and expertise to meet your needs.



➤ EffecTech calibrates

EffecTech are specialists and world leaders in the field of **natural gas quality measurement**. Natural gas is their sole business. EffecTech has a calibration **laboratory accredited by UKAS** in accordance with ISO 17025 and is able to provide a one-stop shop for all issues concerning the measurement of content and other characteristics of gas to meet regulatory or contractual obligations.

And...

... You get the best

For the natural gas market Air Products & EffecTech offer a partnership which gives access to the best technologies and services in terms of production and mixture calibration:

- Over 20 years experience in the natural gas market
- Highly accurate and stable calibration mixtures
- ISO 17025 and ISO 6141 certificates of calibration
- Internationally recognised expertise in natural gas applications
- Specialist advice and support services in design of calibration mixtures which are fit for purpose
- The purest carrier gases available with Air Products' award winning BIP® technology
- International supply capabilities and logistics



Highly accurate and stable mixtures

All our mixtures are filled using the most accurate and cost effective methods available. The natural gas mixtures are produced by gravimetric filling, where the components are added sequentially using traceable weights. Gravimetric filling uses ultra-high precision balances to weigh each component into the cylinder with production crosschecks at each step in the sequence. Each balance is regularly calibrated using traceable weights that are calibrated in turn every six months by an external body. This ensures that the expected tolerance requirements are always fulfilled.

Traceability

As an essential part of its quality approach, Air Products is able to trace back all mixtures that are produced to their original filling data. This data includes cylinder numbers, production data such as actual component weights, chromatographic and spectroscopic analytical results. The weigh scales are calibrated against traceable weights on a regular basis.

EffecTech is UKAS accredited as a calibration and testing laboratory in the field of natural gas for composition and physical properties. All natural gas calibrations are performed strictly in accordance with ISO6143 and are directly traceable to internationally recognised reference mixtures in the field of natural gas.

Experience and confidence

Air Products' Experis™ range sets the standard for analytical gases and gas mixtures, guaranteeing the highest levels of purity, stability and accuracy.

EffecTech is the only company in Europe accredited to calibrate the complete range of natural gas components including sulphur components and THT mixtures.

High quality calibration gas mixtures, provided by Air Products and EffecTech, are already used by the principal natural gas companies in Europe.

Independent ISO 17025 calibration

The natural gas standard mixtures are provided with a unique certificate of calibration produced in accordance with the requirements ISO 17025 & ISO 6141. Each certificate contains all necessary data including analytical results, traceability, uncertainty and product shelf life. The independence of production and calibration provides the customer with confidence in a robust and reliable product. This is made possible by experts in both fields working together.



Schedule of Accreditation

The entire scope of accreditation is available at www.ukas.org

Component	Range (% mol/mol)	Best measurement capability (%relative)
nitrogen	0.2-22	0.4%
carbon dioxide	0.05-12	0.4%
methane	47-100	0.1%
ethane	0.1-16	0.4%
propane	0.05-8	0.4%
iso-butane	0.01-1.7	0.5%
n-butane	0.01-1.7	0.6%
neo-pentane	0.005-0.35	1.6%
iso-pentane	0.005-0.35	0.9%
n-pentane	0.005-0.35	1.1%
n-hexane	0.005-0.35	1.5%+0.0001% mol/mol
2-methylpentane	0.005-0.35	2.0%+0.0001% mol/mol
C ₆ +	0.005-0.35	1.5%+0.0001% mol/mol

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing a level of confidence of approximately 95%. The uncertainty evaluation has been carried out in accordance with UKAS requirements.



0590

Air Products Deutschland
apginfo@airproducts.com
Tel. +49 (0) 2324 689 215

Air Products France
frinfo@airproducts.com
Tel. +33 (0) 800 48 00 10

Air Products Ireland
ordergas@airproducts.com
Tel. +353 (1) 463 4242

Air Products Czech Republic
apdecin@apci.cz
Tel. (+420) 412 703 111

Air Products Belgique/Belgie
beinfo@airproducts.com
Tel. +32 (0) 78 155 202

Air Products United Kingdom
getgas@airproducts.com
Tel. +44 (0) 845 777 8800

Air Products Nederland
nlinfo@airproducts.com
Tel. +31 (0) 20 435 3800

Carburos Metálicos, S.A.
Tel. +34 902 130 202

tell me more
www.airproducts.com

© Air Products and Chemicals, Inc. 2004