Revision 1.04

Customer Enquiry Form

Gas Reference Materials and Analytical Services

Please enter the details of your enquiry using the form below and e-mail to

gases_enquiries@npl.co.uk

Contact Name

Contact E-mail

Contact Telephone (including international code)

Company/Organisation name

NPL customer account number (if known – is displayed on invoices)

Full Address (of the site from which goods would be shipped to/from)

Address Line 1:	
Address Line 2:	
Country:	Post/ZIP Code:

National Physical Laboratory, Hampton Road, Teddington, TW11 0LW, United Kingdom
Customer enquiries contact +44 20 8943 7070

Certificate Address (the address that should appear on the certificate, if different)

Company/Organisation:	
Address Line 1:	
Address Line 2:	
Country:	Post/ZIP Code:

How we process your data?

To find out how we process your personal data please read https://www.npl.co.uk/privacy-notice

Can we contact you?

☐ Please tick the box if you would like to receive information about NPL products and services, news and events.

You have the right to withdraw your consent provided to us at any time by clicking the unsubscribe link https://email.npl.co.uk/k/Npl/master_unsubscribe_form

Commonly requested gas reference materials

In order to reduce lead times, NPL has launched a new range of standard gas mixtures which represent compositions that are in the highest demand and in some cases, where stability is good, may be made in advance to further reduce lead times.

The following section details these standard mixtures which may be requested by selecting the quantity required in the last column in the following tables. These only represent our most commonly requested mixtures and bespoke mixtures can be produced if these do not meet your requirements.

Each is provided with a valve fitted as per the description in the table. Concentration uncertainty and mixture stability are dependent upon the specific mixture composition and specified below for each standard. The make-up gases used are either pure nitrogen or synthetic air which is composed of 79% nitrogen and 21% oxygen.

Breath analysis reference materials

Standard mixtures of ethanol and acetone in nitrogen or synthetic air are listed below.

Mixture	Nominal concentrations	Uncertainty	Stability	Valve	Quantity
Ethanol (EtOH) in nitrogen	50 ppm	0.8%	1 year 6 months	DIN 477 No. 1	
	100 ppm	0.8%	3 years	DIN 477 No. 1	
	200 ppm	0.8%	5 years	DIN 477 No. 1	
	276 ppm	0.8%	5 years	DIN 477 No. 1	
Ethanol (EtOH) in synthetic air	54.4 ppm	0.8%	1 year 6 months	BS341 No. 15	
	82.3 ppm	0.8%	2 years	BS341 No. 15	
	137 ppm	0.8%	3 years	BS341 No. 15	
	191 ppm	0.8%	5 years	BS341 No. 15	
	245 ppm	0.8%	5 years	BS341 No. 15	
	301 ppm	0.8%	5 years	BS341 No. 15	
	354 ppm	0.8%	5 years	BS341 No. 15	
Acetone (C3H6O) in synthetic air	40 ppm	2.0%	2 years	BS341 No. 15	
	60 ppm	2.0%	2 years	BS341 No. 15	
	220 ppm	2.0%	2 years	BS341 No. 15	

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Emissions monitoring reference materials (Bespoke Concentrations)

Standard binary mixtures that can be supplied within specific concentration ranges are shown in the table below. Please specify the desired concentration within these bands when ordering.

Mixture	Nominal concentrations	Uncertainty	Stability	Valve	Concentration	Quantity
Propane (C3H8) in nitrogen	10 ppm - 1000 ppm	0.5%	5 years	BS341 No. 14		
Propane (C3H8) in synthetic air	10 ppm - 1000 ppm	0.5%	5 years	BS341 No. 14		
Sulphur dioxide (SO2) in nitrogen	10 ppm - 49 ppm	1.0%	2 years	DIN 477 No.8		
	50 ppm - 999 ppm	0.8%	5 years	DIN 477 No.8		
	1000 ppm - 5000 ppm	0.4%	5 years	DIN 477 No.8		
Sulphur dioxide (SO2) in air	10 ppm - 49 ppm	1.0%	2 years	DIN 477 No.8		
	50 ppm - 999 ppm	0.8%	5 years	DIN 477 No.8		
	1000 ppm - 5000 ppm	0.4%	5 years	DIN 477 No.8		
Carbon monoxide (CO) in nitrogen	10 ppm - 3.4%	0.5%	5 years	BS341 No. 14		
	3.5% - 10%	0.4%	5 years	BS341 No. 15		
Carbon dioxide (CO2) in nitrogen	10 ppm - 20%	0.3% - 0.5%	5 years	BS341 No. 14		
Carbon dioxide (CO2) in synthetic air	100 ppm - 2000 ppm	0.3% - 0.5%	5 years	BS341 No. 14		
Methane (CH4) in nitrogen	10 ppm - 2%	0.5%	5 years	BS341 No. 14		
Methane (CH4) in synthetic air	10 ppm - 1000 ppm	0.5%	5 years	BS341 No. 15		
Oxygen (O2) in nitrogen	10 ppm - 21%	0.3% - 0.5%	5 years	BS341 No. 14		
Hydrogen sulphide (H2S) in nitrogen	10 ppm - 500 ppm	2% - 3%	5 years	DIN 477 No.1		

Emissions monitoring reference materials (Discrete Concentrations)

Additional binary mixtures that are supplied in discrete concentrations are shown in the table below.

Mixture	Nominal concentrations	Uncertainty	Stability	Valve	Quantity
Nitrogen monoxide (NO) in nitrogen (Faster turnaround)	50 ppm	0.5%	5 years	BS341 No. 14	
Nitrogen monoxide (NO) in nitrogen	10 ppm	1.0%	2 years	BS341 No. 14	
	20 ppm	1.0%	2 years	BS341 No. 14	
	25 ppm	1.0%	2 years	BS341 No. 14	
	30 ppm	0.8%	5 years	BS341 No. 14	
	35 ppm	0.8%	5 years	BS341 No. 14	
	45 ppm	0.8%	5 years	BS341 No. 14	
	70 ppm	0.5%	5 years	BS341 No. 14	
	100 ppm	0.5%	5 years	BS341 No. 14	
	250 ppm	0.5%	5 years	BS341 No. 14	
	500 ppm	0.5%	5 years	BS341 No. 14	

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Environmental gas reference materials

Standard binary mixtures that can be supplied within specific concentration ranges or discrete ones are shown in the table below. Please specify the desired concentration for those with ranges when ordering. Additional notes for these mixtures are shown below the table.

Mixture	Nominal concentrations	Uncertainty	Stability	Valve	Concentration	Quantity
6 Component BTEX mixture in nitrogen	4 ppb - 10 ppb	2% - 3%	5 years	DIN 477 No. 1		
	100 ppb	2% - 3%	5 years	DIN 477 No. 1	100 ppb	
	200 ppb	2% - 3%	5 years	DIN 477 No. 1	200 ppb	
33 Component ozone precursor and terpene mixture in nitrogen	2.5 ppb - 5 ppb	2% - 5%	5 years	DIN 477 No. 1		
30 component ozone precursor mixture in nitrogen	4 ppb	2% - 5%	5 years	DIN 477 No. 1	4 ppb	
	5 ppb	2% - 5%	5 years	DIN 477 No. 1	5 ppb	
	100 ppb	2% - 5%	5 years	DIN 477 No. 1	100 ppb	
	200 ppb	2% - 5%	5 years	DIN 477 No. 1	200 ppb	
Benzene in nitrogen	1 ppb - 10 ppb	2% - 3%	2 years	DIN 477 No. 1		
20 component mixture for PTR-MS calibration	1 ppm	3% - 10%	1 year	DIN 477 No. 1	1 ppm	
20 component mixture for SIFT-MS calibration	1 ppm	3% - 10%	1 year	DIN 477 No. 1	1 ppm	

Notes

BTEX and Ozone Precursor Mixtures: NPL will certify the total amount fraction of both m-xylene and p-xylene together as separation cannot be achieved.

PTRMS and SIFT MS Calibration Standards: Each component at nominally at 1 µmol/mol (ppm).

Bespoke gas reference material requirements

Use to request a non-standard bespoke gas mixture. Please provide details of the quantity required, valve required (leave blank if you require NPL to suggest a valve), balance gas (typically nitrogen or synthetic air) and the gas components in the mixture (e.g. methane at 5 ppm). If required also specify desired uncertainty levels or specify “best” for NPL’s best available uncertainty levels.

Please note, all gas mixtures are supplied in 10 litre (water volume) cylinders.

For more complex mixtures or requirements, please use the “Other requirements” section to describe using free text.

Quantity required		
Balance gas		
Valve requirements		
Reference Gas Component 1	Gas	
	Concentration	
	Uncertainty	
Reference Gas Component 2	Gas	
	Concentration	
	Uncertainty	
Reference Gas Component 3	Gas	
	Concentration	
	Uncertainty	

Quantity required		
Balance gas		
Valve requirements		
Reference Gas Component 1	Gas	
	Concentration	
	Uncertainty	
Reference Gas Component 2	Gas	
	Concentration	
	Uncertainty	
Reference Gas Component 3	Gas	
	Concentration	
	Uncertainty	

Quantity required		
Balance gas		
Valve requirements		
Reference Gas Component 1	Gas	
	Concentration	
	Uncertainty	
Reference Gas Component 2	Gas	
	Concentration	
	Uncertainty	
Reference Gas Component 3	Gas	
	Concentration	
	Uncertainty	

Other requirements

Please use the free text box below to describe any additional requirements you have. This can include specifications for a bespoke gas reference material (including balance gas, valve type, etc.) or details related to your requirements such as specific documents or certification etc.

Appendix

Technical notes related to the supply of gas reference materials

1. All gas mixtures are supplied in 10 litre (water volume) cylinders.
2. Each cylinder is sold (rather than rented) and the price of the cylinder is included in the overall price of the gas mixture. There are therefore no rental charges for the cylinder as it is purchased outright.
3. Disposal of the cylinder is the responsibility of the purchaser.
4. Refilling cylinders may be possible, please contact us for more information on that service.