

Traceable Primary Calibration Gas Standards

NPL specialise in the preparation of an extensive range of traceable calibration gas standards with guaranteed relative uncertainties levels of 0.1% for certain species. NPL's gas standards are supplied in 10 litre cylinders filled to excess of 100bar (Deliverable volume 1m³). The cylinders are sold, eliminating cylinder rental costs. This proves financially beneficial when customers require gas standards over significant periods of time. NPL's gas standards are certified for a period up to five years depending on the stability of the mixture. NPL offer's a cost-effective re-certification service after the initial certification period has expired, ensuring temporal consistency of gas traceability.

Gaseous Species	Matrix	Amount Fraction Range
Industrial emissions		(μmol/mol)
Sulphur dioxide	Nitrogen or Air	5 - 5000
Carbon monoxide	Nitrogen or Air	Down to 1
Carbon dioxide	Nitrogen or Air	Down to 1
Propane	Nitrogen or Air	1 - 10000
Nitrogen dioxide	Nitrogen or Air	1 - 5000
Nitrogen monoxide	Nitrogen	1 - 100000
Oxygen	Nitrogen	Down to 1
Methane	Nitrogen	1 - 100000
Methane	Air	1 - 20000
Hexane	Nitrogen	10 - 1000
Toluene	Nitrogen	10 - 1000
Ammonia	Nitrogen	10 - 1000
Vehicle and aircraft emissions		(%mol/mol)
Carbon monoxide	Nitrogen	0.5 - 15
Carbon dioxide		5 - 15
Propane		0.02 - 0.5
Oxygen		0.5 - 21
Occupational exposure		(μmol/mol)
Hydrogen sulphide	Nitrogen	5 - 25
Benzene	Nitrogen	0.5 - 15
Dichloromethane	Nitrogen	0.5 - 100
Benzene, toluene, xylene and ethylbenzene	Nitrogen	0.5 - 10
Air quality		(nmol/mol)
Ozone precursors	Nitrogen	4 - 50
Sulphur dioxide	Nitrogen or Air	100 - 1000
Nitric oxide	Nitrogen	100 - 1000
Nitrogen dioxide	Nitrogen or Air	100 - 1000
Benzene, toluene, xylene and ethylbenzene	Nitrogen	10 - 500

Gaseous Species	Matrix	Amount Fraction Range (mol/mol)
Odour		($\mu\text{mol/mol}$)
<i>n</i> -butanol	Air or Nitrogen	10 - 80
1-pentene	Air or Nitrogen	1 - 60
Evidential breath alcohol		($\mu\text{mol/mol}$)
Ethanol	Air or Nitrogen	50 - 2000
Methanol and ethanol	Air or Nitrogen	100 - 1000
Acetone and ethanol	Air or Nitrogen	100 - 1000
Toluene and ethanol	Air or Nitrogen	100 - 1000
Methyl ethyl ketone and ethanol	Air or Nitrogen	100 - 1000
Trace gases		Detection Limit (nmol/mol)
Water	Most inert and passive gases	<1
Oxygen		<1
Methane, Carbon Dioxide, Non-methane Hydrocarbons		5
Hydrogen, Carbon Monoxide		5

NPL specialise in producing custom gas mixtures with guaranteed uncertainties for complex gas analysis. NPL's gas experts are available to discuss specific gas requirements.

For further information, please contact:

Customer enquiry line: +44 20 8943 6372

Fax enquiries: +44 20 8614 0569

E-mail enquiries: gases@npl.co.uk

Web site: www.npl.co.uk/analytical



0478



4002