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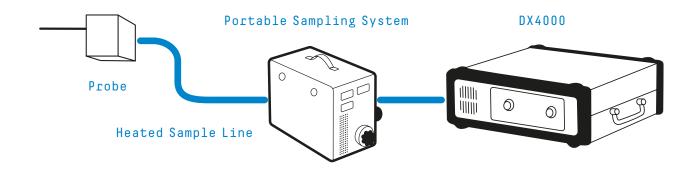
> Know what's in the air.



DX4000

Gasmet Portable FTIR Gas Analyzer DX4000

The Gasmet DX4000 FTIR Gas Analyzer is the most powerful tool available for emissions monitoring, process gas analysis and compliance testing.



What is the DX4000?

The Gasmet DX4000 is a portable multicomponent FTIR analyzer that is designed for monitoring gas concentrations in hot, wet and corrosive gas streams. Together with Gasmet's Portable Sampling System (PSS), it forms a complete portable FTIR emissions monitoring system offering the same high quality performance as Gasmet's fixed systems in an easy-to-transport package. The Gasmet DX4000 has received the MCERTS 15267-3 certification for stack emissions monitoring.

The entire sampling train of the DX4000 and PSS is heated to 180 °C, allowing for a direct sampling of hot and wet sample gas without the need for pre-conditioning the sample. The system is easy to operate and gives accurate results, as no analyte (sample) gases will be lost in the conditioning of the sample. The Gasmet DX4000 FTIR Gas Analyzer is the most powerful tool available for emissions monitoring, process gas analysis and compliance testing. The compact and modular design of the system allows the analyzer to be easily transported and quickly assembled, allowing for fast mobilization and less time wasted in waiting to conduct the analysis. The system is operated by the powerful, yet easy to use, Calcmet software on a PC computer. The Calcmet software offers all the tools needed for challenging measurement campaigns.

The Gasmet DX4000 utilizes Fourier Transform Infrared (FTIR) spectroscopy, which is a powerful gas measurement technology. FTIR spectroscopy works by scanning and analyzing the entire infrared spectrum in order to measure all infrared-absorbing gases in the sample simultaneously. Most molecules have a characteristic absorption spectrum that can be used to identify gases and accurately measure their concentration.



DX4000 is the world's smallest FTIR emissions monitoring system.

What is it used for?

Due to the flexibility of the FTIR technology, the DX4000 can be used in a wide variety of applications, ranging from research applications to process measurements and emissions monitoring. Typical uses include:

- > Stack testing: QAL2 tests for HCl, NH₃, SO₂, NOx and other gases
- > Scrubber and catalyst efficiency tests
- > Combustion and engine R&D
- PFC emissions at Aluminum and Semiconductor plants
- > Carbon capture and sequestration
- > Formaldehyde emissions from biogas
- > Formaldehyde emissions from biogas

Why should I buy the Gasmet DX4000?

- > Portable
- > Easy assembly on-site
- > Addition of new gases & ranges without hardware changes
- > No pre-conditioning of samples
- > Online results
- > MCERTS-certified
- > Simultaneous measurement of all gases

Which gases can be measured?

The DX4000 can be used to measure up to 50 different gases. In combustion processes, the DX4000 is typically used to measure the following gases simultaneously:

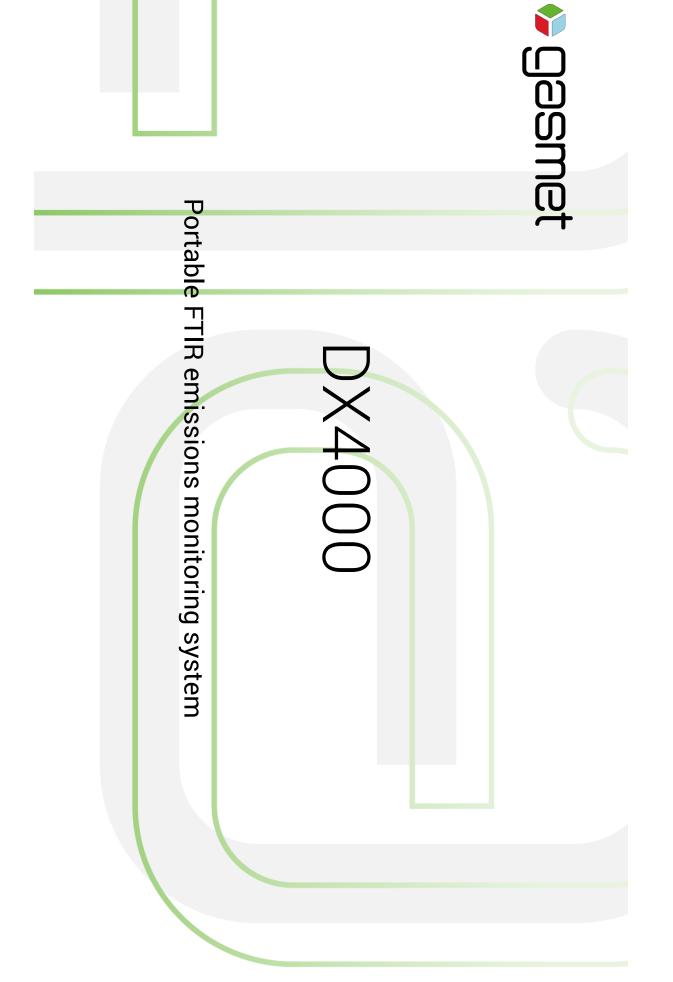
Typically measured gases		
Water, H ₂ O	Hydrogen Fluoride, HF	
Carbon Dioxide, CO ₂	Ammonia, NH ₃	
Carbon Monoxide, CO	Methane, CH4	
Nitrous Oxide, N ₂ O	Ethane, C ₂ H ₆	
Nitric Oxide, NO	Propane, C3H8	
Nitrogen Dioxide, NO2	Ethylene, C ₂ H ₄	
Sulfur Dioxide, SO ₂	Formaldehyde, CH ₂ O	
Hydrogen Chloride, HCl	Oxygen, O ₂	

The DX4000 is one of the most powerful tools available for challenging gas measurements. The amount of measurable gases is unparalleled, and the system is easy to configure to measure new compounds without the need for hardware changes. Please contact your local Gasmet representative for more available compounds, ranges and to ask for additional information.

GAS-APP-003 Extended CEM application				24.1.2022			
#	Compound name	Formula	CAS number	Minimum range	Typical range	Maximum range	Unit
1	Water	H ₂ O	7732-18-5	25	30	40	vol-%
2	Carbon dioxide	CO ₂	124-38-9	10	20	30	vol-%
3	Carbon monoxide	со	630-08-0	60	500	10000	ppm
4	Nitrous oxide	N ₂ O	10024-97-2	50	100	500	ppm
5	Nitrogen monoxide (Nitric oxide)	NO	10102-43-9	100	200	2000	ppm
6	Nitrogen dioxide	NO ₂	10102-44-0	100	200	500	ppm
7	Sulfur dioxide	SO ₂	7446-09-5	30	100	2000	ppm
8	Ammonia	NH_3	7664-41-7	20	50	500	ppm
9	Hydrogen chloride	НСІ	7647-01-0	10	50	500	ppm
10	Hydrogen fluoride	HF	7664-39-3	3	10	100	ppm
11	Methane	CH ₄	74-82-8	20	100	1000	ppm
12	Ethane	C ₂ H ₆	74-84-0	*		200	ppm
13	Ethylene (Ethene)	C ₂ H ₄	74-85-1	*		200	ppm
14	Propane	C₃H ₈	74-98-6	*		200	ppm
15	Hexane	C ₆ H ₁₄	110-54-3	*		100	ppm
16	Formaldehyde	нсон	50-00-0	15		70	ppm

* The CEM hydrocarbon ranges depend on the application.

Higher ranges and additional compounds are available upon request from Gasmet Technologies Oy. Note: Standard GAS-APP-003 application package includes one range per compound.





1/9/2019

SYSTEM A COMPLETE MEASUREMENT

- The DX4000 coupled with Gasmet Portable Sampling System (PSS) offers a complete measurement system with everything you need to make quality measurements
- > MCERTS certified

gasmet

> Know what's in the air.



MODULAR DESIGN

 The system is comprised of compact modules that are easy to carry to site for assembly



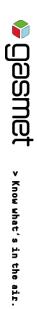


System parts

DX4000 ANALYZER

- Robust & portable FTIR analyzer
 Designed for measurements in demanding industrial conditions
- > 13.9 kg





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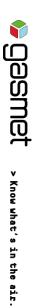
PSS – PORTABLE SAMPLING SYSTEM

- Specifically designed for use with the DX4000 analyzer
- Hot extractive sampling in a portable package

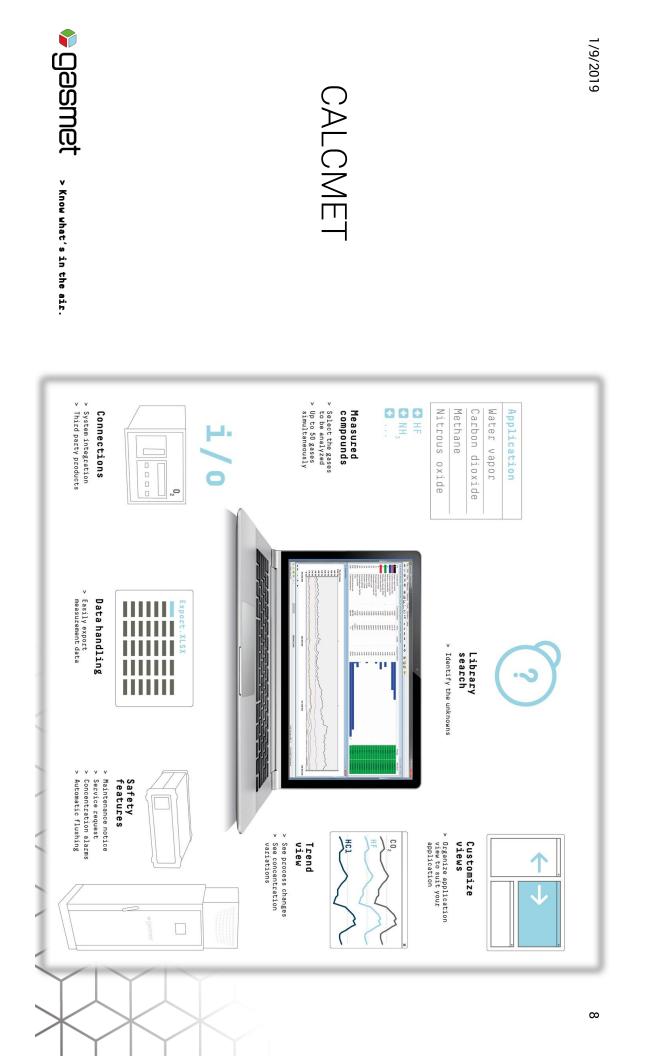
All system parts exposed to sample are heated to 180 C

- > 12.3 kg
- > Internal pump with ~4 I / min flow





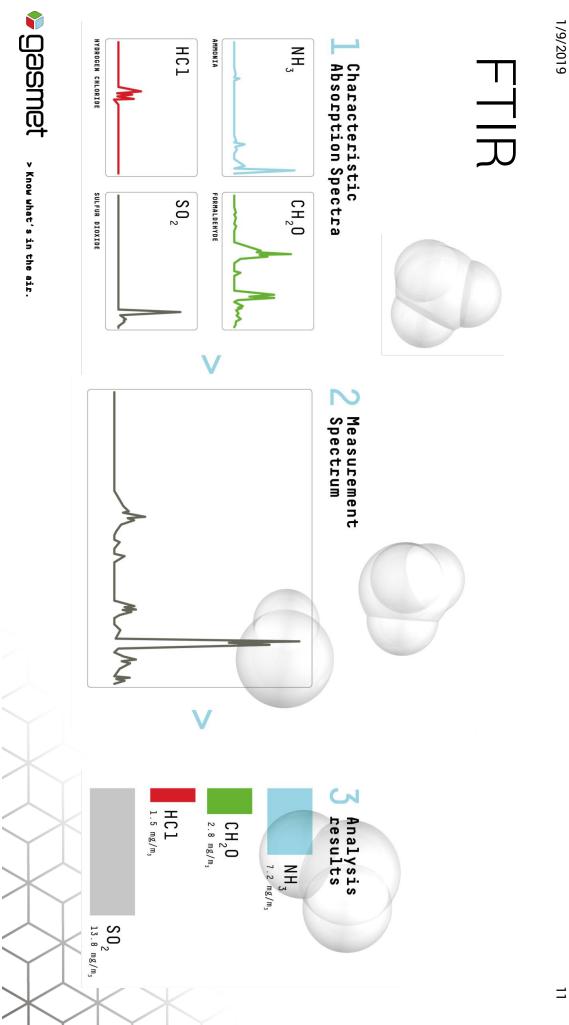
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Power of

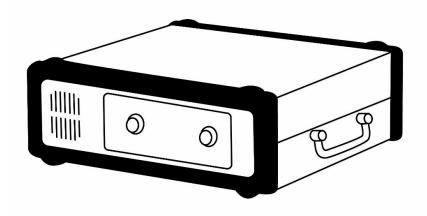
Adding new components is easy and affordable

- ADVANTAGES OF FTIR > On-line results
 - True multicomponent measurements





DX4000 FTIR gas analyzer



Multicomponent FTIR Gas Analyzer

Gasmet On-site Series includes portable multicomponent gas analyzers for demanding applications. The Gasmet DX4000 incorporates a Fourier transform infrared, FTIR spectrometer, a temperature-controlled sample cell, and signal processing electronics. The analyzer offers versatility and high performance for all users.

The Gasmet DX4000 is designed for short term on site measurements with wide dynamic ranges. It is an ideal tool to measure trace concentrations of pollutants in wet, corrosive gas streams. The sample cell can be heated up to 180 °C. Sample cell absorption path length is selected according to the application.

The Gasmet DX4000 allows simple calibration using only single component calibration gases. The user can easily configure the analyzer for a new set of compounds.

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Gasmet Technologies Oy

STREET ADDRESS:

01730 Vantaa, Finland

Mestarintie 6

Storage temperature:	-20 - 60 °C, non-condensing
Power supply:	100-115 or 230 V / 50 -60 Hz
Power consumption:	Average 150 W, maximum 300 W
Spectrometer	
Resolution:	8 cm ⁻¹ or 4 cm ⁻¹
Scan frequency:	10 scans / s
Detector:	

Source:	SiC, 1550 K
Beamsplitter:	ZnSe
Wave number range:	900 - 4 200 cm ⁻¹

Sample cell	
Structure:	Multi-pass, fixed path length 5.0 m
Material:	100 % rhodium coated aluminum
Mirrors:	Fixed, protected gold coating
Volume:	0.4 liters
Connectors:	Inlet Swagelok 6 mm Outlet Swagelok 8 mm
Gaskets:	Viton [®] O-rings
Temperature:	180 °C, maximum
Window material:	BaF ₂

TEL: +358 9 7590 0400 EMAIL: contact@gasmet.fi



Measuring parameters

Zero-point calibration:	24 hours, calibration with nitrogen (5.0 or higher N₂ recommended)
Zero-point drift:	< 2 % of measuring range per zero-point calibration interval
Sensitivity drift:	None
Linearity deviation:	< 2 % of measuring range
Temperature drifts:	< 2 % of measuring range per 10 K temperature change
Pressure influence:	1 % change of measuring value for 1 % sample pressure change. Ambient pressure changes measured and compensated

Electrical connectors:			
Digital interface:	9-pole D-connector for RS-232		
	Analyzer is connected to an external computer via RS-232C cable. The external computer controls Gasmet.		
	Remote control connection for Portable sampling unit		
Power connection:	Standard plug CEE-22		
PSS connection:	Remote connection of PSS (Portable Sampling System)		

Gas inlet and outlet conditions

Gas temperature:	Non-condensing, the sample gas temperature should be the same as the sample cell temperature
Flow rate:	120 - 600 liters per hour <mark>[M1]</mark> [JE2]
Gas filtration:	Filtration of particulates (2 µm) required
Sample gas pressure:	Ambient
Sample pump:	External, not included

Electronics

A/D converter:	Dynamic range 95 dB
Signal processor:	32-bit floating point DSP 120 MFLOPS speed
Computer:	External, not included

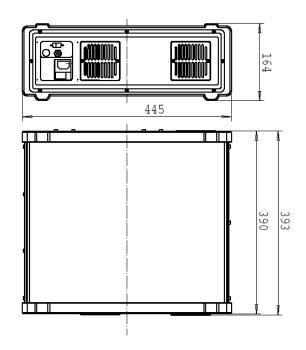
Analysis software (for external PC)

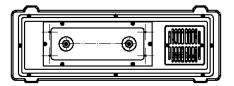
Operating system: Analysis software: Windows 7 or Windows 10 Calcmet for Windows

Options Multi-pass, fixed path length 2.5 Sample cell: m or 9.8 m Inside sample cell Pressure measurement: TCP module (for analog inputs, Analog signals (ext. PC): outputs, relays) Sample cell gaskets: Kalrez® Trolley: Wheeled cart for the analyzer and laptop computer Enclosure Material: Aluminum Dimensions (mm): 390 * 445 * 164 Weight: 13.9 kg

CE label:

According to EMI guideline 89/336/EC



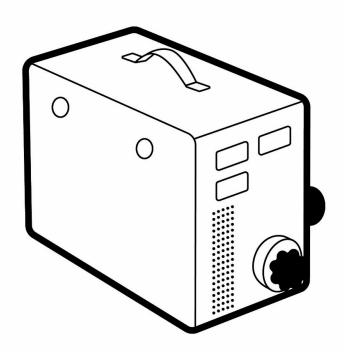


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Portable Sampling System



Gasmet Portable Sampling System

The Gasmet portable sampling system has been designed for portable emission monitoring measurements.

The Gasmet portable sampling system is used for on-site measurements. It can be used for measuring trace concentrations of pollutants in wet, corrosive gas streams. The sample gas can be measured undiluted and without drying since the sample pump, heated filter and valve are located in a module that is heated to 180 °C. From the sampling system the gases can be directed into Gasmet FTIR gas analyzer.

The Gasmet portable sampling system includes power connections and temperature controllers for heated lines and heated module. The Gasmet portable sampling system is connected to an external PC through Gasmet FTIR gas analyzer and can be controlled by Calcmet software. The function of the portable sampling system is automatic, but sample pump and valve can be controlled also manually.

In the case of a power failure or if the temperature (pump, lines, sample cell) is below setting, the automatic 3-way valve switches sample gas to zero gas to prevent condensation. Sample pump cannot be switched on before all temperatures have reached the setting. In addition, the zero calibration of the Gasmet FTIR gas analyser can be done automatically with the portable sampling system.

As an option, the sampling system can be equipped with a sample probe and/or heated lines. The maximum length for the heated line is 19 m + 1 m with 230 VAC and 9 m + 1 m with 115 VAC power supply. There is also an optional integrated O₂ sensor that supplements the capabilities of the Gasmet FTIR gas analyzers.

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General parameters

Operating temperature:	20 ± 20 °C, non-condensing
Storage temperature:	-20 – 60 °C, non-condensing
Power supply:	Separate models for 100-115 and 230 V / 50 -60 Hz
Power consumption:	400 - 3600 W, depending of the sample lines (without sample probe)

Heated sample pump

Material:	316 SS
Diaphragms:	Teflon
Maximum flow:	~4 l/min, constant
Temperature:	180 °C, maximum

Heated filter

Material:	Bonded microfiber (sintered steel 0.1µ as an option)
Gas filtration:	Filtration of particulates (2 µm)
Temperature:	180 °C

Temperature controllers

Material temperature range: 0 – 180 °C

Display:

Digital, 3 digits

Valves

Pressure:0 - 2 barsTemperature:60 °C maximumValves:Sample gas/zero gas

Gas connectors

Sample gas inlet:	One piece, 6 mm Swagelok
Sample gas outlet:	One piece, 6 mm Swagelok
Zero gas inlet:	One piece, 6 mm Swagelok

Electrical connectors

Power connection:

Enclosure

Material:	SS 316
Dimensions (mm):	$400\times 300\times 210\ mm$
Weight:	12.3 kg
CE label:	EMI guideline 89/336/EC

Optional oxygen sensor

The O_2 concentration reading can be displayed on the Calcmet software

Principle:	ZrO ₂ cell
Measuring range:	0.1 – 25 %
Accuracy:	< 2% from FS
Calibration:	Single point calibration with air

Optional heated line

Tube size:	4 mm, inner diameter
Core material:	Teflon core
Operating pressure:	Maximum 400 kPa
Temperature:	Maximum 200 °C
Fittings:	6 mm Swagelok
Power supply:	230 VAC or 115 VAC
Power density:	120 watts/meter

The maximum length of the heated line is 19 m + 1 m (230 VAC) and 9 m + 1 m (115 VAC).

Optional sample probe

Sample probe: PSP4000H

•	Power density:	320 watts
•	Operating temperature:	0 – 180 °C
•	Filter element:	Ceramic (2 µm)
•	Dust loadings:	< 2 g/m ³
Probe tu	be material: SS 316 Viton	
•	Probe length:	One (1) meter
•	Sample temperature:	600 °C maximum
•	Sample pressure:	1 bar maximum

Other probes for high temperatures and for high dust loadings.

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CEE7 standard European Schuko

plug or fixed cable

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Gasmet WHITE PAPER



FTIR GAS ANALYSIS

INTRODUCTION

FTIR (Fourier Transform InfraRed) spectroscopy is the most popular analytical technology for industrial applications requiring the continuous measurement of multiple parameters simultaneously, Typically, FTIR analyzers are employed for process control and emissions monitoring, however, due to the robustness and flexibility of this technique, it can also be applied in a wide variety of different applications, which will be discussed in greater detail below.

FTIR gas analyzers identify and measure gaseous compounds by their absorbance of infrared radiation. This is possible because every molecular structure has a unique combination of atoms, and therefore produces a unique spectrum when exposed to infrared light. Instrumental analysis of the spectrum (2 to 12 micrometer wavelength) enables the qualitative identification and quantitative analysis of the gaseous compounds in the sample gas. Importantly, FTIR analyzers are able to simultaneously measure multiple analytes in complex gas matrices, detecting virtually all gas-phase species (both organic and inorganic, except diatomic elements N2, O2 etc. and noble gases He, Ne, etc.). For example, the Gasmet™ FTIR gas analyzer collects a complete infrared spectrum (a measurement of the infrared light absorbed by molecules inside the sample gas cell) 10 times per second. Multiple spectra are co-added together according to a selected measurement time (improving accuracy by raising the signal-to-noise ratio). The actual concentrations of gases are calculated from the resulting sample spectrum using a patented modified Classical Least Squares analysis algorithm.

TYPICAL APPLICATIONS

The ability of FTIR to monitor multiple gases simultaneously, even in hot, wet aggressive gas streams means that it is ideal for emissions monitoring in the power sector, energy from waste, incineration plants and in industries such as cement and aluminium. These processes have to demonstrate compliance with emissions limit values specified in regulatory permits using instrumentation with appropriate certification (a list of Gasmet's comprehensive certification is given below).

A number of typical configurations exist for monitoring emissions including parameters such as CO, NO, H2O, SO2, HCl, NH3, NO2, N2O, CO2, HF, CH4 and CHOH. However, with the ability to monitor thousands of compounds, the opportunities for industrial process monitoring with FTIR are endless.

The emissions from all types of engines are monitored for compliance purposes and also to improve engine efficiency.

Again multigas capability is required and FTIR is therefore commonly applied. With increasing concern over the impact of vehicle emissions on ambient air quality, FTIR is a popular monitoring technique with engine developers; providing an opportunity to refine engine performance whilst measuring the effects on the individual components of emitted gases.

In addition to emissions monitoring, Gasmet FTIR analyzers are also employed in other environmental applications, particularly where multigas monitoring is required or where it is necessary to be able to identify unknown gases. Portable and ambient versions of the same FTIR technology are therefore available and are employed in applications such as greenhouse gas monitoring in soils, contaminated land, chemical leak/spill, fire investigation etc.

Gasmet FTIR analyzers are also used in occupational safety applications such as anaesthetic gases, shipping container investigation, fumigation and testing of compressed breathing air for impurities.

FTIR GAS ANALYZER VERSIONS

Gasmet FTIR analyzers are available in a variety of different formats to meet the requirements of different applications. The core FTIR technology is exactly the same in every model, so all users, working in any application, can rely on the same high levels of accuracy and reliability. The main models are as follows:

- Fixed Continuous Emissions Monitoring System the CEMS II *e* has enhanced certification for the monitoring of multiple gases. The FTIR analyzer, a heated sampling unit, an industrial PC and a Zirconia oxygen analyzer are installed in an airconditioned cabinet for the analysis of up to 50 compounds simultaneously in extracted gases.
- 2. Portable heated FTIR the DX4000 analyzer employs the same technology as the CEMS II e for the analysis of extracted gases in a portable housing weighting less than 20 kg (40 lbs).
- Portable ambient gas FTIR analyzer the DX4040 is a battery powered analyzer capable of measuring up to 25 parameters simultaneously, with remote PDA control via Bluetooth.
- 4. Fixed multipoint ambient FTIR gas analyzer the Gasmet FCX incorporates an FTIR analyzer with a built-in industrial computer and a TFT display in a compact IP65 rated stainless steel wall mounted enclosure.
- 5. Stack/duct mounted FTIR gas analyzer the Gasmet In-Situ analyzer consists of a sample cell inserted into the stack or duct, a heated steel mounting flange and the rugged GICCOR™ interferometer unit in an IP65 enclosure that is directly attached to the flange. With no sample extraction, response time is faster. However, extractive FTIR should be employed: with wet stacks where the gas temperature is down to the dew point; in very hot stacks with gas temperature above 250°C, and in ducts with diameter less than probe length (c.700 mm).

FTIR – COMMON QUESTIONS

1. WHAT IS AN FTIR SPECTROMETER? AND

HOW DOES IT WORK?

A FTIR spectrometer consists of the following key components:

- A broadband IR source emitting all recorded wavelengths simultaneously
- Beamsplitter which separates the IR beam into two equal parts
- A moving/stationary mirror assembly where the two beams travel a distance which can be varied by moving one or more mirrors continuously back and forth
- A reference laser source, which is used to track the position of the moving mirror
- Focusing optics used to transfer the beam into the sample cell and from the sample cell into the detector
- Sample cell filled with sample gas or test gas
- IR detector which responds to the entire wavelength range of the spectrometer
- Laser detector which responds to the wavelength of reference laser used

The beamsplitter and moving/stationary mirror assembly are collectively known as the **interferometer** and this is the heart of a FTIR spectrometer. Due to the motion of mirrors, the two beams produced by beamsplitter have a phase difference and when they recombine at the beamsplitter the produced IR intensity varies with mirror position. The interferometer can be considered an optical modulator and the modulation of the beam is the key to calculating intensity at each frequency from the signal recorded by IR detector.

The IR detector records a signal as a function of time (or mirror position, as the moving mirror has a constant speed) known as the interferogram. This signal is linked with the IR spectrum by a Fourier transformation, a mathematical tool for converting time domain signal I(t) to a frequency domain signal I(f). By placing a sample cell between the interferometer and the detector, the spectrometer can be used to measure an absorption spectrum of the sample gas, and the identity and concentration of gases in the sample can be calculated from the absorption spectrum.

2. WHAT IS AN INFRARED SPECTRUM?

The infrared spectrum is a plot of infrared radiation related quantities as a function of wavelength or wavenumber. There are three commonly used quantities for an infrared spectrum:

<u>Intensity</u> (I), is a measure of IR light falling on the detector, and this can have a unit of power per surface area but more commonly this is represented on a unitless scale of detector counts.

<u>Transmittance</u> (T), is the ratio of Intensity measured with sample gas in the sample cell (sample spectrum) and Intensity measured with zero gas in the sample cell (background spectrum). Transmittance is a unitless number and is typically expressed as percentage (0 - 100%). The reason why Intensity is commonly represented by detector counts instead of SI units of power/area is that the same units are used for both I and I₀ when calculating transmittance and they cancel each other.

<u>Absorbance</u> (A), is a logarithm of Transmittance with reversed sign. Absorbance is particularly useful for gas analysis because it is directly proportional to gas concentration unlike Transmittance or Intensity. The x-axis of an IR spectrum can be either wavelength in micrometers (microns) or more commonly wavenumber in reciprocal centimeter units. Wavenumbers are in common use as the spacing of spectral lines in IR spectrum is more constant in wavenumber than wavelength scale. The table below shows some common wavelengths and wavenumbers.

TABLE 1 COMMON WAVELENGTHS AND WAVENUMBERS

	Wavelength	Wavenumber
Boundary of IR and	500 μm	20 CM1
Microwave scale	3 1	
Low end of Mid-IR	20 µm	500 cm⁻¹
scale	P	500 000
High end of Mid-IR	2.5 µm	4000 cm ⁻¹
scale		4
Visible red	o.77 μm	13000 cm ⁻¹
VISIBLE LEG	(770 nm)	13000 CIII
Typical Gasmet	12 µm	900 cm⁻¹
spectral range	to 2.5 μm	to 4200 cm ⁻¹

A typical infrared spectrum of HCl gas is shown below. The HCl molecules vibrate with a frequency that corresponds to the gap in the middle of the spectrum, and the individual lines are due to combinations of vibration and rotation of the molecules. This pattern is unique to HCl and each gas has a corresponding 'fingerprint' which is different to the spectra of other gases, forming the basis of identification. The peak heights in absorbance scale are also proportional to gas concentration, which is the basis of quantification of gases from the spectrum.

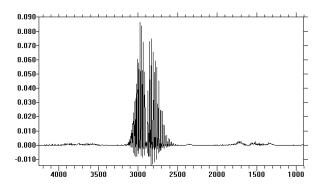


FIGURE 2 INFRARED SPECTRUM FOR HCL

3. How is the IR spectrum used for the

QUANTIFICATION OF GASES?

The amount of light passing through an absorbing medium decreases exponentially as the thickness of the absorber is increased (Figure 2). In the case of gas analysis the absorber is the sample cell filled with IR absorbing gas. Absorbance at a given wavelength (λ) is a logarithm of transmittance, A = \log_{10} (I/I₀), and is directly proportional to gas concentration (c), the distance travelled by the IR beam in the sample gas (b), and a gas specific constant (ϵ) known as molar absorptivity. The relation can be expressed as the Lambert-Beer law: A(λ) = $\epsilon(\lambda) \times \mathbf{b} \times \mathbf{c}$

In this equation, the concentration c is the quantity to be determined, A is taken from the measured spectrum, ε from the reference spectrum (see below) and pathlength b is a known quantity of the FTIR gas analyzer. The actual quantification is achieved by building a model spectrum from the reference spectra and matching them against the sample spectrum over a wide range of wavelengths to determine concentrations of multiple gases simultaneously. The illustration below shows how light intensity drops when the beam passes through a thickness of IR absorbing sample gas.

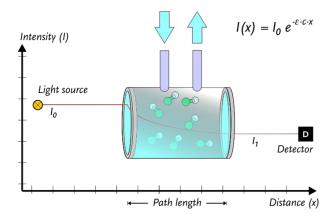


FIGURE 3: LAMBERT-BEER LAW AND ABSORBANCE

4. WHAT IS A REFERENCE SPECTRUM?

A reference spectrum is a spectrum of known concentration of one IR absorbing gas diluted in nitrogen. Reference spectra are used to analyze measured sample spectra. The absorption peaks in a sample gas are compared with those of reference spectra to determine simultaneously the concentrations of multiple gas components of the sample. For instance, if the absorption due to Methane in the sample is 1.2 times that of a 10 ppm Methane reference spectrum, the concentration of Methane is 12 ppm.

The reference spectrum is recorded using a long measurement time to eliminate noise from the spectrum and the instrument is carefully purged to eliminate traces of moisture and carbon dioxide (the two main atmospheric IR absorbing gases) from the spectrum. In order to model moisture and carbon dioxide in the sample, reference spectra of these gases are used.

5. WHICH GASES CAN BE MEASURED BY THE

GASMET[™] FTIR GAS ANALYZERS?

IR absorption spectroscopy such as FTIR detects those gases that absorb infrared radiation in internal motion (vibration) of the molecule. The absorption strength of a gas depends on the change of dipole moment (separation of electric charge) caused by the vibration. A molecule with strongly varying dipole moment absorbs radiation strongly whereas a molecule with no net change of dipole moment is transparent to IR radiation. Most molecules absorb IR light and are therefore measurable. However some molecules (N₂, O₂, H₂, Cl₂, ...) and all single-atom gases (He, Ne, Ar, Hg, ...) do not change dipole moment and therefore they do not have an IR absorption spectrum. These gases, especially Nitrogen, can be used as a zero gas for recording a background spectrum (I₀). The gases measured by FTIR include:

- Inorganic gases: Water, CO2, CO, NO, NO2, N2O, NH3, SO2, HCl, HF, ...
- Volatile organic compounds: hydrocarbons, alcohols, aldehydes, ketones, freons, ...
- The main exceptions are:
- noble gases (He, Ar, ...)
- metals (Hg)
- molecules with just two atoms of the same element (N2, O2, H2, Cl2)
- molecules with very small dipole moment change (H2S)
- low volatility organics (high boiling point or room temperature solid)
- particulate matter or aerosols (not a gas)

6. WHAT IS THE TYPICAL PERFORMANCE OF

GASMET[™] FTIR GAS ANALYZERS IN

EMISSIONS MONITORING APPLICATIONS?

Gasmet FTIR analyzers meet the performance requirements laid down in EN 15267-3 (Europe) and PS 15 (U.S). Linearity deviations are less than 2% of full scale and crossinterference effects due to stack emissions gas (H₂O up to 40 vol-%) are less than 4% of full scale for certified gases. Measurement accuracy is typically expressed in terms of expanded measurement uncertainty (U_c), a combination of uncertainty sources such as:

- nonlinearity (lack of fit)
- cross-interference
- zero and span drift
- temperature
- flow rate
- pressure
- mains voltage

Measurement uncertainty for specific gases (CO, NO, NO₂, SO₂, HCl, HF, ...) has a limit value proportional to emission limit value in the EU Industrial Emissions Directive, and the Gasmet system typically has measurement uncertainties smaller than one half the maximum uncertainty allowed for a certified (EN 15267-3, TÜV, MCERTS) emissions monitoring system. This ensures that Gasmet gas analyzers are capable of monitoring not only today's emission limits but also lower limit values that may be introduced in the future.

7. HOW ARE NEW GASES ADDED TO THE

LIBRARY?

New gases can be either measured with the instrument in question or imported from a generic library. The best method depends on the application; if traceability is required, instrument specific calibration is the best option, otherwise generic spectra may be used. Instrument specific calibration can be performed by the user or by the Gasmet calibration laboratory.

8. WHEN SHOULD GASMET[™] FTIR GAS

ANALYZERS BE RECALIBRATED?

FTIR gas analyzers do not require periodic recalibration. A daily background spectrum measurement with zero gas is enough to preserve measurement accuracy. Instead of periodic span calibrations, reference spectra for analysed gases are measured at the factory when the instrument is made and these do not drift.

Calibration of an FTIR instrument relies on:

- reference spectra recorded on a computer
- daily background spectrum measurement with zero gas (N2) which compensates for any variation in the IR source, sample cell, etc.
- continuous internal reference of wavelength scale with a reference laser

For the above reasons the response of an FTIR instrument does not drift and separate zero and span adjustments of each measured gas are not required. FTIR measures low ppm concentrations of pollutants in hot/wet gases up to 40 vol-% (400 000 ppm) water, so the reference spectra of H_2O are measured again after a service operation (involving the optical components) to preserve highest accuracy.

9. WHY IS THE QUALITY OF THE

INTERFEROMETER CRUCIAL?

The Gasmet GICCOR (Genzel Interferometer with Cube Corner Retroreflectors) interferometer is specially designed for maximum optical throughput and maximum signal-to-noise ratio at a resolution of 7.72 cm⁻¹ providing unparalleled stability with respect to vibration and temperature changes. It can be used in a temperature range of 0 to 40 °C (short term) and also in a person-portable analyzer while the user is moving with the instrument. The use of cube corner mirrors, a highly symmetric mirror layout and a patented moving

mechanism removes temperature and vibration influence and the use of non-hygroscopic optical material removes the need for dry air or nitrogen purging of the interferometer

10. WHY IS THE QUALITY OF THE SAMPLE CELL

IMPORTANT?

The Gasmet sample cells have mirror surfaces machined directly to the cell end plates, eliminating a source of drift and uncertainty associated with adjustable mirror gas cells. The cell surfaces are coated with a proprietary combination of materials including Rhodium and Gold selected for their corrosion resistance against reactive gases and high IR reflectance (in the case of Gold). Sample cells are available in a very wide range of path lengths from 1cm to 980cm, and long path lengths are achieved in a small cell volume (450ml in the case of 980cm path). The cells are heated optionally up to 180 °C to allow hot/wet sampling of gases with high concentrations of H₂O, SO₂, etc.

11. DO ACIDIC GASES SUCH AS HCL AND HF

DAMAGE THE SAMPLE CELL?

The multiple layer coatings on the sample cell and elevated cell temperatures make the cell remarkably resistant to the corrosive effects of acid gases even when the water content of the gas is high. However, if the sample is allowed to cool down and condense inside the cell or the acid gas dew point exceeds cell temperature, damage to the cell is possible. For this reason the Gasmet sampling system design prevents the sample pump from pulling wet gas into a cell under the temperature set-point. If the temperature of any heated part falls below the set-point, or the system loses power, the cell is flushed with dry air or nitrogen before condensation can take place. As long as condensation is avoided the cell is not damaged by moderately high levels HCl or HF.

The corrosion resistance of the sample cell depends on the prevention of condensation inside the cell. The cell temperature should exceed the dew point of the sample gas by a safety margin. For this reason Gasmet analyzers have different temperature set points as shown in the table below:



Document 6/5/2020

Emission measurements with Fourier Transform Infrared Spectroscopy – Reference article list



Gasmet FTIR gas analyzers have been used for high-quality emission-related research already for more than a decade. Gasmet analyzers have been used to measure pollutants and greenhouse gases from e.g. waste incinerators and wastewater treatment plants as well as for catalyst research.

Gasmet Technologies Oy

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Calibration components

gasmet

24.1.2022

		CAS	Maximum ran	ae		
# Compound name	Formula	number	GAS-REF-001* GAS-R		Unit	Notes
Typical components	ronnala	number			Onn	Notes
1 Water	H ₂ O	7732-18-5	40	60	vol-%	
2 Carbon dioxide	CO ₂	124-38-9	30	100	vol-%	
3 Carbon monoxide 4 Nitrous oxide	CO N ₂ O	630-08-0 10024-97-2		30 5000	vol-%	
	CH ₄	74-82-8			ppm	
5 Methane	CH4	74-02-0	I	50	vol-%	
Open-chain hydrocarbons	0.11	106 00 0	000	1000		
6 1,3-Butadiene	C ₄ H ₆	106-99-0		1000	ppm	
7 1-Butene	C₄H ₈	106-98-9		1000	ppm	
8 1-Heptene	C ₇ H ₁₄	592-76-7		1000	ppm	
9 1-Hexyne	C ₆ H ₁₀	693-02-7		NB	ppm	
10 1-Nonene	C ₉ H ₁₈	124-11-8		1000	ppm	
11 1-Octene	C ₈ H ₁₆	111-66-0		1000	ppm	
12 1-Pentene	C5H10	109-67-1	200	1000	ppm	
13 2,2-Dimethylbutane	C ₆ H ₁₄	75-83-2		NB	ppm	
14 2,3,4-Trimethylpentane	C ₈ H ₁₈	565-75-3		NB	ppm	
15 2,3-Dimethylbutane	C ₆ H ₁₄	79-29-8		NB	ppm	
16 2,3-Dimethylpentane	C ₇ H ₁₆	565-59-3		NB	ppm	
17 2,4,4-Trimethyl-1-pentene	C ₈ H ₁₆	107-39-1	NB	NB	ppm	
18 2,4,4-Trimethyl-2-pentene	C ₈ H ₁₆	107-40-4	NB	NB	ppm	
19 2,4-Dimethylhexane	C ₈ H ₁₈	589-43-5	NB	NB	ppm	
20 2,4-Dimethylpentane	C7H16	108-08-7	NB	NB	ppm	
21 2,5-Dimethylhexane	C ₈ H ₁₈	592-13-2	NB	NB	ppm	
22 2-Methyl-1-butene	C ₅ H ₁₀	563-46-2	NB	NB	ppm	
23 3-Methyl-1-butene	C ₅ H ₁₀	563-45-1	NB	NB	ppm	
24 3-Methylhexane	C ₇ H ₁₆	589-34-4	NB	NB	ppm	
25 3-Methylpentane	C ₆ H ₁₄	96-14-0	NB	NB	ppm	
26 Acetylene (Ethyne)	C_2H_2	74-86-2	500	2000	ppm	
27 Butane	C ₄ H ₁₀	106-97-8	200	1000	ppm	
28 Cetane (n-Hexadecane)	C ₁₆ H ₃₄	544-76-3	NB	NB	ppm	Calibration only for heated analyzer.
29 cis-2-Butene	C ₄ H ₈	590-18-1	NB	NB	ppm	
30 cis-2-Pentene	C ₅ H ₁₀	627-20-3		NB	ppm	
31 Decane	C ₁₀ H ₂₂	124-18-5		500	ppm	
32 Dodecane	C ₁₂ H ₂₆	112-40-3		500	ppm	
33 Ethane	C ₂ H ₆	74-84-0		2000	ppm	
34 Ethylene (Ethene)	C ₂ H ₄	74-85-1	200	2000	ppm	
35 Heptane	C ₇ H ₁₆	142-82-5		1000	ppm	
36 Hexane	C ₆ H ₁₄	110-54-3		1000	ppm	
37 Hexene	C ₆ H ₁₂	592-41-6		1000	ppm	
38 Isobutane (2-Methyl propane)	C ₄ H ₁₀	75-28-5		1000	ppm	
39 Isobutene (2-Methyl-1-propene)	C ₄ H ₁₀ C ₄ H ₈	115-11-7				
40 Isoheptane	C ₇ H ₁₆	591-76-4		NB NB	ppm	
	C ₆ H ₁₄	107-83-5		1000	ppm	
41 Isohexane (2-Methyl pentane)					ppm	
42 Iso-octane (2,2,4-Trimethyl pentane)	C ₈ H ₁₈	540-84-1	100	500	ppm	
43 Isopentane (2-Methyl butane)	C ₅ H ₁₂	78-78-4	200	1000	ppm	
44 Isopentene (2-Methyl-2-butene)	C ₅ H ₁₀	513-35-9		1000	ppm	
45 Isoprene	C₅H ₈	78-79-5		1000	ppm	
46 Nonane	C ₉ H ₂₀	111-84-2		500	ppm	
47 Octane	C ₈ H ₁₈	111-65-9		500	ppm	
48 Pentane	C ₅ H ₁₂	109-66-0		1000	ppm	
49 Propane	C ₃ H ₈	74-98-6		1000	ppm	
50 Propene	C ₃ H ₆	115-07-1	200	1000	ppm	
51 Propyne	C ₃ H ₄	74-99-7		NB	ppm	
52 Tetradecane	C ₁₄ H ₃₀	629-59-4		500	ppm	
53 trans-2-Butene	C ₄ H ₈	624-64-6		NB	ppm	
54 trans-2-Pentene	C ₅ H ₁₀	646-04-8		NB	ppm	
55 Tridecane	C13H28	629-50-5		500	ppm	
56 Undecane	C ₁₁ H ₂₄	1120-21-4		500	ppm	
57 Vinylacetylene (1-Buten-3-yne)	C_4H_4	689-97-4	NB	NB	ppm	
Aromatic or cyclic hydrocarbons						
58 (-)-trans-Caryophyllene	C15H24	87-44-5	NB	NB	ppm	
59 1,2,3-Trimethylbenzene	C ₉ H ₁₂	526-73-8	200	1000	ppm	
60 1,2,4-Trimethylbenzene	C ₉ H ₁₂	95-63-6	200	1000	ppm	
61 1,2,4-Trivinylcyclohexane	C12H18	2855-27-8	NB	NB	ppm	
62 1,3,5-Triisopropylbenzene	C15H24	717-74-8	NB	NB	ppm	
63 1,3,5-Trimethylbenzene (Mesitylene)	C ₉ H ₁₂	108-67-8	200	1000	ppm	
64 1-Ethylnaphthalene	C ₁₂ H ₁₂	1127-76-0		NB	ppm	Only non-instrument specific references. Solid material.
65 1-Methylnaphthalene	C ₁₁ H ₁₀	90-12-0		NB	ppm	Only non-instrument specific references. Solid material.
66 2-Ethyltoluene	C ₉ H ₁₂	611-14-3		1000	ppm	
	· · ·					

67 2-Methylnaphthalene	C ₁₁ H ₁₀	91-57-6	NB	NB	ppm	Only non-instrument specific references. Solid material.
		611-15-4	NB	NB		only non-instrument specific references. Solid material.
68 2-Vinyltoluene (2-methylstyrene, o-methylstyrene)	C ₉ H ₁₀				ppm	
69 3-Ethyltoluene	C ₉ H ₁₂	620-14-4	200	1000	ppm	
70 3-Vinyltoluene (3-methylstyrene, m-methylstyrene)	C ₉ H ₁₀	100-80-1	NB	NB	ppm	
71 4-Ethyltoluene	C ₉ H ₁₂	622-96-8	200	1000	ppm	
72 4-tert-Butylstyrene	C ₁₂ H ₁₆	1746-23-2	NB	NB	ppm	
73 4-Vinyl-1-cyclohexene	C ₈ H ₁₂	100-40-3	NB	NB		
					ppm	
74 4-Vinyltoluene (4-methylstyrene, p-methylstyrene)	C ₉ H ₁₀	622-97-9	NB	NB	ppm	
75 5-Ethylidene-2-norbornene (ENB)	C ₉ H ₁₂	16219-75-3	NB	NB	ppm	
76 5-Vinyl-2-norbornene (VNB)	C ₉ H ₁₂	3048-64-4	NB	NB	ppm	
77 Acenaphthene	C ₁₂ H ₁₀	83-32-9	NB	NB	ppm	Only non-instrument specific references. Solid material.
78 Benzene	C ₆ H ₆	71-43-2	200	1000	ppm	· · · · · · · · · · · · · · · · · · ·
79 Biphenyl	C ₁₂ H ₁₀	92-52-4	NB	NB	ppm	
80 cis-1,4-Dimethylcyclohexane	C ₈ H ₁₆	624-29-3	NB	NB	ppm	
81 Cumene	C ₉ H ₁₂	98-82-8	200	1000	ppm	
82 Cyclohexane	C ₆ H ₁₂	110-82-7	100	500	ppm	
83 Cyclopentane	C ₅ H ₁₀	287-92-3	100	500	ppm	
84 Cyclopentene	C₅H ₈	142-29-0	200	1000	ppm	
85 Cyclopropane (Trimethylene)	C ₃ H ₆	75-19-4	NB	NB	ppm	
86 Delta-3-Carene	C ₁₀ H ₁₆	13466-78-9	200	1000	ppm	
87 Dicyclopentadiene (DCPD)	C ₁₀ H ₁₂	77-73-6	NB	NB	ppm	
88 Ethyl benzene	C ₈ H ₁₀	100-41-4	500	2000	ppm	
89 Ethylcyclohexane	C ₈ H ₁₆	1678-91-7	100	500	ppm	
90 Indene	C ₉ H ₈	95-13-6	NB	NB	ppm	
91 Isopropylcyclohexane (Methylethylcyclohexane)	C ₉ H ₁₈	696-29-7	NB	NB	ppm	
92 Limonene	C ₁₀ H ₁₆	138-86-3	200	1000	ppm	
93 m-Diethylbenzene (1,3-diethylbenzene)	C ₁₀ H ₁₄	141-93-5	100	500	ppm	
94 Methylcyclohexane	C ₇ H ₁₄	108-87-2	100			
				500	ppm	
95 Methylcyclopentane	C ₆ H ₁₂	96-37-7	100	500	ppm	
96 m-Xylene	C ₈ H ₁₀	108-38-3	500	2000	ppm	
97 Naphthalene	C10H8	91-20-3	NB	NB	ppm	Only non-instrument specific references. Solid material.
98 o-Diethylbenzene (1,2-diethylbenzene)	C ₁₀ H ₁₄	135-01-3	100	500	ppm	
99 o-Xylene	C ₈ H ₁₀	95-47-6	500	2000	ppm	
100 p-Diethylbenzene (1,4-diethylbenzene)	C ₁₀ H ₁₄	105-05-5	100	500	ppm	
101 Phenyl acetylene (1-Phenylethyne)	C ₈ H ₆	536-74-3	200	1000	ppm	
102 Propylbenzene	C ₉ H ₁₂	103-65-1	NB	NB	ppm	
103 p-Xylene	C ₈ H ₁₀	106-42-3	500	2000	ppm	
104 Styrene	C ₈ H ₈	100-42-5	500	2000	ppm	
10 Folgreine	-00	100 12 0	000	2000	PP	
105 Totraling (1224 Totrahydronanhthalana; Paatiain; hanzaayalahaya		119-64-2	ND	ND	nnm	
105 Tetraline (1,2,3,4-Tetrahydronaphthalene; Bacticin; benzocyclohexa		119-64-2	NB	NB	ppm	
105 Tetraline (1,2,3,4-Tetrahydronaphthalene; Bacticin; benzocyclohexa 106 Toluene	C ₇ H ₈	108-88-3	200	NB 2000	ppm ppm	
106 Toluene	C ₇ H ₈	108-88-3	200	2000	ppm	
106 Toluene 107 trans-1,4-Dimethylcyclohexane 108 α-Methylstyrene	C ₇ H ₈ C ₈ H ₁₆ C ₉ H ₁₀	108-88-3 2207-04-7 98-83-9	200 NB 200	2000 NB 2000	ppm ppm ppm	
106 Toluene 107 trans-1,4-Dimethylcyclohexane 108 α-Methylstyrene 109 α-Pinene	C ₇ H ₈ C ₈ H ₁₆ C ₉ H ₁₀ C ₁₀ H ₁₆	108-88-3 2207-04-7 98-83-9 80-56-8	200 NB 200 200	2000 NB 2000 500	ppm ppm ppm ppm	
106 Toluene 107 trans-1,4-Dimethylcyclohexane 108 α-Methylstyrene 109 α-Pinene 110 β-Pinene	C ₇ H ₈ C ₈ H ₁₆ C ₉ H ₁₀	108-88-3 2207-04-7 98-83-9	200 NB 200	2000 NB 2000	ppm ppm ppm	
106 Toluene 107 trans-1,4-Dimethylcyclohexane 108 α-Methylstyrene 109 α-Pinene 110 β-Pinene Acids and derivatives	C_7H_8 C_8H_{16} C_9H_{10} $C_{10}H_{16}$ $C_{10}H_{16}$	108-88-3 2207-04-7 98-83-9 80-56-8 127-91-3	200 NB 200 200 200	2000 NB 2000 500 500	ppm ppm ppm ppm	
106 Toluene 107 trans-1,4-Dimethylcyclohexane 108 α-Methylstyrene 109 α-Pinene 110 β-Pinene Acids and derivatives 111 1,4-Butanediol dimethacrylate (BDDMA)	C_7H_8 C_8H_{16} C_9H_{10} $C_{10}H_{16}$ $C_{10}H_{16}$ $C_{12}H_{18}O_4$	108-88-3 2207-04-7 98-83-9 80-56-8 127-91-3 2082-81-7	200 NB 200 200 200 NB	2000 NB 2000 500 500 NB	ppm ppm ppm ppm	
106 Toluene 107 trans-1,4-Dimethylcyclohexane 108 α-Methylstyrene 109 α-Pinene 110 β-Pinene Acids and derivatives	C_7H_8 C_8H_{16} C_9H_{10} $C_{10}H_{16}$ $C_{10}H_{16}$	108-88-3 2207-04-7 98-83-9 80-56-8 127-91-3	200 NB 200 200 200	2000 NB 2000 500 500	ppm ppm ppm ppm	
106 Toluene 107 trans-1,4-Dimethylcyclohexane 108 α-Methylstyrene 109 α-Pinene 110 β-Pinene Acids and derivatives 111 1,4-Butanediol dimethacrylate (BDDMA)	C_7H_8 C_8H_{16} C_9H_{10} $C_{10}H_{16}$ $C_{10}H_{16}$ $C_{12}H_{18}O_4$	108-88-3 2207-04-7 98-83-9 80-56-8 127-91-3 2082-81-7	200 NB 200 200 200 NB	2000 NB 2000 500 500 NB	ppm ppm ppm ppm ppm	
106 Toluene 107 trans-1,4-Dimethylcyclohexane 108 α-Methylstyrene 109 α-Pinene 110 β-Pinene 111 1,4-Butanediol dimethacrylate (BDDMA) 112 1-Ethoxy-2-propyl acetate (2-Acetoxy-1-ethoxypropane) 113 1-Methoxy-2-propyl acetate	$\begin{array}{c} C_{7}H_{8} \\ C_{9}H_{16} \\ C_{9}H_{10} \\ C_{10}H_{16} \\ C_{10}H_{16} \\ \end{array}$	108-88-3 2207-04-7 98-83-9 80-56-8 127-91-3 2082-81-7 54839-24-6 108-65-6	200 NB 200 200 200 NB NB 100	2000 NB 2000 500 500 NB NB 500	ppm ppm ppm ppm ppm ppm ppm	
106 Toluene 107 trans-1,4-Dimethylcyclohexane 108 q-Methylstyrene 109 q-Pinene 110 g-Pinene Acids and derivatives 111 1,4-Butanediol dimethacrylate (BDDMA) 112 1-Ethoxy-2-propyl acetate (2-Acetoxy-1-ethoxypropane) 113 1-Methoxy-2-propyl acetate 114 2-(2-Butoxyethoxy)ethyl acetate	$\begin{array}{c} C_{7}H_{8} \\ C_{8}H_{16} \\ C_{9}H_{10} \\ C_{10}H_{16} \\ C_{10}H_{16} \\ \end{array} \\ \\ \hline \\ C_{12}H_{18}O_{4} \\ C_{7}H_{14}O_{3} \\ C_{6}H_{12}O_{3} \\ C_{10}H_{20}O_{4} \end{array}$	108-88-3 2207-04-7 98-83-9 80-56-8 127-91-3 2082-81-7 54839-24-6 108-65-6 124-17-4	200 NB 200 200 200 NB NB 100 100	2000 NB 2000 500 500 NB NB 500 500	ppm ppm ppm ppm ppm ppm ppm ppm	
106 Toluene 107 trans-1,4-Dimethylcyclohexane 108 a-Methylstyrene 109 a-Pinene 110 β-Pinene Acids and derivatives 111 1,4-Butanediol dimethacrylate (BDDMA) 112 1-Ethoxy-2-propyl acetate (2-Acetoxy-1-ethoxypropane) 113 1-Methoxy-2-propyl acetate 114 2-(2-Butoxyethoxy)ethyl acetate 115 2-Butoxyethyl acetate	$\begin{array}{c} C_{7}H_{8} \\ C_{8}H_{16} \\ C_{9}H_{10} \\ C_{10}H_{16} \\ C_{10}H_{16} \end{array} \\ \\ \hline \\ C_{12}H_{18}O_{4} \\ C_{7}H_{14}O_{3} \\ C_{6}H_{12}O_{3} \\ C_{6}H_{12}O_{3} \\ C_{10}H_{20}O_{4} \\ C_{8}H_{16}O_{3} \end{array}$	108-88-3 2207-04-7 98-83-9 80-56-8 127-91-3 2082-81-7 54839-24-6 108-65-6 124-17-4 112-07-2	200 NB 200 200 200 NB NB 100 100	2000 NB 2000 500 500 NB NB 500 500 500	ppm ppm ppm ppm ppm ppm ppm ppm	
106 Toluene 107 trans-1,4-Dimethylcyclohexane 108 α-Methylstyrene 109 α-Pinene Acids and derivatives 110 111 1,4-Butanediol dimethacrylate (BDDMA) 112 1-Ethoxy-2-propyl acetate (2-Acetoxy-1-ethoxypropane) 113 1-Methoxy-2-propyl acetate 114 2-{2-Butoxyethoxylethyl acetate 115 2-Butoxyethyl acetate 116 2-Ethoxyethyl acetate (Cellosolve acetate)	$\begin{array}{c} C_{7}H_{8} \\ C_{8}H_{16} \\ C_{9}H_{10} \\ C_{10}H_{16} \\ C_{10}H_{16} \\ \end{array} \\ \\ \hline \\ C_{12}H_{18}O_{4} \\ C_{7}H_{14}O_{3} \\ C_{6}H_{12}O_{3} \\ C_{10}H_{20}O_{4} \\ C_{8}H_{16}O_{3} \\ C_{6}H_{12}O_{3} \end{array}$	108-88-3 2207-04-7 98-83-9 80-56-8 127-91-3 2082-81-7 54839-24-6 108-65-6 124-17-4 112-07-2 111-15-9	200 NB 200 200 200 NB NB 100 100 100 100	2000 NB 2000 500 500 NB NB 500 500 500 500	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	
106 Toluene 107 trans-1,4-Dimethylcyclohexane 108 α-Methylstyrene 109 α-Pinene 110 β-Pinene Acids and derivatives 111 1,4-Butanediol dimethacrylate (BDDMA) 112 1-Ethoxy-2-propyl acetate (2-Acetoxy-1-ethoxypropane) 113 1-Methoxy-2-propyl acetate 114 2-(2-Butoxyethya)yethyl acetate 115 2-Butoxyethyl acetate 116 2-Ethoxyethyl acetate 117 2-Ethylhexyl acrylate	$\begin{array}{c} C_{7}H_{8} \\ C_{8}H_{16} \\ C_{9}H_{10} \\ C_{10}H_{16} \\ C_{10}H_{16} \\ C_{10}H_{16} \\ \end{array}$	108-88-3 2207-04-7 98-83-9 80-56-8 127-91-3 2082-81-7 54839-24-6 108-65-6 124-17-4 112-07-2	200 NB 200 200 200 NB NB 100 100	2000 NB 2000 500 500 NB NB 500 500 500	ppm ppm ppm ppm ppm ppm ppm ppm	
106 Toluene 107 trans-1,4-Dimethylcyclohexane 108 α-Methylstyrene 109 α-Pinene Acids and derivatives 110 111 1,4-Butanediol dimethacrylate (BDDMA) 112 1-Ethoxy-2-propyl acetate (2-Acetoxy-1-ethoxypropane) 113 1-Methoxy-2-propyl acetate 114 2-{2-Butoxyethoxylethyl acetate 115 2-Butoxyethyl acetate 116 2-Ethoxyethyl acetate (Cellosolve acetate)	$\begin{array}{c} C_{7}H_{8} \\ C_{8}H_{16} \\ C_{9}H_{10} \\ C_{10}H_{16} \\ C_{10}H_{16} \\ \end{array} \\ \\ \hline \\ C_{12}H_{18}O_{4} \\ C_{7}H_{14}O_{3} \\ C_{6}H_{12}O_{3} \\ C_{10}H_{20}O_{4} \\ C_{8}H_{16}O_{3} \\ C_{6}H_{12}O_{3} \end{array}$	108-88-3 2207-04-7 98-83-9 80-56-8 127-91-3 2082-81-7 54839-24-6 108-65-6 124-17-4 112-07-2 111-15-9	200 NB 200 200 200 NB NB 100 100 100 100	2000 NB 2000 500 500 NB NB 500 500 500 500	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	
106 Toluene 107 trans-1,4-Dimethylcyclohexane 108 α-Methylstyrene 109 α-Pinene 110 β-Pinene Acids and derivatives 111 1,4-Butanediol dimethacrylate (BDDMA) 112 1-Ethoxy-2-propyl acetate (2-Acetoxy-1-ethoxypropane) 113 1-Methoxy-2-propyl acetate 114 2-(2-Butoxyethya)yethyl acetate 115 2-Butoxyethyl acetate 116 2-Ethoxyethyl acetate 117 2-Ethylhexyl acrylate	$\begin{array}{c} C_{7}H_{8} \\ C_{8}H_{16} \\ C_{9}H_{10} \\ C_{10}H_{16} \\ C_{10}H_{16} \\ C_{10}H_{16} \\ \end{array}$	108-88-3 2207-04-7 98-83-9 80-56-8 127-91-3 2082-81-7 54839-24-6 108-65-6 124-17-4 112-07-2 111-15-9 103-11-7	200 NB 200 200 200 NB 100 100 100 100 NB	2000 NB 2000 500 NB NB 500 500 500 500 500 NB	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	
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142 Ethyl formate	C ₃ H ₆ O ₂	109-94-4	NB	NB	ppm	
143 Ethyl lactate (Ethyl α-hydroxypropionate)	C ₅ H ₁₀ O ₃	97-64-3	100	500	ppm	
144 Ethyl methacrylate (Ethyl 2-methylpropenoate)	C ₆ H ₁₀ O ₂	97-63-2	NB	NB	ppm	
145 Ethyl methyl carbonate (Methyl ethyl carbonate)	$C_4H_8O_3$	623-53-0	50	200	ppm	
146 Ethyl-3-ethoxypropionate	C ₇ H ₁₄ O ₃	763-69-9	100	500	ppm	
147 Ethylene carbonate (1,3-Dioxolan-2-one)	$C_3H_4O_3$	96-49-1	NB	NB	ppm	Calibration only for heated analyzer.
148 Formic acid	CH ₂ O ₂	64-18-6	200	500	ppm	
149 Furfuryl acetate	C7H8O3	623-17-6	NB	NB	ppm	
150 Heptanoic acid	C7H14O2	111-14-8	NB	NB	ppm	
151 Hexanoic acid (caproic acid)	C ₆ H ₁₂ O ₂	142-62-1	NB	NB	ppm	
152 Hexyl acetate	C ₈ H ₁₆ O ₂	142-92-7	NB	NB	ppm	
153 Isobutyl acetate	C ₆ H ₁₂ O ₂	110-19-0	NB	NB	ppm	
154 Isobutyl formate (2-Methylpropyl formate)	C ₅ H ₁₀ O ₂	542-55-2	NB	NB	ppm	
155 Isobutyl methacrylate	C ₈ H ₁₄ O ₂	97-86-9	NB	NB	ppm	
156 Isooctyl acrylate	C ₁₁ H ₂₀ O ₂	29590-42-9	NB	NB		
					ppm	
157 Isopentyl acetate	C ₇ H ₁₄ O ₂	123-92-2	100	500	ppm	
158 Isopropyl acetate	C ₅ H ₁₀ O ₂	108-21-4	100	500	ppm	
159 Isopropyl lactate	C ₆ H ₁₂ O ₃	63697-00-7	NB	NB	ppm	
160 Isovaleric acid (3-Methylbutyric acid, Isopentanoic acid, Delphinic		503-74-2	NB	NB	ppm	
161 Lactic acid	C ₃ H ₆ O ₃	50-21-5	NB	NB	ppm	
162 Methacrylic acid	$C_4H_6O_2$	79-41-4	NB	NB	ppm	
163 Methyl-3-methoxypropionate (3-Methoxypropanoic acid methyl es	ter C ₅ H ₁₀ O ₃	3852-09-3	NB	NB	ppm	
164 Methyl acetate	C ₃ H ₆ O ₂	79-20-9	100	500	ppm	
165 Methyl acrylate	$C_4H_6O_2$	96-33-3	100	500	ppm	
166 Methyl formate	$C_2H_4O_2$	107-31-3	100	500	ppm	
167 Methyl methacrylate	C5H802	80-62-6	100	500	ppm	
168 Methyl valerate (Pentanoic acid methyl ester)	C ₆ H ₁₂ O ₂	624-24-8	NB	NB	ppm	
169 Pentyl acetate (Banana oil)	C ₇ H ₁₄ O ₂	628-63-7	100	500	ppm	
170 Propionic acid	C ₃ H ₆ O ₂	79-09-4	100	500	ppm	
171 Propyl acetate	C ₅ H ₁₀ O ₂	109-60-4	100	500	ppm	
172 Propylene carbonate (4-Methyl-1,3-dioxolan-2-one)	C ₄ H ₆ O ₃	108-32-7	NB	NB		
173 tert-Butyl acetate					ppm	
	C ₆ H ₁₂ O ₂	540-88-5	NB	NB	ppm	
174 trans-2-Hexenyl acetate	C ₈ H ₁₄ O ₂	2497-18-9	NB	NB	ppm	
175 Valeric acid (Pentanoic acid)	C ₅ H ₁₀ O ₂	109-52-4	NB	NB	ppm	
176 Vinyl acetate	$C_4H_6O_2$	108-05-4	100	500	ppm	
177 Vinylene carbonate (1,3-Dioxol-2-one)	C ₃ H ₂ O ₃	872-36-6	NB	NB	ppm	Calibration only for heated analyzer.
Aldehydes						
178 2-Ethyl-2-hexenal	C ₈ H ₁₄ O	645-62-5				
		040 02 0	NB	NB	ppm	
179 2-Ethylacrolein (2-Ethylacrylaldehyde)	C ₅ H ₈ O	922-63-4	NB	NB NB	ppm	
-						
179 2-Ethylacrolein (2-Ethylacrylaldehyde)	C ₅ H ₈ O	922-63-4	NB	NB	ppm	
179 2-Ethylacrolein (2-Ethylacrylaldehyde) 180 2-Ethylhexylaldehyde (2-Ethylhexanal)	C₅H ₈ O C ₈ H ₁₆ O	922-63-4 123-05-7	NB 200	NB 1000	ppm ppm	
179 2-Ethylacrolein (2-Ethylacrylaldehyde) 180 2-Ethylhexylaldehyde (2-Ethylhexanal) 181 2-Methylbutylaldehyde	C ₅ H ₈ O C ₈ H ₁₆ O C ₅ H ₁₀ O	922-63-4 123-05-7 96-17-3	NB 200 NB	NB 1000 NB	ppm ppm ppm	
179 2-Ethylacrolein (2-Ethylacrylaldehyde) 180 2-Ethylhexylaldehyde (2-Ethylhexanal) 181 2-Methylbutylaldehyde 182 5-Hydroxymethyl-2-furfural (5-Hydroxymethyl-2-furaldehyde)	$C_{5}H_{8}O$ $C_{8}H_{16}O$ $C_{5}H_{10}O$ $C_{6}H_{6}O_{3}$	922-63-4 123-05-7 96-17-3 67-47-0	NB 200 NB NB	NB 1000 NB NB	ppm ppm ppm ppm	
 179 2-Ehylacrolein (2-Ethylacrylaldehyde) 180 2-Ethylhexylaldehyde (2-Ethylhexanal) 181 2-Methylbutylaldehyde 182 5-Hydroxymethyl-2-furfural (5-Hydroxymethyl-2-furaldehyde) 183 5-Methylfurfural (5-Methyl-2-furaldehyde) 	$C_{5}H_{8}O$ $C_{8}H_{16}O$ $C_{5}H_{10}O$ $C_{6}H_{6}O_{3}$ $C_{6}H_{6}O_{2}$	922-63-4 123-05-7 96-17-3 67-47-0 620-02-0	NB 200 NB NB 100	NB 1000 NB NB 500	ppm ppm ppm ppm ppm	Only non-instrument specific references. Chemical not available.
 179 2-Ehylacrolein (2-Ethylacrylaldehyde) 180 2-Ethylhexylaldehyde (2-Ethylhexanal) 181 2-Methylbutylaldehyde 182 5-Hydroxymethyl-2-furfural (5-Hydroxymethyl-2-furaldehyde) 183 5-Methylfurfural (5-Methyl-2-furaldehyde) 184 Acetaldehyde 	$\begin{array}{c} C_{5}H_{8}O\\ C_{8}H_{16}O\\ C_{5}H_{10}O\\ C_{6}H_{6}O_{3}\\ C_{6}H_{6}O_{2}\\ C_{2}H_{4}O\\ C_{3}H_{4}O\\ \end{array}$	922-63-4 123-05-7 96-17-3 67-47-0 620-02-0 75-07-0 107-02-8	NB 200 NB 100 200 NB	NB 1000 NB 500 1000 NB	ppm ppm ppm ppm ppm ppm	Only non-instrument specific references. Chemical not available.
 179 2-Ethylacrolein (2-Ethylacrylaldehyde) 180 2-Ethylhexylaldehyde (2-Ethylhexanal) 181 2-Methylbutylaldehyde 182 5-Hydroxymethyl-2-furfural (5-Hydroxymethyl-2-furaldehyde) 183 5-Methylfurfural (5-Methyl-2-furaldehyde) 184 Acetaldehyde 185 Acrolein (Acrylic aldehyde) 186 Benzaldehyde 	$\begin{array}{c} C_5H_8O\\ C_8H_{16}O\\ C_5H_{10}O\\ C_6H_6O_3\\ C_6H_6O_2\\ C_2H_4O\\ C_3H_4O\\ C_7H_6O\\ \end{array}$	922-63-4 123-05-7 96-17-3 67-47-0 620-02-0 75-07-0 107-02-8 100-52-7	NB 200 NB 100 200 NB NB	NB 1000 NB 500 1000 NB NB	ppm ppm ppm ppm ppm ppm ppm	Only non-instrument specific references. Chemical not available.
 179 2-Ehylacrolein (2-Ethylacrylaldehyde) 180 2-Ethylhexylaldehyde (2-Ethylhexanal) 181 2-Methylbutylaldehyde 182 5-Hydroxymethyl-2-furfural (5-Hydroxymethyl-2-furaldehyde) 183 5-Methylfurfural (5-Methyl-2-furaldehyde) 184 Acetaldehyde 185 Acrolein (Acrylic aldehyde) 186 Benzaldehyde 187 Butylaldehyde (Butanal) 	$C_{5}H_{8}O$ $C_{8}H_{16}O$ $C_{5}H_{10}O$ $C_{6}H_{6}O_{3}$ $C_{6}H_{6}O_{2}$ $C_{2}H_{4}O$ $C_{3}H_{4}O$ $C_{7}H_{6}O$ $C_{4}H_{8}O$	922-63-4 123-05-7 96-17-3 67-47-0 620-02-0 75-07-0 107-02-8 100-52-7 123-72-8	NB 200 NB 100 200 NB NB 200	NB 1000 NB 500 1000 NB NB 1000	ppm ppm ppm ppm ppm ppm ppm ppm	Only non-instrument specific references. Chemical not available.
 179 2-Ehylacrolein (2-Ethylacrylaldehyde) 180 2-Ethylhexylaldehyde (2-Ethylhexanal) 181 2-Methylbutylaldehyde 182 5-Hydroxymethyl-2-furfural (5-Hydroxymethyl-2-furaldehyde) 183 5-Methylfurfural (5-Methyl-2-furaldehyde) 184 Acetaldehyde 185 Acrolein (Acrylic aldehyde) 186 Benzaldehyde 187 Butylaldehyde (Butanal) 188 Citronellal 	$\begin{array}{c} C_{5}H_{8}O\\ C_{8}H_{16}O\\ C_{5}H_{10}O\\ C_{6}H_{6}O_{3}\\ C_{6}H_{6}O_{2}\\ C_{2}H_{4}O\\ C_{3}H_{4}O\\ C_{7}H_{6}O\\ C_{7}H_{6}O\\ C_{4}H_{8}O\\ C_{10}H_{18}O\end{array}$	922-63-4 123-05-7 96-17-3 67-47-0 620-02-0 75-07-0 107-02-8 100-52-7 123-72-8 106-23-0	NB 200 NB 100 200 NB NB 200 NB	NB 1000 NB 500 1000 NB NB 1000 NB	ppm ppm ppm ppm ppm ppm ppm ppm	Only non-instrument specific references. Chemical not available.
 179 2-Ehylacrolein (2-Ethylacrylaldehyde) 180 2-Ethylhexylaldehyde (2-Ethylhexanal) 181 2-Methylbutylaldehyde 182 5-Hydroxymethyl-2-furfural (5-Hydroxymethyl-2-furaldehyde) 183 5-Methylfurfural (5-Methyl-2-furaldehyde) 184 Acetaldehyde 185 Acrolein (Acrylic aldehyde) 186 Benzaldehyde 187 Butylaldehyde (Butanal) 188 Citronellal 189 Crotonaldehyde 	$\begin{array}{c} C_{5}H_{8}O\\ C_{8}H_{16}O\\ C_{5}H_{10}O\\ C_{6}H_{6}O_{3}\\ C_{6}H_{6}O_{2}\\ C_{2}H_{4}O\\ C_{3}H_{4}O\\ C_{7}H_{6}O\\ C_{7}H_{6}O\\ C_{4}H_{8}O\\ C_{10}H_{18}O\\ C_{4}H_{6}O\\ \end{array}$	922-63-4 123-05-7 96-17-3 67-47-0 620-02-0 75-07-0 107-02-8 100-52-7 123-72-8 106-23-0 4170-30-3	NB 200 NB 100 200 NB 200 NB 200 NB NB	NB 1000 NB 500 1000 NB 1000 NB 1000 NB	ppm ppm ppm ppm ppm ppm ppm ppm ppm	
 179 2-Ehylacrolein (2-Ethylacrylaldehyde) 180 2-Ethylhexylaldehyde (2-Ethylhexanal) 181 2-Methylbutylaldehyde 182 5-Hydroxymethyl-2-furfural (5-Hydroxymethyl-2-furaldehyde) 183 5-Methylfurfural (5-Methyl-2-furaldehyde) 184 Acetaldehyde 185 Acrolein (Acrylic aldehyde) 186 Benzaldehyde (Butanal) 188 Citronellal 189 Crotonaldehyde 190 Formaldehyde 	$\begin{array}{c} C_{5}H_{8}O\\ C_{8}H_{16}O\\ C_{5}H_{10}O\\ C_{6}H_{6}O_{3}\\ C_{6}H_{6}O_{2}\\ C_{2}H_{4}O\\ C_{3}H_{4}O\\ C_{7}H_{6}O\\ C_{4}H_{8}O\\ C_{10}H_{18}O\\ C_{4}H_{6}O\\ CH_{2}O\\ \end{array}$	922-63-4 123-05-7 96-17-3 67-47-0 620-02-0 75-07-0 107-02-8 100-52-7 123-72-8 106-23-0 4170-30-3 50-00-0	NB 200 NB 100 200 NB 200 NB 200 NB NB NB	NB 1000 NB 500 1000 NB 1000 NB NB NB	ppm ppm ppm ppm ppm ppm ppm ppm ppm	Only non-instrument specific references. Chemical not available. Maximum calibration 500ppm.
 179 2-Ehylacrolein (2-Ethylacrylaldehyde) 180 2-Ethylhexylaldehyde (2-Ethylhexanal) 181 2-Methylbutylaldehyde 182 5-Hydroxymethyl-2-furfural (5-Hydroxymethyl-2-furaldehyde) 183 5-Methylfurfural (5-Methyl-2-furaldehyde) 184 Acetaldehyde 185 Acrolein (Acrylic aldehyde) 186 Benzaldehyde (Butanal) 188 Citronellal 189 Crotonaldehyde 190 Formaldehyde 191 Furfural (2-Furaldehyde) 	$\begin{array}{c} C_{5}H_{8}O\\ C_{8}H_{16}O\\ C_{5}H_{10}O\\ C_{6}H_{6}O_{3}\\ C_{6}H_{6}O_{2}\\ C_{2}H_{4}O\\ C_{3}H_{4}O\\ C_{7}H_{6}O\\ C_{4}H_{8}O\\ C_{10}H_{18}O\\ C_{4}H_{6}O\\ C_{10}H_{18}O\\ C_{5}H_{4}O_{2}\\ \end{array}$	922-63-4 123-05-7 96-17-3 67-47-0 620-02-0 75-07-0 107-02-8 100-52-7 123-72-8 106-23-0 4170-30-3 50-00-0 98-01-1	NB 200 NB 100 200 NB 200 NB NB NB NB 200	NB 1000 NB 500 1000 NB 1000 NB NB NB NB 1000	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	
 179 2-Ehylacrolein (2-Ethylacrylaldehyde) 180 2-Ethylhexylaldehyde (2-Ethylhexanal) 181 2-Methylbutylaldehyde 182 5-Hydroxymethyl-2-furfural (5-Hydroxymethyl-2-furaldehyde) 183 5-Methylfurfural (5-Methyl-2-furaldehyde) 184 Acetaldehyde 185 Acrolein (Acrylic aldehyde) 186 Benzaldehyde (Butanal) 188 Citronellal 189 Crotonaldehyde 190 Formaldehyde 191 Furfural (2-Furaldehyde) 192 Glutaraldehyde 	$\begin{array}{c} C_{5}H_{8}O\\ C_{8}H_{16}O\\ C_{5}H_{10}O\\ C_{6}H_{6}O_{3}\\ C_{6}H_{6}O_{2}\\ C_{2}H_{4}O\\ C_{3}H_{4}O\\ C_{3}H_{4}O\\ C_{7}H_{6}O\\ C_{4}H_{6}O\\ C_{10}H_{18}O\\ C_{4}H_{6}O\\ C_{4}H_{6}O\\ C_{4}H_{6}O\\ C_{5}H_{4}O_{2}\\ C_{5}H_{8}O_{2}\end{array}$	922-63-4 123-05-7 96-17-3 67-47-0 620-02-0 75-07-0 107-02-8 100-52-7 123-72-8 106-23-0 4170-30-3 50-00-0 98-01-1 111-30-8	NB 200 NB 100 200 NB 200 NB NB NB 200 NB 200 NB	NB 1000 NB 500 1000 NB 1000 NB NB 1000 NB	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	
 179 2-Ethylacrolein (2-Ethylacrylaldehyde) 180 2-Ethylhexylaldehyde (2-Ethylhexanal) 181 2-Methylbutylaldehyde 182 5-Hydroxymethyl-2-furfural (5-Hydroxymethyl-2-furaldehyde) 183 5-Methylfurfural (5-Methyl-2-furaldehyde) 184 Acetaldehyde 185 Acrolein (Acrylic aldehyde) 186 Benzaldehyde 187 Butylaldehyde (Butanal) 188 Citronella 189 Crotonaldehyde 190 Formaldehyde 191 Furfural (2-Furaldehyde) 192 Glutaraldehyde 193 Hexanal (Hexanaldehyde) 	$\begin{array}{c} C_{5}H_{8}O\\ C_{8}H_{16}O\\ C_{5}H_{10}O\\ C_{5}H_{0}O_{3}\\ C_{6}H_{6}O_{3}\\ C_{2}H_{4}O\\ C_{2}H_{4}O\\ C_{3}H_{4}O\\ C_{7}H_{6}O\\ C_{4}H_{8}O\\ C_{10}H_{18}O\\ C_{4}H_{6}O\\ C_{4}H_{6}O\\ C_{5}H_{6}O_{2}\\ C_{5}H_{9}O_{2}\\ C_{5}H_{12}O\\ \end{array}$	922-63-4 123-05-7 96-17-3 67-47-0 620-02-0 107-02-8 100-52-7 123-72-8 106-23-0 41170-30-3 50-00-0 98-01-1 111-30-8 66-25-1	NB 200 NB 100 200 NB 200 NB NB 200 NB 200 NB 200 NB 100	NB 1000 NB 500 1000 NB 1000 NB NB 1000 NB 500	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	
 179 2-Ehylacrolein (2-Ethylacrylaldehyde) 180 2-Ethylhexylaldehyde (2-Ethylhexanal) 181 2-Methylbutylaldehyde 182 5-Hydroxymethyl-2-furfural (5-Hydroxymethyl-2-furaldehyde) 183 5-Methylfurfural (5-Methyl-2-furaldehyde) 184 Acetaldehyde 185 Acrolein (Acrylic aldehyde) 186 Benzaldehyde 187 Butylaldehyde (Butanal) 188 Citronellal 189 Crotonaldehyde 190 Formaldehyde 191 Furfural (2-Furaldehyde) 192 Glutaraldehyde 193 Hexanal (Hexanaldehyde) 194 Isobutyraldehyde (2-Methylpropanal) 	$\begin{array}{c} C_{5}H_{8}O\\ C_{8}H_{16}O\\ C_{5}H_{10}O\\ C_{5}H_{0}O_{3}\\ C_{6}H_{6}O_{2}\\ C_{2}H_{4}O\\ C_{3}H_{4}O\\ C_{7}H_{6}O\\ C_{7}H_{6}O\\ C_{4}H_{8}O\\ C_{10}H_{18}O\\ C_{4}H_{6}O\\ CH_{2}O\\ C_{5}H_{6}O_{2}\\ C_{5}H_{6}O_{2}\\ C_{6}H_{12}O\\ C_{6}H_{12}O\\ C_{4}H_{8}O\\ \end{array}$	922-63-4 123-05-7 96-17-3 67-47-0 620-02-0 107-02-8 100-52-7 123-72-8 106-23-0 4170-30-3 50-00-0 98-01-1 111-30-8 66-25-1 78-84-2	NB 200 NB 100 200 NB 200 NB NB 200 NB 200 NB 100 200	NB 1000 NB 500 NB 1000 NB NB 1000 NB 1000 NB 500 1000	ppm	
 179 2-Ehylacrolein (2-Ethylacrylaldehyde) 180 2-Ethylhexylaldehyde (2-Ethylhexanal) 181 2-Methylbutylaldehyde 182 5-Hydroxymethyl-2-furfural (5-Hydroxymethyl-2-furaldehyde) 183 5-Methylfurfural (5-Methyl-2-furaldehyde) 184 Acetaldehyde 185 Acrolein (Acrylic aldehyde) 186 Benzaldehyde 187 Butylaldehyde (Butanal) 188 Citronellal 189 Crotonaldehyde 190 Formaldehyde 191 Furfural (2-Furaldehyde) 192 Glutaraldehyde 193 Hexanal (Hexanaldehyde) 194 Isobutyraldehyde (2-Methylpropanal) 195 Isovaleraldehyde 	$\begin{array}{c} {\rm C_5H_8O} \\ {\rm C_8H_{16}O} \\ {\rm C_8H_{10}O} \\ {\rm C_6H_6O_3} \\ {\rm C_6H_6O_2} \\ {\rm C_2H_4O} \\ {\rm C_3H_4O} \\ {\rm C_7H_6O} \\$	922-63-4 123-05-7 96-17-3 67-47-0 620-02-0 75-07-0 107-02-8 100-52-7 123-72-8 106-23-0 4170-30-3 50-00-0 98-01-1 111-30-8 66-25-1 78-84-2 590-86-3	NB 200 NB 100 200 NB 200 NB 200 NB 100 200 NB	NB 1000 NB 500 000 NB 1000 NB NB 1000 NB 500 1000 NB	ppm	
 179 2-Ehylacrolein (2-Ethylacrylaldehyde) 180 2-Ethylhexylaldehyde (2-Ethylhexanal) 181 2-Methylbutylaldehyde 182 5-Hydroxymethyl-2-furfural (5-Hydroxymethyl-2-furaldehyde) 183 5-Methylfurfural (5-Methyl-2-furaldehyde) 184 Acetaldehyde 185 Acrolein (Acrylic aldehyde) 186 Benzaldehyde 187 Butylaldehyde (Butanal) 188 Citronellal 189 Crotonaldehyde 190 Formaldehyde 191 Furfural (2-Furaldehyde) 192 Glutaraldehyde 193 Hexanal (Hexanaldehyde) 194 Isobutyraldehyde (2-Methylpropanal) 195 Isovaleraldehyde 196 Methacrylaldehyde (2-Methyl-2-propenal) 	$\begin{array}{c} C_{5}H_{8}O\\ C_{8}H_{16}O\\ C_{8}H_{10}O\\ C_{6}H_{6}O_{3}\\ C_{6}H_{6}O_{2}\\ C_{2}H_{4}O\\ C_{3}H_{4}O\\ C_{7}H_{6}O\\ C_{7}H_{6}O\\ C_{4}H_{8}O\\ C_{10}H_{18}O\\ C_{4}H_{6}O\\ C_{5}H_{4}O_{2}\\ C_{5}H_{8}O_{2}\\ C_{6}H_{12}O\\ C_{4}H_{6}O\\ C_{5}H_{10}O\\ C_{4}H_{6}O\\ \end{array}$	922-63-4 123-05-7 96-17-3 67-47-0 620-02-0 75-07-0 107-02-8 100-52-7 123-72-8 106-23-0 4170-30-3 50-00-0 98-01-1 111-30-8 66-25-1 78-84-2 590-86-3 78-85-3	NB 200 NB 100 200 NB 200 NB 200 NB 200 NB 100 200 NB 200 NB 200 200	NB 1000 NB 500 1000 NB 1000 NB 1000 NB 1000 NB 500 1000 NB 1000	ppm	
 179 2-Ehylacrolein (2-Ethylacrylaldehyde) 180 2-Ethylhexylaldehyde (2-Ethylhexanal) 181 2-Methylbutylaldehyde 182 5-Hydroxymethyl-2-furfural (5-Hydroxymethyl-2-furaldehyde) 183 5-Methylfurfural (5-Methyl-2-furaldehyde) 184 Acetaldehyde 185 Acrolein (Acrylic aldehyde) 186 Benzaldehyde 187 Butylaldehyde (Butanal) 188 Citronellal 189 Crotonaldehyde 190 Formaldehyde 191 Furfural (2-Furaldehyde) 192 Glutaraldehyde 193 Hexanal (Hexanaldehyde) 194 Isobutyraldehyde (2-Methylpropanal) 195 Isovaleraldehyde 196 Methacrylaldehyde (2-Methyl-2-propenal) 197 Nonanal 	$\begin{array}{c} C_5H_8O\\ C_8H_{16}O\\ C_8H_{10}O\\ C_6H_6O_2\\ C_2H_4O\\ C_2H_4O\\ C_2H_4O\\ C_7H_6O\\ C_7H_6O\\ C_7H_6O\\ C_7H_6O\\ C_7H_6O\\ C_6H_1O\\ C_6H_1O\\ C_6H_0O\\ C_6H_1O\\ C_6H_1O\\ C_6H_1O\\ C_6H_1O\\ C_6H_1O\\ C_6H_1O\\ C_6H_1O\\ C_9H_1O\\ C_9H_1$	922-63-4 123-05-7 96-17-3 67-47-0 620-02-0 75-07-0 107-02-8 100-52-7 123-72-8 106-23-0 4170-30-3 50-00-0 98-01-1 111-30-8 66-25-1 78-84-2 590-86-3 78-85-3 78-85-3 124-19-6	NB 200 NB 100 200 NB 200 NB 200 NB 200 NB 100 200 NB 200 NB 200 NB	NB 1000 NB 500 1000 NB 1000 NB 1000 NB 500 1000 NB 1000 NB	ppm	
 179 2-Ehylacrolein (2-Ethylacrylaldehyde) 180 2-Ethylhexylaldehyde (2-Ethylhexanal) 181 2-Methylbutylaldehyde 182 5-Hydroxymethyl-2-furfural (5-Hydroxymethyl-2-furaldehyde) 183 5-Methylfurfural (5-Methyl-2-furaldehyde) 184 Acetaldehyde 185 Acrolein (Acrylic aldehyde) 186 Benzaldehyde 187 Butylaldehyde (Butanal) 188 Citronellal 189 Crotonaldehyde 190 Formaldehyde 191 Furfural (2-Furaldehyde) 192 Glutaraldehyde 193 Hexanal (Hexanaldehyde) 194 Isobutyraldehyde (2-Methylpropanal) 195 Isovaleraldehyde 196 Methacrylaldehyde (2-Methyl-2-propenal) 	$\begin{array}{c} C_{5}H_{8}O\\ C_{8}H_{16}O\\ C_{8}H_{10}O\\ C_{6}H_{6}O_{3}\\ C_{6}H_{6}O_{2}\\ C_{2}H_{4}O\\ C_{3}H_{4}O\\ C_{7}H_{6}O\\ C_{7}H_{6}O\\ C_{4}H_{8}O\\ C_{10}H_{18}O\\ C_{4}H_{6}O\\ C_{5}H_{4}O_{2}\\ C_{5}H_{8}O_{2}\\ C_{6}H_{12}O\\ C_{4}H_{6}O\\ C_{5}H_{10}O\\ C_{4}H_{6}O\\ \end{array}$	922-63-4 123-05-7 96-17-3 67-47-0 620-02-0 75-07-0 107-02-8 100-52-7 123-72-8 106-23-0 4170-30-3 50-00-0 98-01-1 111-30-8 66-25-1 78-84-2 590-86-3 78-85-3	NB 200 NB 100 200 NB 200 NB 200 NB 200 NB 100 200 NB 200 NB 200 200	NB 1000 NB 500 1000 NB 1000 NB 1000 NB 1000 NB 500 1000 NB 1000	ppm	
 179 2-Ehylacrolein (2-Ethylacrylaldehyde) 180 2-Ethylhexylaldehyde (2-Ethylhexanal) 181 2-Methylbutylaldehyde 182 5-Hydroxymethyl-2-furfural (5-Hydroxymethyl-2-furaldehyde) 183 5-Methylfurfural (5-Methyl-2-furaldehyde) 184 Acetaldehyde 185 Acrolein (Acrylic aldehyde) 186 Benzaldehyde 187 Butylaldehyde (Butanal) 188 Citronellal 189 Crotonaldehyde 190 Formaldehyde 191 Furfural (2-Furaldehyde) 192 Glutaraldehyde 193 Hexanal (Hexanaldehyde) 194 Isobutyraldehyde (2-Methylpropanal) 195 Isovaleraldehyde 196 Methacrylaldehyde (2-Methyl-2-propenal) 197 Nonanal 	$\begin{array}{c} C_5H_8O\\ C_8H_{16}O\\ C_8H_{10}O\\ C_6H_6O_2\\ C_2H_4O\\ C_2H_4O\\ C_2H_4O\\ C_7H_6O\\ C_7H_6O\\ C_7H_6O\\ C_7H_6O\\ C_7H_6O\\ C_6H_1O\\ C_6H_1O\\ C_6H_0O\\ C_6H_1O\\ C_6H_1O\\ C_6H_1O\\ C_6H_1O\\ C_6H_1O\\ C_6H_1O\\ C_6H_1O\\ C_9H_1O\\ C_9H_1$	922-63-4 123-05-7 96-17-3 67-47-0 620-02-0 75-07-0 107-02-8 100-52-7 123-72-8 106-23-0 4170-30-3 50-00-0 98-01-1 111-30-8 66-25-1 78-84-2 590-86-3 78-85-3 78-85-3 124-19-6	NB 200 NB 100 200 NB 200 NB 200 NB 200 NB 100 200 NB 200 NB 200 NB	NB 1000 NB 500 1000 NB 1000 NB 1000 NB 500 1000 NB 1000 NB	ppm	
 179 2-Ehylacrolein (2-Ethylacrylaldehyde) 180 2-Ethylhexylaldehyde (2-Ethylhexanal) 181 2-Methylbutylaldehyde 182 5-Hydroxymethyl-2-furfural (5-Hydroxymethyl-2-furaldehyde) 183 5-Methylfurfural (5-Methyl-2-furaldehyde) 184 Acetaldehyde 185 Acrolein (Acrylic aldehyde) 186 Benzaldehyde 187 Butylaldehyde (Butanal) 188 Citronellal 189 Crotonaldehyde 190 Formaldehyde 191 Furfural (2-Furaldehyde) 192 Glutaraldehyde 193 Hexanal (Hexanaldehyde) 194 Isobutyraldehyde (2-Methylpropanal) 195 Isovaleraldehyde 196 Methacrylaldehyde (2-Methyl-2-propenal) 197 Nonanal 198 Octanal (Caprylic aldehyde) 	$\begin{array}{c} C_5H_8O\\ C_8H_{16}O\\ C_6H_{10}O\\ C_6H_6O_2\\ C_2H_4O\\ C_2H_4O\\ C_7H_4O\\ C_7H_4O\\ C_7H_4O\\ C_4H_6O\\ C_10H_{18}O\\ C_4H_6O\\ CH_2O\\ C_5H_6O_2\\ C_6H_{12}O\\ C_6H_{12}O\\ C_6H_{12}O\\ C_6H_{10}O\\ C_6H_$	922-63-4 123-05-7 96-17-3 67-47-0 620-02-0 75-07-0 107-02-8 100-52-7 123-72-8 106-23-0 4170-30-3 50-00-0 98-01-1 111-30-8 66-25-1 78-84-2 590-86-3 78-85-3 124-19-6 124-13-0	NB 200 NB 100 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB	NB 1000 NB 500 1000 NB 1000 NB 1000 NB 500 1000 NB 1000 NB 1000 NB 500	ppm	Maximum calibration 500ppm.
 179 2-Ehylacrolein (2-Ethylacrylaldehyde) 180 2-Ethylhexylaldehyde (2-Ethylhexanal) 181 2-Methylbutylaldehyde 182 5-Hydroxymethyl-2-furfural (5-Hydroxymethyl-2-furaldehyde) 183 5-Methylfurfural (5-Methyl-2-furaldehyde) 184 Acetaldehyde 185 Acrolein (Acrylic aldehyde) 186 Benzaldehyde 187 Butylaldehyde (Butanal) 188 Citronella 189 Crotonaldehyde 190 Formaldehyde 191 Furfural (2-Furaldehyde) 192 Glutaraldehyde 193 Hexanal (Hexanaldehyde) 194 Isobutyraldehyde (2-Methyl-2-propenal) 195 Isovaleraldehyde 196 Methacrylaldehyde (2-Methyl-2-propenal) 197 Nonanal 198 Octanal (Caprylic aldehyde) 199 o-Phthaldehyde (OPA) 	$\begin{array}{c} C_{5}H_{8}O\\ C_{8}H_{16}O\\ C_{5}H_{10}O\\ C_{5}H_{0}O_{3}\\ C_{6}H_{6}O_{2}\\ C_{2}H_{4}O\\ C_{2}H_{4}O\\ C_{7}H_{6}O\\ C_{4}H_{9}O\\ C_{4}H_{6}O\\ C_{4}H_{6}O\\ C_{4}H_{6}O\\ C_{5}H_{4}O_{2}\\ C_{5}H_{9}O_{2}\\ C_{5}H_{12}O\\ C_{4}H_{6}O\\ C_{5}H_{10}O\\ C_{4}H_{6}O\\ C_{5}H_{10}O\\ C_{6}H_{10}O\\ C_{6}H_$	922-63-4 123-05-7 96-17-3 67-47-0 620-02-0 75-07-0 107-02-8 100-52-7 123-72-8 106-23-0 4170-30-3 50-00-0 98-01-1 111-30-8 66-25-1 78-84-2 590-86-3 78-84-2 590-86-3 78-845-3 124-19-6 124-13-0 643-79-8	NB 200 NB 100 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB	NB 1000 NB 500 1000 NB 1000 NB 1000 NB 1000 NB 1000 NB 1000 NB 1000 NB	ррт ррт ррт ррт ррт ррт ррт ррт	Maximum calibration 500ppm.
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 179 2-Ehylacrolein (2-Ethylacrylaldehyde) 180 2-Ethylhexylaldehyde (2-Ethylhexanal) 181 2-Methylbutylaldehyde 182 5-Hydroxymethyl-2-furfural (5-Hydroxymethyl-2-furaldehyde) 183 5-Methylfurfural (5-Methyl-2-furaldehyde) 184 Acetaldehyde 185 Acrolein (Acrylic aldehyde) 186 Benzaldehyde 187 Butylaldehyde (Butanal) 188 Citronellal 189 Crotonaldehyde 190 Formaldehyde 191 Furfural (2-Furaldehyde) 192 Glutraraldehyde 193 Hexanal (Hexanaldehyde) 194 Isobutyraldehyde (2-Methyl-popanal) 195 Isovaleraldehyde 196 Methacrylaldehyde (2-Methyl-propanal) 197 Nonanal 198 Octanal (Caprylic aldehyde) 199 o-Phthaldehyde (OPA) 200 o-Tolualdehyde 201 Pentanal (Pentanaldehyde; Valeraic aldehyde; Valeric aldehyde; 	$\begin{array}{c} {\rm C_5H_8O} \\ {\rm C_8H_{16}O} \\ {\rm C_8H_{10}O} \\ {\rm C_5H_{10}O} \\ {\rm C_6H_6O_2} \\ {\rm C_2H_4O} \\ {\rm C_3H_4O} \\ {\rm C_7H_6O} \\ {\rm C_7H_6O} \\ {\rm C_7H_6O} \\ {\rm C_4H_8O} \\ {\rm C_10H_{18}O} \\ {\rm C_4H_6O} \\ {\rm C_4H_6O} \\ {\rm C_5H_{4O}O} \\ {\rm C_5H_{4O}O} \\ {\rm C_6H_{10}O} \\ {\rm C_6H_{10}O} \\ {\rm C_6H_{10}O} \\ {\rm C_8H_6O} \\ {\rm C_8H_{10}O} \\ {\rm C_8H_{10$	922-63-4 123-05-7 96-17-3 67-47-0 620-02-0 107-02-8 100-52-7 123-72-8 106-23-0 4170-30-3 50-00-0 98-01-1 111-30-8 66-25-1 78-84-2 590-86-3 78-85-3 124-19-6 124-13-0 643-79-8 529-20-4 110-62-3	NB 200 NB 100 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB	NB 1000 NB 500 1000 NB 1000 NB 1000 NB 1000 NB 1000 NB 1000 NB 1000 NB	ppm ppm	Maximum calibration 500ppm.
 179 2-Ehylacrolein (2-Ethylacrylaldehyde) 180 2-Ethylhexylaldehyde (2-Ethylhexanal) 181 2-Methylbutylaldehyde 182 5-Hydroxymethyl-2-furfural (5-Hydroxymethyl-2-furaldehyde) 183 5-Methylfurfural (5-Methyl-2-furaldehyde) 184 Acetaldehyde 185 Acrolein (Acrylic aldehyde) 186 Benzaldehyde 187 Butylaldehyde (Butanal) 188 Citronellal 189 Crotonaldehyde 190 Formaldehyde 191 Furfural (2-Furaldehyde) 192 Glutaraldehyde 193 Hexanal (Hexanaldehyde) 194 Isobutyraldehyde (2-Methylpropanal) 195 Isovaleraldehyde 196 Methacrylaldehyde (2-Methylpropanal) 197 Nonanal 198 Octanal (Caprylic aldehyde) 199 o-Phthaldehyde (OPA) 200 o-Tolualdehyde 201 Pentanal (Pentanaldehyde; Valeraldehyde; Valeric aldehyde) 202 Iropionaldehyde (Propanal) 203 trans-2-Nonenal 	$\begin{array}{c} {\rm C_5H_8O} \\ {\rm C_8H_{16}O} \\ {\rm C_8H_{16}O} \\ {\rm C_5H_{10}O} \\ {\rm C_6H_6O_2} \\ {\rm C_2H_4O} \\ {\rm C_3H_4O} \\ {\rm C_7H_6O} \\ {\rm C_7H_6O} \\ {\rm C_4H_8O} \\ {\rm C_10H_{18}O} \\ {\rm C_4H_6O} \\ {\rm C_6H_4O_2} \\ {\rm C_5H_4O_2} \\ {\rm C_5H_4O_2} \\ {\rm C_5H_{10}O} \\ {\rm C_6H_{16}O} \\ {\rm C_8H_{16}O} \\ {\rm C_8H_{10}O} \\ {\rm C_8$	922-63-4 123-05-7 96-17-3 67-47-0 620-02-0 75-07-0 107-02-8 100-52-7 123-72-8 106-23-0 4170-30-3 50-00-0 98-01-1 111-30-8 66-25-1 78-84-2 590-86-3 78-85-3 78-85-3 124-19-6 124-13-0 643-79-8 529-20-4 110-62-3 123-38-6	NB 200 NB 100 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB NB 200 NB NB 200 NB NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB 200 NB 200 NB NB 200 NB NB NB NB NB NB NB NB NB NB NB NB NB	NB 1000 NB 500 NB 1000 NB 1000 NB 1000 NB 1000 NB 1000 NB 1000 NB 1000 NB	ррт ррт ррт ррт ррт ррт ррт ррт	Maximum calibration 500ppm.
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179 2-Ethylacrolein (2-Ethylacrylaldehyde) 180 2-Ethylhexylaldehyde (2-Ethylhexanal) 181 2-Methylbutylaldehyde 182 5-Hydroxymethyl-2-furfural (5-Hydroxymethyl-2-furaldehyde) 183 5-Methylfurfural (5-Methyl-2-furaldehyde) 184 Acetaldehyde 185 Acrolein (Acrylic aldehyde) 186 Benzaldehyde 187 Butylaldehyde (Butanal) 188 Citronellal 189 Crotonaldehyde 190 Formaldehyde 191 Furfural (2-Furaldehyde) 192 Glutaraldehyde 193 Hexanal (Hexanaldehyde) 194 Isobutyraldehyde (2-Methylpropanal) 195 Isovaleraldehyde 196 Methacrylaldehyde (2-Methyl-2-propenal) 197 Nonanal 198 Octanal (Caprylic aldehyde) 199 o-Tholaldehyde (OPA) 200 o-Tolualdehyde (Propanal) 201 Pentanal (Pentanaldehyde; Valeraldehyde; Valeric aldehyde) 202 Propionaldehyde (Propanal) 203 trans-2-Nonenal Ketones 204 <td>$\begin{array}{c} C_{5}H_{8}O\\ C_{8}H_{16}O\\ C_{8}H_{10}O\\ C_{6}H_{6}O_{2}\\ C_{2}H_{4}O\\ C_{3}H_{4}O\\ C_{7}H_{6}O\\ C_{7}H_{6}O\\ C_{4}H_{8}O\\ C_{10}H_{18}O\\ C_{4}H_{6}O\\ C_{10}H_{18}O\\ C_{6}H_{12}O\\ C_{6}H_{12}O\\ C_{6}H_{12}O\\ C_{6}H_{12}O\\ C_{6}H_{10}O\\ C_{6}H_{10}O\\ C_{8}H_{16}O\\ C_{8}H_{6}O\\ C_{8}H_{6}O\\ C_{8}H_{6}O\\ C_{8}H_{10}O\\ C_{8}H_{6}O\\ C_{9}H_{10}O\\ C_{9}H_{16}O\\ C$</td> <td>922-63-4 123-05-7 96-17-3 67-47-0 620-02-0 75-07-0 107-02-8 100-52-7 123-72-8 106-23-0 4170-30-3 50-00-0 98-01-1 111-30-8 66-25-1 78-84-2 590-86-3 78-85-3 124-19-6 124-13-0 643-79-8 529-20-4 110-62-3 123-38-6 18829-56-6</td> <td>NB 200 NB NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB NB 200 NB NB NB 200 NB NB NB 200 NB NB NB NB NB NB NB NB NB NB NB NB NB</td> <td>NB 1000 NB 500 1000 NB 1000 NB 1000 NB 1000 NB 1000 NB 1000 NB 1000 NB 1000 NB 1000 NB 1000 NB</td> <td>ррт ррт ррт</td> <td>Maximum calibration 500ppm.</td>	$\begin{array}{c} C_{5}H_{8}O\\ C_{8}H_{16}O\\ C_{8}H_{10}O\\ C_{6}H_{6}O_{2}\\ C_{2}H_{4}O\\ C_{3}H_{4}O\\ C_{7}H_{6}O\\ C_{7}H_{6}O\\ C_{4}H_{8}O\\ C_{10}H_{18}O\\ C_{4}H_{6}O\\ C_{10}H_{18}O\\ C_{6}H_{12}O\\ C_{6}H_{12}O\\ C_{6}H_{12}O\\ C_{6}H_{12}O\\ C_{6}H_{10}O\\ C_{6}H_{10}O\\ C_{8}H_{16}O\\ C_{8}H_{6}O\\ C_{8}H_{6}O\\ C_{8}H_{6}O\\ C_{8}H_{10}O\\ C_{8}H_{6}O\\ C_{9}H_{10}O\\ C_{9}H_{16}O\\ C$	922-63-4 123-05-7 96-17-3 67-47-0 620-02-0 75-07-0 107-02-8 100-52-7 123-72-8 106-23-0 4170-30-3 50-00-0 98-01-1 111-30-8 66-25-1 78-84-2 590-86-3 78-85-3 124-19-6 124-13-0 643-79-8 529-20-4 110-62-3 123-38-6 18829-56-6	NB 200 NB NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB NB 200 NB NB NB 200 NB NB NB 200 NB NB NB NB NB NB NB NB NB NB NB NB NB	NB 1000 NB 500 1000 NB 1000 NB 1000 NB 1000 NB 1000 NB 1000 NB 1000 NB 1000 NB 1000 NB 1000 NB	ррт ррт	Maximum calibration 500ppm.
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179 2-Ethylacrolein (2-Ethylacrylaldehyde) 180 2-Ethylnexylaldehyde (2-Ethylhexanal) 181 2-Methylbutylaldehyde 182 5-Hydroxymethyl-2-furfural (5-Hydroxymethyl-2-furaldehyde) 183 5-Methylfurfural (5-Methyl-2-furaldehyde) 184 Acetaldehyde 185 Acrolein (Acrylic aldehyde) 186 Benzaldehyde 187 Butylaldehyde (Butanal) 188 Citronellal 189 Crotonaldehyde 190 Formaldehyde 191 Furfural (2-Furaldehyde) 192 Glutaraldehyde 193 Hexanal (Hexanaldehyde) 194 Isobutyraldehyde (2-Methylpropanal) 195 Isovaleraldehyde 196 Methacrylaldehyde (2-Methyl-2-propenal) 197 Nonanal 198 Octanal (Caprylic aldehyde; Valeraldehyde; Valeric aldehyde) 199 o-Tolualdehyde (OPA) 200 o-Tolualdehyde (Propanal) 201 Pentanal (Pentanaldehyde; Valeraldehyde; Valeric aldehyde) 202 Propionaldehyde (Propanal) 203 trans-2-Nonenal <	$\begin{array}{c} {}_{S}{H_{8}}{O} \\ {}_{C_{8}}{H_{16}}{O} \\ {}_{C_{8}}{H_{16}}{O} \\ {}_{C_{9}}{H_{10}}{O} \\ {}_{C_{9}}{H_{6}}{O_{3}} \\ {}_{C_{9}}{H_{6}}{O_{3}} \\ {}_{C_{9}}{H_{6}}{O} \\ {}_{C_{2}}{H_{4}}{O} \\ {}_{C_{7}}{H_{6}}{O} \\ {}_{C_{4}}{H_{8}}{O} \\ {}_{C_{7}}{H_{6}}{O} \\ {}_{C_{4}}{H_{8}}{O} \\ {}_{C_{9}}{H_{10}}{O} \\ {}_{$	922-63-4 123-05-7 96-17-3 67-47-0 620-02-0 75-07-0 107-02-8 100-52-7 123-72-8 106-23-0 4170-30-3 50-00-0 98-01-1 111-30-8 66-25-1 78-84-2 590-86-3 78-85-3 124-19-6 124-13-0 643-79-8 529-20-4 110-62-3 123-86 18229-56-6 	NB 200 NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB NB NB 200 NB NB NB 200 NB NB NB 200 NB NB NB 200 NB NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 NB 100 NB 100 NB 200 NB 100 NB 100 NB 100 NB 100 NB 100 NB 100 NB 100 NB 200 NB 100 NB 200 NB 100 NB 200 NB 100 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB NB NB NB NB NB NB NB NB NB NB NB NB	NB 1000 NB NB 1000 NB NB NB NB NB NB 1000 NB NB NB NB NB NB NB NB NB NB NB NB NB	ppm ppm	Maximum calibration 500ppm.
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179 2-Ethylacrolein (2-Ethylacrylaldehyde) 180 2-Ethylnexylaldehyde (2-Ethylhexanal) 181 2-Methylbutylaldehyde 182 5-Hydroxymethyl-2-furfural (5-Hydroxymethyl-2-furaldehyde) 183 5-Methylfurfural (5-Methyl-2-furaldehyde) 184 Acetaldehyde 185 Acrolein (Acrylic aldehyde) 186 Benzaldehyde 187 Butylaldehyde (Butanal) 188 Citronellal 189 Crotonaldehyde 190 Formaldehyde 191 Furfural (2-Furaldehyde) 192 Glutaraldehyde 193 Hexanal (Hexanaldehyde) 194 Isobutyraldehyde (2-Methylpropanal) 195 Isovaleraldehyde 196 Methacrylaldehyde (2-Methyl-2-propenal) 197 Nonanal 198 Octanal (Caprylic aldehyde; Valeraldehyde; Valeric aldehyde) 199 o-Tolualdehyde (OPA) 200 o-Tolualdehyde (Propanal) 201 Pentanal (Pentanaldehyde; Valeraldehyde; Valeric aldehyde) 202 Propionaldehyde (Propanal) 203 trans-2-Nonenal <	$\begin{array}{c} {}_{S}{H_{8}}{O} \\ {}_{C_{8}}{H_{16}}{O} \\ {}_{C_{8}}{H_{16}}{O} \\ {}_{C_{9}}{H_{10}}{O} \\ {}_{C_{9}}{H_{6}}{O_{3}} \\ {}_{C_{9}}{H_{6}}{O_{3}} \\ {}_{C_{9}}{H_{6}}{O} \\ {}_{C_{2}}{H_{4}}{O} \\ {}_{C_{7}}{H_{6}}{O} \\ {}_{C_{4}}{H_{8}}{O} \\ {}_{C_{7}}{H_{6}}{O} \\ {}_{C_{4}}{H_{8}}{O} \\ {}_{C_{9}}{H_{10}}{O} \\ {}_{$	922-63-4 123-05-7 96-17-3 67-47-0 620-02-0 75-07-0 107-02-8 100-52-7 123-72-8 106-23-0 4170-30-3 50-00-0 98-01-1 111-30-8 66-25-1 78-84-2 590-86-3 78-85-3 124-19-6 124-13-0 643-79-8 529-20-4 110-62-3 123-86 18229-56-6 	NB 200 NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB NB NB 200 NB NB NB 200 NB NB NB 200 NB NB NB 200 NB NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 NB 100 NB 100 NB 200 NB 100 NB 100 NB 100 NB 100 NB 100 NB 100 NB 100 NB 200 NB 100 NB 200 NB 100 NB 200 NB 100 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB NB NB NB NB NB NB NB NB NB NB NB NB	NB 1000 NB S000 1000 NB NB 1000 NB NB NB NB NB 1000 NB NB NB NB NB NB NB NB NB NB NB NB NB	ppm ppm	Maximum calibration 500ppm.
179 2-Ethylacrolein (2-Ethylacrylaldehyde) 180 2-Ethylhexylaldehyde (2-Ethylhexanal) 181 2-Methylbutylaldehyde 182 5-Hydroxymethyl-2-furfural (5-Hydroxymethyl-2-furaldehyde) 183 5-Methylfurfural (5-Methyl-2-furaldehyde) 184 Acetaldehyde 185 Acrolein (Acrylic aldehyde) 186 Benzaldehyde 187 Butylaldehyde (Butanal) 188 Citronellal 189 Cortonaldehyde 190 Formaldehyde 191 Furfural (2-Furaldehyde) 192 Glutaraldehyde 193 Hexanal (Hexanaldehyde) 194 Isobutyraldehyde (2-Methylpropanal) 195 Isovaleraldehyde 196 Methacrylaldehyde (2-Methyl-2-propenal) 197 Nonanal 198 Octanal (Caprylic aldehyde) 199 o-Pththaldehyde (OPA) 200 o-Tolualdehyde (Propanal) 203 trans-2-Nonenal Ketones 204 204 2.3-Heptanedione 205 2.3-Heptanedione 206 2	$\begin{array}{c} {}_{S}{H_{8}0} \\ {}_{C_{8}H_{16}0} \\ {}_{C_{8}H_{16}0} \\ {}_{C_{9}H_{10}0} \\ {}_{C_{9}H_{0}0} \\ {}_{C_{9}H_{6}0} \\ {}_{C_{2}H_{4}0} \\ {}_{C_{2}H_{4}0} \\ {}_{C_{2}H_{6}0} \\ {}_{C_{4}H_{6}0} \\ {}_{C_{4}H_{6}0} \\ {}_{C_{4}H_{6}0} \\ {}_{C_{9}H_{12}0} \\ {}_{C_{9}H_{10}0} \\ {}_{C_{9}H_{10}0} \\ {}_{C_{9}H_{16}0} \\ {}_{C_{9}H$	922-63-4 123-05-7 96-17-3 67-47-0 620-02-0 75-07-0 107-02-8 100-52-7 123-72-8 106-23-0 4170-30-3 50-00-0 98-01-1 111-30-8 66-25-1 78-84-2 590-86-3 78-85-3 124-13-0 643-79-8 529-20-4 110-62-3 123-38-6 18829-56-6 123-19-3	NB 200 NB NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 100 NB 200 NB 100 NB 100 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB NB 100 200 NB NB NB 100 200 NB NB NB NB NB 200 NB NB NB NB 200 NB NB NB 200 NB NB NB 200 NB NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 NB 100 NB 100 NB 100 NB 100 NB 100 NB 100 NB 100 NB 100 NB 100 NB 100 NB 100 NB 100 NB 200 NB 100 NB 100 NB 200 NB 100 NB 200 NB 100 NB 200 NB 200 NB 100 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB NB NB NB NB NB NB NB NB NB NB NB NB	NB 1000 NB S000 NB NB 1000 NB NB 1000 NB NB NB 1000 NB NB NB NB 1000 NB NB NB 1000 NB NB NB NB 1000 NB NB NB 1000 NB NB 1000 NB NB 1000 NB NB 1000 NB NB 1000 NB NB 1000 NB NB NB NB NB NB NB NB NB NB NB NB NB	ppm ppm	Maximum calibration 500ppm.
179 2-Ethylacrolein (2-Ethylacrylaldehyde) 180 2-Ethylhexylaldehyde (2-Ethylhexanal) 181 2-Methylbutylaldehyde 182 5-Hydroxymethyl-2-furfural (5-Hydroxymethyl-2-furaldehyde) 183 5-Methylfurfural (5-Methyl-2-furaldehyde) 184 Acetaldehyde 185 Acrolein (Acrylic aldehyde) 186 Benzaldehyde 187 Butylaldehyde (Butanal) 188 Citronellal 189 Crotonaldehyde 190 Formaldehyde 191 Furfural (2-Furaldehyde) 192 Glutaraldehyde 193 Hexanal (Hexanaldehyde) 194 Isobutyraldehyde (2-Methylpropanal) 195 Isovaleraldehyde 196 Methacrylaldehyde (2-Methyl-2-propenal) 197 Nonanal 198 Octanal (Caprylic aldehyde) 199 o-Phthaldehyde (Propanal) 190 Porthaldehyde (Propanal) 191 Purtanal (Pentanaldehyde; Valeraldehyde; Valeric aldehyde) 192 Piropionaldehyde (Propanal) 193 trans-2-Nonenal 194 Sa-Hex	$\begin{array}{c} {}_{S}{H_{8}}{O} \\ {}_{G}{H_{16}}{O} \\ {}_{G}{H_{16}}{O} \\ {}_{G}{H_{16}}{O} \\ {}_{G}{H_{16}}{O} \\ {}_{G}{H_{6}}{O} \\ {}_{G}{H_{6}}{O} \\ {}_{G}{H_{6}}{O} \\ {}_{G}{H_{4}}{O} \\ {}$	922-63-4 123-05-7 96-17-3 67-47-0 620-02-0 75-07-0 107-02-8 100-52-7 123-72-8 106-23-0 41170-30-3 50-00-0 98-01-1 111-30-8 66-25-1 78-84-2 590-86-3 78-85-3 124-19-6 124-13-0 643-79-8 529-20-4 110-62-3 123-86 18829-56-6 18829-56-6 108-83-8 96-04-8 3848-24-6 600-14-6 108-83-8 1192-62-7 583-60-8 821-55-6 123-19-3 123-19-3 123-19-3 123-19-3	NB 200 NB NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB NB 100 200 NB NB NB 200 NB NB NB NB 200 NB NB NB 200 NB NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB NB 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 200 NB 100 NB 100 200 NB 100 200 NB 100 NB 100 NB 200 NB 100 NB 200 NB 100 NB 200 NB 100 NB 200 NB NB 200 NB NB NB NB NB NB NB NB NB NB NB NB NB	NB 1000 NB S000 NB NB 1000 NB NB 1000 NB NB NB 1000 NB NB NB NB NB NB NB NB NB NB NB NB NB	ppm ppm	Maximum calibration 500ppm.

216 Acetoin (3-hydroxybutanone)	C ₄ H ₈ O ₂	513-86-0	NB	NB ppn	
217 Acetone	C ₃ H ₆ O	67-64-1	200	1000 ppn	
218 Acetophenone (Phenyl methyl ketone)	C ₈ H ₈ O	98-86-2	100	500 ppn	1
219 Benzyl Methyl Ketone	C ₉ H ₁₀ O	103-79-7	NB	NB ppn	1
220 Carvone	C ₁₀ H ₁₄ O	2244-16-8	NB	NB ppn	1
221 Cyclohexanone (Cyclohexyl ketone)	C ₆ H ₁₀ O	108-94-1	100	500 ppn	1
222 Cyclopentanone	C₅H ₈ O	120-92-3	NB	NB ppn	1
223 Diethyl ketone (DEK; 3-Pentanone)	C ₅ H ₁₀ O	96-22-0	200	1000 ppn	
224 Diketene (4-methylideneoxetan-2-one, γ-methylenebutyrolactone)	C ₄ H ₄ O ₂	674-82-8	NB	NB ppn	
225 Isophorone (3,5,5-Trimethyl-2-cyclohexene-1-one, Isoforone, Isoacete		78-59-1	NB	NB ppn	
226 Menthone	C ₁₀ H ₁₈ O	3391-87-5	NB	NB ppn	
227 Methyl butyl ketone (MBK; 2-Hexanone)	C ₆ H ₁₂ O	591-78-6	200	1000 ppn	1
228 Methyl ethyl ketone (MEK, 2-butanone)	C ₄ H ₈ O	78-93-3	200	1000 ppn	1
229 Methyl isobutyl ketone (MIBK; 4-Methyl-2-pentanone)	C ₆ H ₁₂ O	108-10-1	200	1000 ppn	1
230 Methyl pentyl ketone (2-Heptanone)	C ₇ H ₁₄ O	110-43-0	200	1000 ppn	1
231 Methyl propyl ketone (2-Pentanone)	C5H10	107-87-9	200	1000 ppn	
232 Methyl vinyl ketone (3-Buten-2-one)	C ₄ H ₆ O	78-94-4	NB	NB ppn	
Alcohols	04.160	,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	115	no pp.	
	C H O	24083-03-2	NB	ND non	
233 1-(2-Butoxypropoxy)propan-2-ol	C ₁₀ H ₂₂ O ₃			NB ppn	
234 1,2-Propanediol (propylene glycol)	C ₃ H ₈ O ₂	57-55-6	200	1000 ppn	
235 1,3-Butanediol	C ₄ H ₁₀ O ₂	107-88-0	200	1000 ppn	1
236 1,4-Butanediol (1,4-Dihydroxybutane)	C ₄ H ₁₀ O ₂	110-63-4	NB	NB ppn	1
237 1-Butanol	C ₄ H ₁₀ O	71-36-3	200	1000 ppn	1
238 1-Butoxy-2-propanol (1,2-Propylene glycol 1-monobutyl ether)	C7H16O2	5131-66-8	200	1000 ppn	1
239 1-Ethoxy-2-propanol	C ₅ H ₁₂ O ₂	1569-02-4	NB	NB ppn	
240 1-Heptanol	C ₇ H ₁₆ O	111-70-6	NB	NB ppn	
240 T-Heptanol		111-27-3	NB		
	C ₆ H ₁₄ O				
242 1-Pentanol (Amyl alcohol)	C ₅ H ₁₂ O	71-41-0	200	1000 ppn	
243 1-Propanol	C ₃ H ₈ O	71-23-8	200	1000 ppn	1
244 1-Propoxy-2-propanol (Propylene glycol <i>n</i> -propyl ether)	C ₆ H ₁₄ O ₂	1569-01-3	100	500 ppn	1
245 2-Butanol (sec-Butyl alcohol)	C ₄ H ₁₀ O	78-92-2	200	1000 ppn	1
246 2-Ethoxyethanol (Cellosolve)	C ₄ H ₁₀ O ₂	110-80-5	100	500 ppn	1
247 2-Ethylhexanol (2-EH; 2-Ethylhexan-1-ol)	C ₈ H ₁₈ O	104-76-7	NB	NB ppn	
248 2-Methoxyethanol (methyl cellosolve)	C ₃ H ₈ O ₂	109-86-4	100	500 ppn	
249 2-Methoxy-1-propanol (2-methoxypropanol)	C ₄ H ₁₀ O ₂	1589-47-5	NB	NB ppn	
250 2-Methyl-1-butanol	C ₅ H ₁₂ O	137-32-6	NB	NB ppn	
251 2-Methyl-2-butanol	C ₅ H ₁₂ O	75-85-4	NB	NB ppn	1
252 4-Methoxy-1-butanol (Butylene glycol methyl ether)	$C_5H_{12}O_2$	111-32-0	NB	NB ppn	1
253 4-Methyl-2-pentanol	C ₆ H ₁₄ O	108-11-2	NB	NB ppn	1
254 Allylalcohol	C₃H ₆ O	107-18-6	NB	NB ppn	1
255 Benzylalcohol	C7H80	100-51-6	200	1000 ppn	
256 cis-3-Hexen-1-ol (leaf alcohol)	C ₆ H ₁₂ O	928-96-1	NB	NB ppn	
257 Cyclohexanol	C ₆ H ₁₂ O	108-93-0	NB		
-					
258 Diethylene glycol (DEG)	C ₄ H ₁₀ O ₃	111-46-6	NB	NB ppn	
259 Diethylene glycol monoethyl ether acetate	C ₈ H ₁₆ O ₄	112-15-2	100	500 ppn	1
260 Diethylene glycol monomethyl ether (MDGE, 2-(2-Methoxyethoxy)eth	C ₅ H ₁₂ O ₃	111-77-3	NB	NB ppn	1
261 Ethanol	C ₂ H ₆ O	64-17-5	500	2000 ppn	1
262 Ethylene glycol (1,2-Ethanediol)	C2H6O2	107-21-1	200	1000 ppn	1
263 Furfuryl alcohol (2-Furan methanol)	C5H6O2	98-00-0	200	1000 ppn	1
264 Glycerol (1,2,3-Propanetriol)	C ₃ H ₈ O ₃	56-81-5	NB	NB ppn	
265 Isobutanol (2-Methyl-1-propanol)	C ₄ H ₁₀ O	78-83-1	200		
266 Isoeugenol (2-Methoxy-4-propenylphenol)	C ₁₀ H ₁₂ O ₂	97-54-1	NB	NB ppn	
267 Isopentyl alcohol (Isoamyl alcohol; Isopentanol; 3-Methyl-1-butanol)	C ₅ H ₁₂ O	123-51-3	200	1000 ppn	
268 Isopropanol (2-Propanol; Isopropyl alcohol)	C ₃ H ₈ O	67-63-0	200	1000 ppn	1
269 Linalool (3,7-Dimethyl-1,6-octadien-3-ol)	C ₁₀ H ₁₈ O	78-70-6	NB	NB ppn	1
270 m-Cresol (3-Methyl phenol)	C7H80	108-39-4	200	1000 ppn	1
271 Menthol (2-Isopropyl-5-methylcyclohexanol, Hexahydrothymol)	C ₁₀ H ₂₀ O	1490-04-6	NB	NB ppn	
271 Menthol (2-Isopropyl-5-methylcyclohexanol, Hexahydrothymol) 272 Methanol					
272 Methanol	CH ₄ O	67-56-1	500	2000 ppn	1
272 Methanol 273 o-Cresol (2-Methyl phenol)	CH ₄ 0 C ₇ H ₈ 0	67-56-1 95-48-7	500 200	2000 ppn 1000 ppn	1
272 Methanol 273 o-Cresol (2-Methyl phenol) 274 p-Cresol (4-Methyl phenol)	CH ₄ O C ₇ H ₈ O C ₇ H ₈ O	67-56-1 95-48-7 106-44-5	500 200 200	2000 ppn 1000 ppn 1000 ppn	1 1 1
 272 Methanol 273 o-Cresol (2-Methyl phenol) 274 p-Cresol (4-Methyl phenol) 275 Phenol 	CH₄O C7H8O C7H8O C6H6O	67-56-1 95-48-7 106-44-5 108-95-2	500 200 200 200	2000 ppn 1000 ppn 1000 ppn 1000 ppn	
 272 Methanol 273 o-Cresol (2-Methyl phenol) 274 p-Cresol (4-Methyl phenol) 275 Phenol 276 Pinacolyl alcohol (3,3-Dimethyl-2-butanol) 	CH ₄ O C ₇ H ₈ O C ₇ H ₈ O C ₆ H ₆ O C ₆ H ₁₄ O	67-56-1 95-48-7 106-44-5 108-95-2 464-07-3	500 200 200 200 200	2000 ppn 1000 ppn 1000 ppn 1000 ppn 1000 ppn	
 272 Methanol 273 o-Cresol (2-Methyl phenol) 274 p-Cresol (4-Methyl phenol) 275 Phenol 276 Pinacolyl alcohol (3,3-Dimethyl-2-butanol) 277 Propargyl alcohol 	CH_4O C_7H_8O C_7H_8O C_6H_6O $C_6H_{14}O$ C_3H_4O	67-56-1 95-48-7 106-44-5 108-95-2 464-07-3 107-19-7	500 200 200 200 200 200 NB	2000 ppn 1000 ppn 1000 ppn 1000 ppn	
 272 Methanol 273 o-Cresol (2-Methyl phenol) 274 p-Cresol (4-Methyl phenol) 275 Phenol 276 Pinacolyl alcohol (3,3-Dimethyl-2-butanol) 	CH ₄ O C ₇ H ₈ O C ₇ H ₈ O C ₆ H ₆ O C ₆ H ₁₄ O	67-56-1 95-48-7 106-44-5 108-95-2 464-07-3	500 200 200 200 200	2000 ppn 1000 ppn 1000 ppn 1000 ppn 1000 ppn	
 272 Methanol 273 o-Cresol (2-Methyl phenol) 274 p-Cresol (4-Methyl phenol) 275 Phenol 276 Pinacolyl alcohol (3,3-Dimethyl-2-butanol) 277 Propargyl alcohol 	CH_4O C_7H_8O C_7H_8O C_6H_6O $C_6H_{14}O$ C_3H_4O	67-56-1 95-48-7 106-44-5 108-95-2 464-07-3 107-19-7	500 200 200 200 200 200 NB	2000 ppn 1000 ppn 1000 ppn 1000 ppn 1000 ppn NB ppn	
 272 Methanol 273 o-Cresol (2-Methyl phenol) 274 p-Cresol (4-Methyl phenol) 275 Phenol 276 Pinacolyl alcohol (3,3-Dimethyl-2-butanol) 277 Propargyl alcohol 278 t-Butanol (1,1-Dimethyl ethanol) 	CH_4O C_7H_8O C_7H_8O C_6H_6O $C_6H_{14}O$ C_3H_4O $C_4H_{10}O$ $C_4H_{10}O$ $C_{10}H_{18}O$	67-56-1 95-48-7 106-44-5 108-95-2 464-07-3 107-19-7 75-65-0	500 200 200 200 200 NB 200	2000 ppn 1000 ppn	
 272 Methanol 273 o-Cresol (2-Methyl phenol) 274 p-Cresol (4-Methyl phenol) 275 Phenol 276 Pinacolyl alcohol (3,3-Dimethyl-2-butanol) 277 Propargyl alcohol 278 t-Butanol (1,1-Dimethyl ethanol) 279 Terpinen-4-ol [4-Methyl-1-(1-methylethyl)-3-cyclohexen-1-ol] 280 Terpineol 	CH_4O C_7H_8O C_7H_8O C_6H_6O $C_6H_{14}O$ C_3H_4O C_3H_4O $C_4H_{10}O$ $C_{10}H_{18}O$ $C_{10}H_{18}O$	67-56-1 95-48-7 106-44-5 108-95-2 464-07-3 107-19-7 75-65-0 562-74-3 8000-41-7	500 200 200 200 200 NB 200 200 200	2000 ppn 1000 ppn 1000 ppn 1000 ppn 1000 ppn NB ppn 1000 ppn 1000 ppn	
 272 Methanol 273 o-Cresol (2-Methyl phenol) 274 p-Cresol (4-Methyl phenol) 275 Phenol 276 Pinacolyl alcohol (3,3-Dimethyl-2-butanol) 277 Propargyl alcohol 278 t-Butanol (1,1-Dimethyl ethanol) 279 Terpinen-4-ol [4-Methyl-1-(1-methylethyl)-3-cyclohexen-1-ol] 280 Terpineol 281 Triethylene glycol (TEG) 	CH_4O C_7H_8O C_7H_8O C_6H_6O $C_6H_{14}O$ C_3H_4O $C_4H_{10}O$ $C_4H_{10}O$ $C_{10}H_{18}O$	67-56-1 95-48-7 106-44-5 108-95-2 464-07-3 107-19-7 75-65-0 562-74-3	500 200 200 200 200 NB 200 200	2000 ppn 1000 ppn	
272 Methanol 273 o-Cresol (2-Methyl phenol) 274 p-Cresol (4-Methyl phenol) 275 Phenol 275 Phenol 276 Pinacolyl alcohol (3,3-Dimethyl-2-butanol) 277 Propargyl alcohol 278 t-Butanol (1,1-Dimethyl ethanol) 279 Terpinen-4-ol [4-Methyl-1-(1-methylethyl)-3-cyclohexen-1-ol] 280 Terpineol 281 Triethylene glycol (TEG) Ethers	$\begin{array}{c} {\rm CH_4O} \\ {\rm C7}{\rm H_8O} \\ {\rm C7}{\rm H_8O} \\ {\rm C_7H_8O} \\ {\rm C_6H_4O} \\ {\rm C_6H_{14}O} \\ {\rm C_3H_4O} \\ {\rm C_4H_{10}O} \\ {\rm C_{10}H_{13}O} \\ {\rm C_{10}H_{13}O} \\ {\rm C_{10}H_{13}O} \\ {\rm C_{6}H_{14}O_4} \end{array}$	67-56-1 95-48-7 106-44-5 108-95-2 464-07-3 107-19-7 75-65-0 562-74-3 8000-41-7 112-27-6	500 200 200 200 200 NB 200 200 200 200 NB	2000 ppn 1000 ppn 1000 ppn 1000 ppn 1000 ppn 1000 ppn 1000 ppn 1000 ppn 1000 ppn	n n n n Calibration for heated analyzer only.
 272 Methanol 273 o-Cresol (2-Methyl phenol) 274 p-Cresol (4-Methyl phenol) 275 Phenol 276 Pinacolyl alcohol (3,3-Dimethyl-2-butanol) 277 Propargyl alcohol 278 t-Butanol (1,1-Dimethyl ethanol) 279 Terpinen-4-ol [4-Methyl-1-(1-methylethyl)-3-cyclohexen-1-ol] 280 Terpineol 281 Triethylene glycol (TEG) Ethers 282 1,2-Dimethoxyethane (Ethylene glycol dimethyl ether) 	$\begin{array}{c} {\rm CH_4O} \\ {\rm C7}{\rm H_8O} \\ {\rm C7}{\rm H_8O} \\ {\rm C_7H_8O} \\ {\rm C_6H_4O} \\ {\rm C_6H_1AO} \\ {\rm C_6H_1AO} \\ {\rm C_4H_1O} \\ {\rm C_4H_1O} \\ {\rm C_{10}H_{18}O} \\ {\rm C_{10}H_{18}O} \\ {\rm C_{6}H_{14}O_4} \end{array}$	67-56-1 95-48-7 106-44-5 108-95-2 464-07-3 107-19-7 75-65-0 562-74-3 8000-41-7 112-27-6 112-27-6	500 200 200 200 NB 200 200 200 200 200 NB	2000 ppn 1000 ppn 1000 ppn 1000 ppn 1000 ppn 1000 ppn 1000 ppn 1000 ppn NB ppn 8 ppn NB ppn	n n n Calibration for heated analyzer only.
 272 Methanol 273 o-Cresol (2-Methyl phenol) 274 p-Cresol (4-Methyl phenol) 275 Phenol 276 Pinacolyl alcohol (3,3-Dimethyl-2-butanol) 277 Propargyl alcohol 278 t-Butanol (1,1-Dimethyl ethanol) 279 Terpinen-4-ol [4-Methyl-1-(1-methylethyl)-3-cyclohexen-1-ol] 280 Terpineol 281 Triethylene glycol (TEG) Ethers 282 1,2-Dimethoxyethane (Ethylene glycol dimethyl ether) 283 1,3-Dimethoxy-2-hydroxybenzene (Syringol) 	$\begin{array}{c} {\rm CH}_4{\rm O} \\ {\rm C}_7{\rm H}_8{\rm O} \\ {\rm C}_7{\rm H}_8{\rm O} \\ {\rm C}_7{\rm H}_8{\rm O} \\ {\rm C}_6{\rm H}_4{\rm O} \\ {\rm C}_6{\rm H}_1{\rm A}{\rm O} \\ {\rm C}_3{\rm H}_4{\rm O} \\ {\rm C}_1{\rm O}{\rm H}_1{\rm B}{\rm O} \\ {\rm C}_1{\rm O}{\rm H}_1{\rm B}{\rm O} \\ {\rm C}_1{\rm O}{\rm H}_1{\rm B}{\rm O} \\ {\rm C}_6{\rm H}_1{\rm A}{\rm O}_4 \\ {\rm C}_8{\rm H}_1{\rm O}{\rm O}_3 \end{array}$	67-56-1 95-48-7 106-44-5 108-95-2 464-07-3 107-19-7 75-65-0 562-74-3 8000-41-7 102-27-6 110-71-4 91-10-1	500 200 200 200 NB 200 200 200 200 NB	2000 ppn 1000 ppn 1000 ppn 1000 ppn 1000 ppn 1000 ppn 1000 ppn 1000 ppn 1000 ppn NB ppn NB ppn NB ppn	Calibration for heated analyzer only.
 272 Methanol 273 o-Cresol (2-Methyl phenol) 274 p-Cresol (4-Methyl phenol) 275 Phenol 276 Pinacolyl alcohol (3,3-Dimethyl-2-butanol) 277 Propargyl alcohol 278 t-Butanol (1,1-Dimethyl ethanol) 279 Terpinen-4-ol [4-Methyl-1-(1-methylethyl)-3-cyclohexen-1-ol] 280 Terpineol 281 Triethylene glycol (TEG) 282 1,2-Dimethoxy-tehane (Ethylene glycol dimethyl ether) 283 1,3-Dimethoxy-2-hydroxybenzene (Syringol) 284 1,3-Dioxane (trimethylene glycol methylene ether) 	$\begin{array}{c} {\rm CH}_4{\rm O} \\ {\rm C}_7{\rm H}_8{\rm O} \\ {\rm C}_7{\rm H}_8{\rm O} \\ {\rm C}_7{\rm H}_8{\rm O} \\ {\rm C}_6{\rm H}_4{\rm O} \\ {\rm C}_6{\rm H}_4{\rm O} \\ {\rm C}_3{\rm H}_4{\rm O} \\ {\rm C}_4{\rm H}_{10}{\rm O} \\ {\rm C}_1{\rm O}{\rm H}_1{\rm B}{\rm O} \\ {\rm C}_{10}{\rm H}_{18}{\rm O} \\ {\rm C}_{10}{\rm H}_{18}{\rm O} \\ {\rm C}_{6}{\rm H}_{14}{\rm O}_4 \\ \\ {\rm C}_8{\rm H}_{10}{\rm O}_2 \\ {\rm C}_8{\rm H}_{10}{\rm O}_3 \\ {\rm C}_4{\rm H}_8{\rm O}_2 \end{array}$	67-56-1 95-48-7 106-44-5 108-95-2 464-07-3 107-19-7 75-65-0 562-74-3 8000-41-7 112-27-6 110-71-4 91-10-1 505-22-6	500 200 200 200 NB 200 200 200 200 NB 100 NB NB	2000 ppn 1000 ppn 1000 ppn 1000 ppn 1000 ppn 1000 ppn 1000 ppn 1000 ppn NB ppn NB ppn NB ppn NB ppn	Calibration for heated analyzer only.
 272 Methanol 273 o-Cresol (2-Methyl phenol) 274 p-Cresol (4-Methyl phenol) 275 Phenol 276 Phenol 276 Pinacolyl alcohol (3,3-Dimethyl-2-butanol) 277 Propargyl alcohol 278 t-Butanol (1,1-Dimethyl ethanol) 279 Terpinen-4-ol [4-Methyl-1-(1-methylethyl)-3-cyclohexen-1-ol] 280 Terpineol 281 Triethylene glycol (TEG) 282 1,2-Dimethoxy-thane (Ethylene glycol dimethyl ether) 283 1,3-Dioxalne (trimethylene glycol methylene ether) 285 1,3-Dioxalne (1,3-Dioxacyclopentane) 	$\begin{array}{c} {\rm CH}_4{\rm O} \\ {\rm C}_7{\rm H}_8{\rm O} \\ {\rm C}_7{\rm H}_8{\rm O} \\ {\rm C}_7{\rm H}_8{\rm O} \\ {\rm C}_6{\rm H}_4{\rm O} \\ {\rm C}_6{\rm H}_1{\rm A}{\rm O} \\ {\rm C}_3{\rm H}_4{\rm O} \\ {\rm C}_1{\rm O}{\rm H}_1{\rm B}{\rm O} \\ {\rm C}_1{\rm O}{\rm H}_1{\rm B}{\rm O} \\ {\rm C}_1{\rm O}{\rm H}_1{\rm B}{\rm O} \\ {\rm C}_6{\rm H}_1{\rm A}{\rm O}_4 \\ {\rm C}_8{\rm H}_1{\rm O}{\rm O}_3 \end{array}$	67-56-1 95-48-7 106-44-5 108-95-2 464-07-3 107-19-7 75-65-0 562-74-3 8000-41-7 112-27-6 110-71-4 91-10-1 505-22-6 646-06-0	500 200 200 200 NB 200 200 200 200 200 NB 000 NB NB NB	2000 ppn 1000 ppn 1000 ppn 1000 ppn 1000 ppn 1000 ppn 1000 ppn 1000 ppn 1000 ppn NB ppn NB ppn NB ppn	Calibration for heated analyzer only.
 272 Methanol 273 o-Cresol (2-Methyl phenol) 274 p-Cresol (4-Methyl phenol) 275 Phenol 276 Pinacolyl alcohol (3,3-Dimethyl-2-butanol) 277 Propargyl alcohol 278 t-Butanol (1,1-Dimethyl ethanol) 279 Terpinen-4-ol [4-Methyl-1-(1-methylethyl)-3-cyclohexen-1-ol] 280 Terpineol 281 Triethylene glycol (TEG) Ethers 282 1,2-Dimethoxy-thane (Ethylene glycol dimethyl ether) 283 1,3-Dimethoxy-2-hydroxybenzene (Syringol) 284 1,3-Dioxane (trimethylene glycol methylene ether) 	$\begin{array}{c} {\rm CH}_4{\rm O} \\ {\rm C}_7{\rm H}_8{\rm O} \\ {\rm C}_7{\rm H}_8{\rm O} \\ {\rm C}_7{\rm H}_8{\rm O} \\ {\rm C}_6{\rm H}_4{\rm O} \\ {\rm C}_6{\rm H}_4{\rm O} \\ {\rm C}_3{\rm H}_4{\rm O} \\ {\rm C}_4{\rm H}_{10}{\rm O} \\ {\rm C}_1{\rm O}{\rm H}_1{\rm B}{\rm O} \\ {\rm C}_{10}{\rm H}_{18}{\rm O} \\ {\rm C}_{10}{\rm H}_{18}{\rm O} \\ {\rm C}_{6}{\rm H}_{14}{\rm O}_4 \\ \\ {\rm C}_8{\rm H}_{10}{\rm O}_2 \\ {\rm C}_8{\rm H}_{10}{\rm O}_3 \\ {\rm C}_4{\rm H}_8{\rm O}_2 \end{array}$	67-56-1 95-48-7 106-44-5 108-95-2 464-07-3 107-19-7 75-65-0 562-74-3 8000-41-7 112-27-6 110-71-4 91-10-1 505-22-6	500 200 200 200 NB 200 200 200 200 NB 100 NB NB	2000 ppn 1000 ppn 1000 ppn 1000 ppn 1000 ppn 1000 ppn 1000 ppn 1000 ppn NB ppn NB ppn NB ppn NB ppn	Calibration for heated analyzer only.
 272 Methanol 273 o-Cresol (2-Methyl phenol) 274 p-Cresol (4-Methyl phenol) 275 Phenol 276 Pinacolyl alcohol (3,3-Dimethyl-2-butanol) 277 Propargyl alcohol 278 t-Butanol (1,1-Dimethyl ethanol) 279 Terpinen-4-ol [4-Methyl-1-(1-methylethyl)-3-cyclohexen-1-ol] 280 Terpineol 281 Triethylene glycol (TEG) Ethers 282 1,2-Dimethoxy-2-hydroxybenzene (Syringol) 284 1,3-Dioxalne (trimethylene glycol methyle ether) 285 1,3-Dioxolane (1,3-Dioxacyclopentane) 	$\begin{array}{c} {\rm CH}_4{\rm O} \\ {\rm C}_7{\rm H}_8{\rm O} \\ {\rm C}_7{\rm H}_8{\rm O} \\ {\rm C}_7{\rm H}_8{\rm O} \\ {\rm C}_6{\rm H}_4{\rm O} \\ {\rm C}_6{\rm H}_1{\rm A}{\rm O} \\ {\rm C}_3{\rm H}_4{\rm O} \\ {\rm C}_3{\rm H}_4{\rm O} \\ {\rm C}_{10}{\rm H}_{18}{\rm O} \\ {\rm C}_{10}{\rm H}_{18}{\rm O} \\ {\rm C}_6{\rm H}_{14}{\rm O}_4 \\ \end{array}$	67-56-1 95-48-7 106-44-5 108-95-2 464-07-3 107-19-7 75-65-0 562-74-3 8000-41-7 112-27-6 110-71-4 91-10-1 505-22-6 646-06-0	500 200 200 200 NB 200 200 200 200 200 NB 00 NB NB NB	2000 ppn 1000 ppn 1000 ppn 1000 ppn 1000 ppn NB ppn 1000 ppn 1000 ppn 1000 ppn 1000 ppn 1000 ppn NB ppn NB ppn NB ppn NB ppn	Calibration for heated analyzer only.
 272 Methanol 273 o-Cresol (2-Methyl phenol) 274 p-Cresol (4-Methyl phenol) 275 Phenol 276 Pinacolyl alcohol (3,3-Dimethyl-2-butanol) 277 Propargyl alcohol 278 t-Butanol (1,1-Dimethyl ethanol) 279 Terpinen-4-ol [4-Methyl-1-(1-methylethyl)-3-cyclohexen-1-ol] 280 Terpineol 281 Triethylene glycol (TEG) 282 1,2-Dimethoxyethane (Ethylene glycol dimethyl ether) 283 1,3-Dioxane (trimethylene glycol methyle ether) 284 1,3-Dioxane (trimethylene glycol methylene ether) 285 1,3-Dioxane (1,3-Dioxacyclopentane) 286 1,4-Butanediol vinyl ether 	$\begin{array}{c} {\rm CH_4O} \\ {\rm C7}_{\rm H_8O} \\ {\rm C7}_{\rm H_8O} \\ {\rm C7}_{\rm H_8O} \\ {\rm C6}_{\rm H_4O} \\ {\rm C6}_{\rm H_1AO} \\ {\rm C3}_{\rm H_4O} \\ {\rm C1}_{\rm 0H_{18}O} \\ {\rm C1}_{\rm 0H_{18}O} \\ {\rm C1}_{\rm 0H_{18}O} \\ {\rm C6}_{\rm H_{14}O_4} \\ \end{array}$	67-56-1 95-48-7 106-44-5 108-95-2 464-07-3 107-19-7 75-65-0 562-74-3 8000-41-7 112-27-6 110-71-4 91-10-1 505-22-6 646-06-0 17832-28-9	500 200 200 200 NB 200 200 200 200 NB 100 NB NB NB NB NB	2000 ppn 1000 ppn 1000 ppn 1000 ppn NB ppn 1000 ppn 1000 ppn 1000 ppn 1000 ppn 1000 ppn NB ppn NB ppn NB ppn NB ppn NB ppn NB ppn	Calibration for heated analyzer only.
 272 Methanol 273 o-Cresol (2-Methyl phenol) 274 p-Cresol (4-Methyl phenol) 275 Phenol 276 Phenol 276 Phenol 277 Propargyl alcohol (3,3-Dimethyl-2-butanol) 278 t-Butanol (1,1-Dimethyl ethanol) 279 Terpinen-4-ol [4-Methyl-1-(1-methylethyl)-3-cyclohexen-1-ol] 280 Terpineol 281 Triethylene glycol (TEG) 282 1,2-Dimethoxy-2-hydroxybenzene (Syringol) 284 1,3-Dioxalne (1,3-Dioxacyclopentane) 285 1,3-Dioxolane (1,3-Dioxacyclopentane) 286 1,4-Butanediol vinyl ether 287 2,2-Dimethoxypropane 	$\begin{array}{c} {\rm CH}_4{\rm O} \\ {\rm C}_7{\rm H}_8{\rm O} \\ {\rm C}_6{\rm H}_1{\rm O} \\ {\rm C}_3{\rm H}_4{\rm O} \\ {\rm C}_3{\rm H}_4{\rm O} \\ {\rm C}_1{\rm O}{\rm H}_{18}{\rm O} \\ {\rm C}_1{\rm O}{\rm H}_{18}{\rm O} \\ {\rm C}_6{\rm H}_{16}{\rm O}_4 \\ \\ {\rm C}_6{\rm H}_{16}{\rm O}_2 \\ {\rm C}_8{\rm H}_{10}{\rm O}_3 \\ {\rm C}_4{\rm H}_8{\rm O}_2 \\ {\rm C}_8{\rm H}_6{\rm O}_2 \\ {\rm C}_8{\rm H}_6{\rm O}_2 \\ {\rm C}_6{\rm H}_{12}{\rm O}_2 \\ {\rm C}_6{\rm H}_{12}{\rm O}_2 \\ {\rm C}_6{\rm H}_{12}{\rm O}_2 \\ \\ {\rm C}_8{\rm H}_{12}{\rm O}_2 \\ \\ {\rm C}_8{\rm H}_{12}{\rm O}_2 \\ \end{array}$	67-56-1 95-48-7 106-44-5 108-95-2 464-07-3 107-19-7 75-65-0 562-74-3 8000-41-7 112-27-6 110-71-4 91-10-1 505-22-6 646-06-0 177832-28-9 77-76-9	500 200 200 200 200 200 200 200 200 200	2000 ppn 1000 ppn	Calibration for heated analyzer only.

290 Butyl methyl ether	C ₅ H ₁₂ O	628-28-4	NB	NB	ppm	
291 Di(ethylene glycol) ethyl ether (2-(2-Ethoxyethoxy)ethanol	C ₆ H ₁₄ O ₃	111-90-0	NB	NB	ppm	
292 Dibutyl ether	C ₈ H ₁₈ O	142-96-1	NB	NB		
-					ppm	
293 Diethyl ether (Ethoxy ethane)	C ₄ H ₁₀ O	60-29-7	100	500	ppm	
294 Diethylene glycol butyl ether [2-(2-Butoxyethoxy)ethanol]	C ₈ H ₁₈ O ₃	112-34-5	100	500	ppm	Calibration for heated analyzer only.
295 Diethylene glycol dimethyl ether (Diglyme)	C ₆ H ₁₄ O ₃	111-96-6	NB	NB	ppm	
296 Diisopropyl ether	C ₆ H ₁₄ O	108-20-3	100	500	ppm	
	C ₃ H ₈ O ₂	109-87-5	100	500		
297 Dimethoxymethane (Methylene dimethyl ether; Methylal)					ppm	
298 Diphenyl ether	C ₁₂ H ₁₀ O	101-84-8	NB	NB	ppm	
299 Dipropylene glycol dimethyl ether	C ₈ H ₁₈ O ₃	89399-28-0	NB	NB	ppm	
300 Dipropylene glycol monomethyl ether	C ₇ H ₁₆ O ₃	34590-94-8	NB	NB	ppm	
301 Ethyl tert-butyl ether (ETBE; 2-Ethoxy-2-methyl-propane)	C ₆ H ₁₄ O	637-92-3	NB	NB	ppm	
302 Ethyl vinyl ether	C₄H ₈ O	109-92-2	100	500	ppm	
303 Ethylene glycol monobutyl ether (2-Butoxyethanol)	C ₆ H ₁₄ O ₂	111-76-2	100	500	ppm	
304 Ethylene glycol monoisopropyl ether (2-Isopropoxyethanol)	C ₅ H ₁₂ O ₂	109-59-1	NB	NB	ppm	
305 Eucalyptol (1,8-Cineole; 1,8-Epoxy-p-menthane; 1,3,3-Trimethyl-2-oxa	ł C10H10	470-82-6	NB	NB	ppm	
306 Isosafrole	C ₁₀ H ₁₀ O ₂	120-58-1	NB	NB	ppm	
307 Methyl ether (Dimethyl ether)	C ₂ H ₆ O	115-10-6	NB	NB	ppm	
308 Methyl salicylate (2-Hydroxybenzoic acid methyl ester)	C ₈ H ₈ O ₃	119-36-8	100	500	ppm	
309 Methyl tert-butyl ether (MTBE; 2-Methoxy-2-methyl propane)	C ₅ H ₁₂ O	1634-04-4	100	500	ppm	
310 p-Dioxane (Glycol ethylene ether; 1,4-Dioxane)	C ₄ H ₈ O ₂	123-91-1	100	500	ppm	
311 Tert-amyl methyl ether (TAME; 2-methoxy-2-methylbutane)	C ₆ H ₁₄ O	994-05-8	NB	NB	ppm	
312 α-Propylene glycol monomethyl ether (1-Methoxy-2-propanol)	C ₄ H ₁₀ O ₂	107-98-2	100	500	ppm	
Epoxy compounds						
313 2,5-Dimethylfuran	C ₆ H ₈ O	625-86-5	NB	NB	ppm	
314 2-Methylfuran	C ₅ H ₆ O	534-22-5	NB	NB	ppm	
-		75-21-8	NB	NB		
315 Ethylene oxide (Oxirane; Epoxyethane)	C ₂ H ₄ O				ppm	
316 Furan (Furfuran)	C ₄ H ₄ O	110-00-9	200	1000	ppm	
317 Maleic anhydride	$C_4H_2O_3$	108-31-6	NB	NB	ppm	
318 Propylene oxide (Methyl oxirane; Epoxypropane)	C ₃ H ₆ O	75-56-9	200	1000	ppm	
319 Tetrahydrofuran (THF; 1,4-Epoxybutane)	C ₄ H ₈ O	109-99-9	200	1000	ppm	
Sulfur compounds	041180	105 55 5	200	1000	ppm	
		E40.60.6	ND	ND		
320 1,2-Ethanedithiol (1,2-Dimercaptoethane Dithioglycol Ethylene merc		540-63-6	NB	NB	ppm	
321 1-Butanethiol (Butyl mercaptan)	C ₄ H ₁₀ S	109-79-5	NB	NB	ppm	
322 2-Methylthiophene	C ₅ H ₆ S	554-14-3	NB	NB	ppm	
323 3-(Methylthio)propionaldehyde (3-Methylsulfanyl-propionaldehyde)	C ₄ H ₈ OS	3268-49-3	NB	NB	ppm	
324 3-Mercaptopropionic acid	C ₃ H ₆ O ₂ S	107-96-0	NB	NB		
					ppm	
325 Benzenethiol (Phenylthiol; Thiophenol)	C ₆ H ₆ S	108-98-5	NB	NB	ppm	
326 Carbon disulfide	CS ₂	75-15-0	50	200	ppm	
327 Carbonyl sulfide	COS	463-58-1	NB	NB	ppm	
328 Diethyl sulfate (Sulfuric acid diethyl ester)	C ₄ H ₁₀ O ₄ S	64-67-5	NB	NB		
					ppm	
329 Dimethyl disulfide (DMDS)	$C_2H_6S_2$	624-92-0	200	1000	ppm	
330 Dimethyl sulfate (DMSO4; Sulfuric acid dimethyl ester)	C ₂ H ₆ O ₄ S	77-78-1	NB	NB	ppm	
331 Dimethyl sulfide (DMS)	C ₂ H ₆ S	75-18-3	200	1000	ppm	
332 Dimethyl sulfoxide	C ₂ H ₆ OS	67-68-5	100	500	ppm	
333 Ethylmercaptan (Ethanethiol)	C ₂ H ₆ S	75-08-1	100	500	ppm	
334 Mercaptoacetic acid (Thioglycolic acid)	$C_2H_4O_2S$	68-11-1	NB	NB	ppm	
335 Methylmercaptan (Methanethiol)	CH₄S	74-93-1	NB	NB	ppm	
336 Tetrahydrothiophene (Tetramethylene sulfide)	C₄H ₈ S	110-01-0	NB	NB	ppm	
337 Thiophene (Thiacyclopentadiene)	C ₄ H ₄ S	110-02-1	NB	NB	ppm	
	-44	110.02-1			PP111	
Nitrogen compounds	0.11.11	5444.5	ND	10		
338 (-)-Nicotine	$C_{10}H_{14}N_2$	54-11-5	NB	NB	ppm	
339 1,1-Dimethylhydrazine (Dimazine)	$C_2H_8N_2$	57-14-7	NB	NB	ppm	
340 1-(2-Aminoethyl)piperazine	C ₆ H ₁₅ N ₃	140-31-8	NB	NB	ppm	
341 1,3-Dimethyl-2-imidazolidinone (N,N'-Dimethylethyleneurea)	C ₅ H ₁₀ N ₂ O	80-73-9	NB	NB	ppm	
342 1,4-Diaminobutane (Tetramethylenediamine, 1.4-Butanediamine)	C ₄ H ₁₂ N ₂	110-60-1	NB	NB		
					ppm	
343 1,6-Hexamethylene diisocyanate	C ₈ H ₁₂ N ₂ O ₂	822-06-0	NB	NB	ppm	
344 1-Formylpiperazine (1-Piperazinecarboxaldehyde)	$C_5H_{10}N_2O$	7755-92-2	NB	NB	ppm	
	C₅H₀NO	872-50-4	NB	NB	ppm	
345 1-Methyl-2-pyrrolidinone						
		616-47-7	NR	NR		
346 1-Methylimidazol	$C_4H_6N_2$	616-47-7	NB	NB	ppm	
346 1-Methylimidazol 347 1-Vinyl-2-pyrrolidinone (N-vinyl-2-pyrrolidinone)	$C_4H_6N_2$ C_6H_9NO	88-12-0	NB	NB	ppm	
346 1-Methylimidazol 347 1-Vinyl-2-pyrrolidinone (N-vinyl-2-pyrrolidinone) 348 2-(2-Aminoethoxy)ethanol (Diethylene glycol amine)	$C_4H_6N_2$					
346 1-Methylimidazol 347 1-Vinyl-2-pyrrolidinone (N-vinyl-2-pyrrolidinone)	$C_4H_6N_2$ C_6H_9NO	88-12-0	NB	NB	ppm	
 346 1-Methylimidazol 347 1-Vinyl-2-pyrrolidinone (N-vinyl-2-pyrrolidinone) 348 2-(2-Aminoethoxy)ethanol (Diethylene glycol amine) 349 2-(Ethylamino)ethanol (EMEA; N-Ethylethanolamine) 	$C_4H_6N_2$ C_6H_9NO $C_4H_{11}NO_2$ $C_4H_{11}NO$	88-12-0 929-06-6	NB NB NB	NB NB NB	ppm ppm ppm	
 346 1-Methylimidazol 347 1-Vinyl-2-pyrrolidinone (N-vinyl-2-pyrrolidinone) 348 2-(2-Aminoethoxy)ethanol (Diethylene glycol amine) 349 2-(Ethylamino)ethanol (EMEA; N-Ethylethanolamine) 350 2,3-Dimethylpyrazine 	$C_4H_6N_2$ C_6H_9NO $C_4H_{11}NO_2$ $C_4H_{11}NO$ $C_6H_8N_2$	88-12-0 929-06-6 110-73-6 5910-89-4	NB NB NB NB	NB NB NB NB	ppm ppm ppm ppm	
 346 1-Methylimidazol 347 1-Vinyl-2-pyrrolidinone (N-vinyl-2-pyrrolidinone) 348 2-(2-Aminoethoxy)ethanol (Diethylene glycol amine) 349 2-(Ethylamino)ethanol (EMEA; N-Ethylethanolamine) 350 2,3-Dimethylpyrazine 351 2,4,6-Trimethylpyridine 	$\begin{array}{l} C_{4}H_{6}N_{2} \\ C_{6}H_{9}NO \\ C_{4}H_{11}NO_{2} \\ C_{4}H_{11}NO \\ C_{6}H_{8}N_{2} \\ C_{8}H_{11}N \end{array}$	88-12-0 929-06-6 110-73-6 5910-89-4 108-75-8	NB NB NB NB	NB NB NB NB	ppm ppm ppm ppm ppm	
 346 1-Methylimidazol 347 1-Vinyl-2-pyrrolidinone (N-vinyl-2-pyrrolidinone) 348 2-(2-Aminoethoxy)ethanol (Diethylene glycol amine) 349 2-(Ethylamino)ethanol (EMEA; N-Ethylethanolamine) 350 2,3-Dimethylpyrazine 351 2,4,6-Trimethylpyridine 352 2,4-Toluene diisocyanate 	$\begin{array}{c} C_4 H_6 N_2 \\ C_6 H_9 NO \\ C_4 H_{11} NO_2 \\ C_4 H_{11} NO \\ C_6 H_8 N_2 \\ C_8 H_{11} N \\ C_9 H_6 N_2 O_2 \end{array}$	88-12-0 929-06-6 110-73-6 5910-89-4 108-75-8 584-84-9	NB NB NB NB NB	NB NB NB NB NB	ppm ppm ppm ppm ppm	
 346 1-Methylimidazol 347 1-Vinyl-2-pyrrolidinone (N-vinyl-2-pyrrolidinone) 348 2-(2-Aminoethoxy)ethanol (Diethylene glycol amine) 349 2-(Ethylamino)ethanol (EMEA; N-Ethylethanolamine) 350 2,3-Dimethylpyrazine 351 2,4,6-Trimethylpyridine 	$\begin{array}{l} C_{4}H_{6}N_{2} \\ C_{6}H_{9}NO \\ C_{4}H_{11}NO_{2} \\ C_{4}H_{11}NO \\ C_{6}H_{8}N_{2} \\ C_{8}H_{11}N \end{array}$	88-12-0 929-06-6 110-73-6 5910-89-4 108-75-8	NB NB NB NB	NB NB NB NB	ppm ppm ppm ppm ppm	
 346 1-Methylimidazol 347 1-Vinyl-2-pyrrolidinone (N-vinyl-2-pyrrolidinone) 348 2-(2-Aminoethoxy)ethanol (Diethylene glycol amine) 349 2-(Ethylamino)ethanol (EMEA; N-Ethylethanolamine) 350 2,3-Dimethylpyrazine 351 2,4,6-Trimethylpyridine 352 2,4-Toluene diisocyanate 	$\begin{array}{c} C_4 H_6 N_2 \\ C_6 H_9 NO \\ C_4 H_{11} NO_2 \\ C_4 H_{11} NO \\ C_6 H_8 N_2 \\ C_8 H_{11} N \\ C_9 H_6 N_2 O_2 \\ C_6 H_8 N_2 \end{array}$	88-12-0 929-06-6 110-73-6 5910-89-4 108-75-8 584-84-9	NB NB NB NB NB	NB NB NB NB NB	ppm ppm ppm ppm ppm ppm	
 346 1-Methylimidazol 347 1-Vinyl-2-pyrrolidinone (N-vinyl-2-pyrrolidinone) 348 2-(2-Aminoethoxy)ethanol (Diethylene glycol amine) 349 2-(Ethylamino)ethanol (EMEA; N-Ethylethanolamine) 350 2,3-Dimethylpyrazine 352 2,4-Toluene diisocyanate 353 2,5-Dimethylpyrazine 354 2,6-Diethylaniline 	$\begin{array}{c} C_4 H_6 N_2 \\ C_6 H_9 NO \\ C_4 H_{11} NO_2 \\ C_4 H_{11} NO \\ C_6 H_8 N_2 \\ C_8 H_{11} N \\ C_9 H_6 N_2 O_2 \\ C_6 H_8 N_2 \\ C_{10} H_{15} N \end{array}$	88-12-0 929-06-6 110-73-6 5910-89-4 108-75-8 584-84-9 123-32-0 579-66-8	NB NB NB NB NB NB NB	NB NB NB NB NB NB	ppm ppm ppm ppm ppm ppm ppm	
 346 1-Methylimidazol 347 1-Vinyl-2-pyrrolidinone (N-vinyl-2-pyrrolidinone) 348 2-(2-Aminoethoxy)ethanol (Diethylene glycol amine) 349 2-(Ethylamino)ethanol (EMEA; N-Ethylethanolamine) 350 2,3-Dimethylpyrazine 351 2,4,6-Trimethylpyridine 352 2,4-Toluene diisocyanate 353 2,5-Dimethylpyrazine 354 2,6-Diethylaniline 355 2,6-Dimethylpyrazine 	$\begin{array}{c} C_4 H_6 N_2 \\ C_6 H_9 NO \\ C_4 H_{11} NO_2 \\ C_4 H_{11} NO \\ C_6 H_8 N_2 \\ C_8 H_{11} N \\ C_9 H_6 N_2 O_2 \\ C_6 H_8 N_2 \\ C_{10} H_{15} N \\ C_6 H_8 N_2 \end{array}$	88-12-0 929-06-6 110-73-6 5910-89-4 108-75-8 584-84-9 123-32-0 579-66-8 108-50-9	NB NB NB NB NB NB NB NB	NB NB NB NB NB NB NB	ppm ppm ppm ppm ppm ppm ppm ppm	
 346 1-Methylimidazol 347 1-Vinyl-2-pyrrolidinone (N-vinyl-2-pyrrolidinone) 348 2-(2-Aminoethoxy)ethanol (Diethylene glycol amine) 349 2-(Ethylamino)ethanol (EMEA; N-Ethylethanolamine) 350 2,3-Dimethylpyrazine 351 2,4,6-Trimethylpyriatine 352 2,4-Toluene diisocyanate 353 2,5-Dimethylpyrazine 354 2,6-Diethylaniline 355 2,6-Dimethylpyrazine 356 2-Amino-1-butanol 	$\begin{array}{c} C_4 H_6 N_2 \\ C_6 H_9 NO \\ C_4 H_{11} NO_2 \\ C_4 H_{11} NO \\ C_6 H_8 N_2 \\ C_8 H_{11} N \\ C_9 H_6 N_2 O_2 \\ C_6 H_8 N_2 \\ C_{10} H_{15} N \\ C_6 H_8 N_2 \\ C_6 H_8 N_2 \\ C_4 H_{11} NO \end{array}$	88-12-0 929-06-6 110-73-6 5910-89-4 108-75-8 584-84-9 123-32-0 579-66-8 108-50-9 96-20-8	NB NB NB NB NB NB NB NB 200	NB NB NB NB NB NB NB 1000	ppm ppm ppm ppm ppm ppm ppm	
 346 1-Methylimidazol 347 1-Vinyl-2-pyrrolidinone (N-vinyl-2-pyrrolidinone) 348 2-(2-Aminoethoxy)ethanol (Diethylene glycol amine) 349 2-(Ethylamino)ethanol (EMEA; N-Ethylethanolamine) 350 2,3-Dimethylpyrazine 351 2,4,6-Trimethylpyridine 352 2,4-Toluene diisocyanate 353 2,5-Dimethylpyrazine 354 2,6-Diethylaniline 355 2,6-Dimethylpyrazine 	$\begin{array}{c} C_4 H_6 N_2 \\ C_6 H_9 NO \\ C_4 H_{11} NO_2 \\ C_4 H_{11} NO \\ C_6 H_8 N_2 \\ C_8 H_{11} N \\ C_9 H_6 N_2 O_2 \\ C_6 H_8 N_2 \\ C_{10} H_{15} N \\ C_6 H_8 N_2 \end{array}$	88-12-0 929-06-6 110-73-6 5910-89-4 108-75-8 584-84-9 123-32-0 579-66-8 108-50-9	NB NB NB NB NB NB NB NB	NB NB NB NB NB NB NB	ppm ppm ppm ppm ppm ppm ppm ppm	
 346 1-Methylimidazol 347 1-Vinyl-2-pyrrolidinone (N-vinyl-2-pyrrolidinone) 348 2-(2-Aminoethoxy)ethanol (Diethylene glycol amine) 349 2-(Ethylamino)ethanol (EMEA; N-Ethylethanolamine) 350 2,3-Dimethylpyrazine 351 2,4,6-Trimethylpyrazine 352 2,4-Toluene diisocyanate 353 2,5-Dimethylpyrazine 354 2,6-Diethylaniline 355 2,6-Dimethylpyrazine 356 2-Amino-1-butanol 357 2-Amino-2-methylpropanol (β-Aminoisobutyl alcohol, AMP) 	$\begin{array}{c} C_4 H_6 N_2 \\ C_6 H_9 NO \\ C_4 H_{11} NO_2 \\ C_4 H_{11} NO \\ C_6 H_8 N_2 \\ C_8 H_{11} N \\ C_9 H_6 N_2 O_2 \\ C_6 H_8 N_2 \\ C_1 O_{11} H_5 N \\ C_6 H_8 N_2 \\ C_4 H_{11} NO \\ C_4 H_{11} NO \\ C_4 H_{11} NO \end{array}$	88-12-0 929-06-6 110-73-6 5910-89-4 108-75-8 584-84-9 123-32-0 579-66-8 108-50-9 96-20-8 124-68-5	NB NB NB NB NB NB NB 200 NB	NB NB NB NB NB NB 1000 NB	ppm ppm ppm ppm ppm ppm ppm ppm ppm	
 346 1-Methylimidazol 347 1-Vinyl-2-pyrrolidinone (N-vinyl-2-pyrrolidinone) 348 2-(2-Aminoethoxy)ethanol (Diethylene glycol amine) 349 2-(Ethylamino)ethanol (EMEA; N-Ethylethanolamine) 350 2,3-Dimethylpyrazine 351 2,4-Foluene diisocyanate 352 2,4-Toluene diisocyanate 353 2,5-Dimethylpyrazine 354 2,6-Diethylaniline 355 2,6-Dimethylpyrazine 356 2-Amino-1-butanol 357 2-Amino-2-methylpropanol (β-Aminoisobutyl alcohol, AMP) 358 2-Dimethylaminoethanol (N,N-Dimethyl-2-hydroxyethylamine, N,N-Di 	$\begin{array}{c} C_4 H_6 N_2 \\ C_6 H_9 NO \\ C_4 H_{11} NO_2 \\ C_4 H_{11} NO \\ C_6 H_8 N_2 \\ C_8 H_{11} N \\ C_9 H_6 N_2 O_2 \\ C_6 H_8 N_2 \\ C_1 O H_{15} N \\ C_6 H_8 N_2 \\ C_4 H_{11} NO \\ C_4 H_{11} NO \\ C_4 H_{11} NO \\ n C_4 H_{11} NO \end{array}$	88-12-0 929-06-6 110-73-6 5910-89-4 108-75-8 584-84-9 123-32-0 579-66-8 108-50-9 96-20-8 124-68-5 108-01-0	NB NB NB NB NB NB 200 NB NB	NB NB NB NB NB NB 1000 NB NB	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	
 346 1-Methylimidazol 347 1-Vinyl-2-pyrrolidinone (N-vinyl-2-pyrrolidinone) 348 2-(2-Aminoethoxy)ethanol (Diethylene glycol amine) 349 2-(Ethylamino)ethanol (EMEA; N-Ethylethanolamine) 350 2,3-Dimethylpyrazine 351 2,4-Foluene diisocyanate 352 2,4-Toluene diisocyanate 353 2,5-Dimethylpyrazine 354 2,6-Diethylaniline 355 2,6-Dimethylpyrazine 356 2-Amino-1-butanol 357 2-Amino-2-methylpropanol (β-Aminoisobutyl alcohol, AMP) 358 2-Dimethylaminoethanol (N,N-Dimethyl-2-hydroxyethylamine, N,N-Di 359 2-Ethyl-6-methylaniline 	$\begin{array}{c} C_4 H_6 N_2 \\ C_6 H_9 NO \\ C_4 H_{11} NO_2 \\ C_4 H_{11} NO \\ C_6 H_8 N_2 \\ C_8 H_{11} N \\ C_9 H_6 N_2 O_2 \\ C_6 H_8 N_2 \\ C_{10} H_{15} N \\ C_6 H_8 N_2 \\ C_4 H_{11} NO \\ C_4 H_{11} NO \\ C_4 H_{11} NO \\ C_9 H_{13} N \end{array}$	88-12-0 929-06-6 110-73-6 5910-89-4 108-75-8 584-84-9 123-32-0 579-66-8 108-50-9 96-20-8 124-68-5 108-01-0 24549-06-2	NB NB NB NB NB NB 200 NB NB NB	NB NB NB NB NB NB 1000 NB NB NB	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	
 346 1-Methylimidazol 347 1-Vinyl-2-pyrrolidinone (N-vinyl-2-pyrrolidinone) 348 2-(2-Aminoethoxy)ethanol (Diethylene glycol amine) 349 2-(Ethylamino)ethanol (EMEA; N-Ethylethanolamine) 350 2,3-Dimethylpyrazine 351 2,4-Foluene diisocyanate 352 2,4-Toluene diisocyanate 353 2,5-Dimethylpyrazine 354 2,6-Diethylaniline 355 2,6-Dimethylpyrazine 356 2-Amino-1-butanol 357 2-Amino-2-methylpropanol (β-Aminoisobutyl alcohol, AMP) 358 2-Dimethylaminoethanol (N,N-Dimethyl-2-hydroxyethylamine, N,N-Di 359 2-Ethyl-6-methylaniline 360 2-Methylaminoethanol (N-Methylethanolamine) 	$\begin{array}{c} C_4 H_6 N_2 \\ C_6 H_9 NO \\ C_4 H_{11} NO_2 \\ C_4 H_{11} NO \\ C_4 H_{11} NO \\ C_6 H_8 N_2 \\ C_8 H_{11} N \\ C_9 H_6 N_2 O_2 \\ C_6 H_8 N_2 \\ C_{10} H_{15} N \\ C_6 H_8 N_2 \\ C_4 H_{11} NO \\ C_4 H_{11} NO \\ C_9 H_{13} N \\ C_5 H_3 NO \end{array}$	88-12-0 929-06-6 110-73-6 5910-89-4 108-75-8 584-84-9 123-32-0 579-66-8 108-50-9 96-20-8 124-68-5 108-01-0 24549-06-2 109-83-1	NB NB NB NB NB NB 200 NB NB NB NB NB	NB NB NB NB NB 1000 NB NB NB NB NB	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	
 346 1-Methylimidazol 347 1-Vinyl-2-pyrrolidinone (N-vinyl-2-pyrrolidinone) 348 2-(2-Aminoethoxy)ethanol (Diethylene glycol amine) 349 2-(Ethylamino)ethanol (EMEA; N-Ethylethanolamine) 350 2,3-Dimethylpyrazine 351 2,4-Foluene diisocyanate 352 2,4-Toluene diisocyanate 353 2,5-Dimethylpyrazine 354 2,6-Diethylaniline 355 2,6-Dimethylpyrazine 356 2-Amino-1-butanol 357 2-Amino-2-methylpropanol (β-Aminoisobutyl alcohol, AMP) 358 2-Dimethylaminoethanol (N,N-Dimethyl-2-hydroxyethylamine, N,N-Di 359 2-Ethyl-6-methylaniline 	$\begin{array}{c} C_4 H_6 N_2 \\ C_6 H_9 NO \\ C_4 H_{11} NO_2 \\ C_4 H_{11} NO \\ C_6 H_8 N_2 \\ C_8 H_{11} N \\ C_9 H_6 N_2 O_2 \\ C_6 H_8 N_2 \\ C_{10} H_{15} N \\ C_6 H_8 N_2 \\ C_4 H_{11} NO \\ C_4 H_{11} NO \\ C_4 H_{11} NO \\ C_9 H_{13} N \end{array}$	88-12-0 929-06-6 110-73-6 5910-89-4 108-75-8 584-84-9 123-32-0 579-66-8 108-50-9 96-20-8 124-68-5 108-01-0 24549-06-2	NB NB NB NB NB NB 200 NB NB NB	NB NB NB NB NB NB 1000 NB NB NB	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	
 346 1-Methylimidazol 347 1-Vinyl-2-pyrrolidinone (N-vinyl-2-pyrrolidinone) 348 2-(2-Aminoethoxy)ethanol (Diethylene glycol amine) 349 2-(Ethylamino)ethanol (EMEA; N-Ethylethanolamine) 350 2,3-Dimethylpyrazine 351 2,4.6-Trimethylpyraine 352 2,4-Toluene diisocyanate 353 2,5-Dimethylpyrazine 354 2,6-Diethylaniline 355 2,6-Dimethylpyrazine 356 2-Amino-1-butanol 357 2-Amino-2-methylpropanol (β-Aminoisobutyl alcohol, AMP) 358 2-Dimethylaminoethanol (N,N-Dimethyl-2-hydroxyethylamine, N,N-Di 359 2-Ethyl-6-methylaniline 360 2-Methylaminoethanol (N-Methylethanolamine) 	$\begin{array}{c} C_4 H_6 N_2 \\ C_6 H_9 NO \\ C_4 H_{11} NO_2 \\ C_4 H_{11} NO \\ C_4 H_{11} NO \\ C_6 H_8 N_2 \\ C_8 H_{11} N \\ C_9 H_6 N_2 O_2 \\ C_6 H_8 N_2 \\ C_{10} H_{15} N \\ C_6 H_8 N_2 \\ C_4 H_{11} NO \\ C_4 H_{11} NO \\ C_9 H_{13} N \\ C_5 H_3 NO \end{array}$	88-12-0 929-06-6 110-73-6 5910-89-4 108-75-8 584-84-9 123-32-0 579-66-8 108-50-9 96-20-8 124-68-5 108-01-0 24549-06-2 109-83-1	NB NB NB NB NB NB 200 NB NB NB NB NB	NB NB NB NB NB 1000 NB NB NB NB NB	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	

b) Add/spinson (Lanixon Sympotical) CLUA 1000 1 b) Add/spinson (Lanixon Sympotical) CLUA 1000 1 1000 1 b) Add/spinson (Lanixon Sympotical) CLUA 1000 1 1000 1 1000 1 c) Add/spinson (Lanixon Sympotical) CLUA 1000 1 1000 1 1000 1 1000 1 c) Add/spinson (Lanixon Sympotical) CLUA 1000 1							
MS 5 700000000000000000000000000000000000	363 3-Amino-1-propanol	C ₃ H ₉ NO	156-87-6	NB	NB	ppm	
16.4 74.04 0.002 No. 0.001 12.4 2.4.04 1.4.0 0.001 12.4 2.4.04 1.4.0 0.001 12.4 2.4.001 0.014 0.7.001 0.001 12.7 2.4.001 0.014 0.0201 0.001 0.001 12.7 2.4.001 0.014 0.0021 0.001 0.001 12.7 2.4.001 0.014 0.001 0.001 0.001 0.001 12.7 2.4.001 0.014 0.017 0.001 0.001 0.001 0.001 12.7 2.4.001 0.001 0.014 0.001 <td>364 3-Methylpyridine</td> <td>C₆H₇N</td> <td>108-99-6</td> <td>NB</td> <td>NB</td> <td>ppm</td> <td></td>	364 3-Methylpyridine	C ₆ H ₇ N	108-99-6	NB	NB	ppm	
197 Alloward and a second a second and a second an	365 3-Picolyamine (3-(Aminomethyl)pyridine)	C ₆ H ₈ N ₂	3731-52-0	NB	NB	ppm	
197 Alloward and a second a second and a second an		C ₆ H ₅ NO	500-22-1	NB	NB		
International Control Chilo 795-55 Nat Nat Nat 20 Autochnik Chilo Nathernational Control Chilo Some 21 Allerganic Control Chilo Some Some Some 21 Occotecontrol Chilo Some Some Some 22 Occotecontrol Chilo Some Some Some 23 Occotecontrol Chilo Some Some Some Some 23 Occotecontrol Chilo Some Some Some Some 24 Occotecontrol Chilo Some Some Some Some 24 Occotecontrol Chilo<							
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2)7 Alphane C.I.M. 107-15 100 periodic formation of the second o							
17.1 Alife Backsachting) C.J.V.K 107.0 NB NB pan 17.2 Reingelmen (Anisothelly Construction) C.H.V.K 100.473 NB RB pan 17.1 Reingelmen (Anisothelly Construction) C.H.V.K 100.473 NB RB pan 17.1 Reingelmen (Anisothelly Construction) C.H.V.K 100.473 RB pan 17.1 Reingelmen (Anisothelly Construction) C.H.V.K 100.49 RB pan 17.1 Reingelmen (Anisothelly Construction) C.H.V.K 100.49 RB pan 17.1 Reingelmen (Anisothelly Construction) C.H.V.K 100.49 RB pan 18.1 Reingelmen (Anisothelly Construction) C.H.V.K 114.43 RB pan 18.1 Reingelmen (Anisothelly Construction)							
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175 Bordynine (-Hacyantakdare) C,H,N 1113-44 NB NB DB 177 Conseque (Depan) C,H,N 1119-724 CB NB DD 177 Conseque (Depan) C,H,N 1118-22 NB NB DD 179 Conseque (Depan) C,H,N 1118-22 NB NB DD 170 Conseque (Depan) C,H,AN 1118-22 NB NB DD 170 Conseque (Depan) C,H,AN 1118-22 NB NB DD 180 Consequence (Depan) C,H,AN 1118-22 NB DD DD 181 Consequence (Depan) C,H,AN 1118-24 NB DD DD 182 Consequence (Depan) C,H,AN 1118-24 NB DD DD 183 Consequence (DP) C,H,AN 1118-24 NB DD DD 184 Consequence (DP) C,H,AN 1117-25 NB ND DD 184 Consequence (DP) C,H,AN 1117-26 NB ND DD 184 Consequence (DP) C,H,AN 1117-26 NB ND DD <							
13/1 Signam CHA 10/2 2000 0000 0000 13/2 Cycloregamine CHA 118/2 Nale Nale 0000 13/2 Cycloregamine CHA 118/2 Nale Nale 0000 13/2 Cycloregamine CHA 111/2 Nale Nale 0000 13/2 Cycloregamine CHA 1000-000 0000 0000 0000 13/2 Cycloregamine CHA 700-000 0000 0000 0000 13/2 Cycloregamine CHA 700-000 0000 0000 0000 13/2 Cycloregamine CHA 700-000 0000 0000 0000 0000<	374 Benzylamine (α-Aminotoluene)		100-46-9	NB	NB	ppm	
127 Quebley (Queble) Quebley (Queble) NB NB point 127 Quebley (Queble) Quebley (Queble) NB NB point 127 Quebley (Queble) Quebley (Queble) NB NB point 128 Detrinution (QUE A 2) (modelender) Quebley (Queble) NB Point	375 Butyl isocyanate (1-Isocyanatobutane)		111-36-4	NB	NB	ppm	
378 Optiophysimic CPL,N 11942 NB MB para 380 Distribution CPL,NO 111422 NB MB para 381 Distribution CPL,NO 119424 NB NB para 381 Distribution CPL,NO 10679 200 0000 para 382 Distribution CPL,NO 119443 NB NB para 381 Distribution CPL,NO 127443 NB NB para 383 Distribution CPL,NO 127443 NB NB para 383 Distribution CPL,NO 127443 NB NB para 383 Distribution CPL,NO 11443 NB NB para 383 Distribution CPL,NO 114443 NB para para 393 Distribution CPL,NO 114443 NB para para 394 More Statements CPL,NO 114443 NB para para para para	376 Butylamine (1-Butanamine)	$C_4H_{11}N$	109-73-9	200	1000	ppm	
379 Displaymine Cyl, N 111-422 NB NB pan 381 Displaymine Cyl, N 1114-42 NB NB pan 381 Displaymine Cyl, N 1114-42 NB NB pan 381 Displaymine Cyl, N 1114-40 NB NB pan 381 Displaymine Cyl, N 1114-40 NB NB pan 381 Displaymine Cyl, N 114-40 NB NB pan 385 Displaymine Cyl, N 114-43 NB NB pan 387 Displaymine Cyl, N 114-43 NB NB pan 387 Displaymine Cyl, N 114-43 NB NB pan 381 Displaymine Cyl, N 114-43 NB pan pan 381 Displaymine Cyl, N 114-43 NB pan pan 381 Displaymine Cyl, N 114-43 NB pan pan 381 Displaymine	377 Cyanogen (Dicyan)	C_2N_2	460-19-5	NB	NB	ppm	
1910 Definition CPL AV 104-497 100 1000 ppm 132 Definition CPL AV 100-497 200 1000 ppm 132 Definition CPL AV 111-400 1000 1000 ppm 133 Definition CPL AV 111-400 1000 ppm 134 Definition CPL AV 127-195 200 10000 ppm 135 Definition CPL AV 127-195 200 10000 ppm 135 Definition CPL AV 147-155 200 10000 ppm 136 Definition CPL AV 117-153 100 500 ppm 131 Englose CPL AV 117-153 100 500 ppm 132 Englose CPL AV 177-154 100 1000 ppm 133 Hydosen (HMH HydeFinit Secontal) CPL AV 175-164 1000 ppm 134 Hydosen (HMH HydeFinit Secontal) CPL AV 175-164 1000 ppm 134 Hydosen(378 Cyclohexylamine	C ₆ H ₁₃ N	108-91-8	NB	NB	ppm	
1910 Definition CPL AV 104-497 100 1000 ppm 132 Definition CPL AV 100-497 200 1000 ppm 132 Definition CPL AV 111-400 1000 1000 ppm 133 Definition CPL AV 111-400 1000 ppm 134 Definition CPL AV 127-195 200 10000 ppm 135 Definition CPL AV 127-195 200 10000 ppm 135 Definition CPL AV 147-155 200 10000 ppm 136 Definition CPL AV 117-153 100 500 ppm 131 Englose CPL AV 117-153 100 500 ppm 132 Englose CPL AV 177-154 100 1000 ppm 133 Hydosen (HMH HydeFinit Secontal) CPL AV 175-164 1000 ppm 134 Hydosen (HMH HydeFinit Secontal) CPL AV 175-164 1000 ppm 134 Hydosen(379 Dibutylamine	C ₈ H ₁₉ N	111-92-2	NB	NB	ppm	
311 Gen/space Gul-space	380 Diethanolamine (DEA: 2.2'-Iminodiethanol. Bis(2-hydroxyethyl)a		111-42-2	NB	NB		
121 2 Edity C, H ₁ , M ₂ 111.40 100 1000 ppn 383 Dehysione C, H ₁ , M 111.40 100 ppn 384 Dehysione C, H ₁ , M 114.40 NB NB ppn 385 Dehysionens(D, H ₁) C, H ₁ , M 127.495 200 1000 ppn 385 Dehysionens(D, H ₁) C, H ₁ , M 184.453 200 1000 ppn 386 Dehysionens(D, H ₁) C, H ₁ , M 175.454 1000 500 ppn 381 Dehysionens(D, H ₁) C, H ₁ , M 175.454 NB NB ppn 391 Edysionens(D, H ₁) C, H ₁ , M 175.454 NB NB ppn 391 Edysionens(D, H ₁) C, H ₁ , M 175.454 NB NB ppn 391 Edysionens(D, H ₁) C, H ₁ , M 175.454 NB NB ppn 391 Edysionens(D, H ₁) C, H ₁ , M 175.454 NB NB ppn 391 Edysionens(D, H ₁) C, H ₁ , M 176.493 NB ppn Ppn Ppn 391 Edysionens(D, H ₁) C, H ₁ , M 176.493							
13.1 Berkynentamine C, μ/μ, μ/μ 114-04 Note ppm 245 Dinextylandennik C, μ/μ 124-74-5 200 1000 ppm 255 Dinextylandennik C, μ/μ 124-92 1000 ppm 267 Dinextylandennik C, μ/μ 124-92 1000 ppm 287 Dinextylandennik C, μ/μ 124-92 1000 ppm 298 Ethandennic (Ethan=1, 2-tarmine) C, μ/μ 107-94 N8 N8 ppm 291 Extylanden (Ethan=1, 2-tarmine) C, μ/μ 107-94 N8 N8 ppm 291 Extylanden (Ethan=1, 2-tarmine) C, μ/μ 107-94 N8 N8 ppm 291 Extylanden (Ethan=1, 2-tarmine) C, μ/μ 175-94 200 1000 ppm 291 Extylanden (Ethan=1, 2-tarmine) C, μ/μ 755-148 200 1000 ppm 291 Extylanden (Ethan=1, 2-tarmine) C, μ/μ 755-148 200 1000 ppm 291 Extylanden (Ethan=1, 2-tarmine) C, μ/μ 755-148 200 1000 ppm 291 Extylanden (Ethan=1, 2-tarmine) C, μ/μ 755-148 1000	-						
34 A Disciplantice C-J-NO 127-149 200 1000 goin 356 Discriptionations(DMF) C-J-NO 127-149 200 1000 goin 366 Discriptionations(DMF) C-J-NO 164-143 200 1000 goin 378 Discriptionations(DMF) C-J-NO 164-143 200 1000 goin 381 Enhancianine (D-Aminotionation (D-Aminotionationation (D-Aminotionationation (D-Aminotionationationationationationationati							
385 Dimetrylacenamide Cit/NO 172/19.5 200 pometrylacenamide 385 Dimetrylacenamide Cit/NO 164.3 200 pometrylacenamide 387 Dimetrylacenamide Cit/NO 164.3 200 pometrylacenamide pometrylacenamide 388 Dimetrylacenamice Cit/NO 114.3 200 1000 pometrylacenamide pometrylacenamide <td>-</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	-						
545 Christophanien Christophane Partial Structure Parit Structure Parit Structure	-						
197 Discreption C-HAD 141-12 200 1000 pm 198 Endownine (E-Aminochansky, KEA) C-HAN 754-47 NB NB pm 198 Endownine (E-Bmaner, C-Bmaner, C-Maner, C-Maner							
188 Environmento (2-Aminonatumo) (AA) CH-MAN 1141-43-5 200 MOR Pprovide (1) 190 Enfinyational (Enhamartino) CH-MAN 1071-15-3 100 Pprovide (1) Pprovide (1) 391 Enfinyational (Chamartino) CH-MAN 1112-62 M8 M8 pprovide (1) 393 Hydrogen spaniole CH-MAN 7112-62 M8 M8 pprovide (1) Pp	-					ppm	
199 Entrylexalman (Elhan-1, 2duarike) CH-M, N0 7504-7 NB S00 S00 391 Entrylexalman (Elhan-1, 2duarike) CH-M, N0 100,74.3 NB NB S00 S00 391 Entrylexalman (Elhan-1, 2duarike) CH-M, N0 7304 NB NB S00 S00 S00 393 Hydrogen cyanike (Heftylethyl isocyanato, 2 tocyanatopropan CA+N) 795-498 S00 1000 S00 S00 394 Stocopyl notine (LPHeftylethyl isocyanato, 2 tocyanatopropan CA+N) 795-498 S00 S00 </td <td>187 Dimethylformamide (DMF)</td> <td>C₃H₇NO</td> <td>68-12-2</td> <td>200</td> <td>1000</td> <td>ppm</td> <td></td>	187 Dimethylformamide (DMF)	C ₃ H ₇ NO	68-12-2	200	1000	ppm	
1910 1001 1001 1001 1001 1911 Endymonytationals C,H,N 111262 NB NB provide 1921 Handymonytationals HCN 74508 100 500 provide 1921 Handymonytationals HCN 74508 100 500 provide 1931 Handymonytationals HCN 74508 200 1000 provide 1931 Handymonytationals C,H,N 73548 NB Pane provide 1000 provide 1000 provide 1000 1000 provide 1000 1000 provide 1000	388 Ethanolamine (2-Aminoethanol; MEA)	C ₂ H ₇ NO	141-43-5	200	1000	ppm	
191 Enyincycholine C,H,NO 100-743 NB NB pom 392 Hedynmine C,H,SN 111262 NB NB pom 393 Hydrogen yanide HNN 74008 NB pom Only non-instrument specific references. 394 Horzogenate (MM-Kytherik Jeschante, 2-klacy canato forpane C,HAN 75348 NB NB pom 396 Horzogenate (MM-Kytherik Jeschante, 2-klacy canato forpane C,HAN 75348 NB NB pom 396 MHY disthanolamine (MOEA) C,HAN 75348 NB pom pom 398 MHY disthanolamine (MOEA) C,HAN 105599 100 pom pom 400 Methylainste (MoEA) C,HAN 74995 NB NB pom 401 MrDiphethylainine (NAEb) C,HAN 74995 NB NB pom 401 MrDiphethylainine (NAEb) C,HAN 74995 NB NB pom 403 MrDimethylainine (NAEb) C,HAN 996350 NB pom pom 404 MrDimethylainine (NAEb)<	389 Ethylamine (1-Ethanamine)	C_2H_7N	75-04-7	NB	NB	ppm	
191 Englandsholine C,H,NO 100 743 NB NB ppm 292 Haydinnice C,H,NO 71948 100 500 ppm 393 Hydrogen spinite (JM-Hydrogen tocyanate) HKCO 75138 NB NB ppm 394 Isographi conjunate (JM-Hydrogen tocyanate) C,H,NO 75138 NB NB ppm 395 Isographi conjunate (JM-Hydrogen tocyanate) C,H,NO 75138 NB ppm 395 Methacychonate (JM-C,Maydin tocyanate, Z-HoNO, and K-S-S-S NB NB ppm 396 Methacychonate (JM-C,Maydin tocyanate, Z-HoNO, and K-S-S-S NB NB ppm 397 Methacychonate (JMO-C,MAN, AND, AND, AND, AND, AND, AND, AND, A	390 Ethylenediamine (Ethane-1,2-diamine)	$C_2H_8N_2$	107-15-3	100	500	ppm	
192 Explandine CpLin,N 111-26-2 NB NB ppm 933 Hydrogen cyanide HCN 74908 100 500 ppm 934 Hocyanic acid (Hydrogen isocyanate) HKCO 75138 NB NB ppm Only non-instrument specific references. 935 Isocyanic (Muthylethyl isocyanate) CpLin/NO 1795488 200 1000 ppm 937 Mathacylontrile CpLin/NO 10599 100 500 ppm 939 Methyl discognatorethane) CpLin/NO 10599 100 500 ppm 939 Methyl discognatorethane) CpLin/NO 104959 NB NB ppm 940 Morphelinine CpLin/NO 110918 200 1000 ppm 403 NADirethylininine CpLin/NO 121697 NB NB ppm 404 NADirethylininine (NAthylidiethylianino) CpLin/NO 121697 NB NB ppm 405 NNOrethylininine (NAthylidiethylianino) CpLin/NO 121697 NB NB ppm			100-74-3				
193 Hydrogen cyanide HON 74.098 100 por 394 isocyna isocynate (1-Methylethyl isocynate, 2-Isocynatopropar, C,H,NO 757.38 NB por 396 isopropylamine (2-Propananine) C,H,NO 757.34 200 1000 ppr 396 isopropylamine (2-Propananine) C,H,NO 125.997 NB NB ppr 397 Methacyclonate (lacynatatorethane) C,H,NO 125.997 NB NB ppr 398 Methyl isocynate (lacynatatorethane) C,H,NO 74.898 NB ppr 400 Methylamine (MEA) C,H,NO 110-918 200 1000 ppr 403 NADienthylamine (MAthylathylamine) C,H,N 1616.977 NB NB ppr 404 NADiethylamine (MAthylathylathylamine) C,H,N 199.856.1 NB NB ppr 404 NADiethylathylamine (MAthylathylathylathylathylathylathylathyla							
194 INCO 75-138 NB NB DM Ohly non-instrument specific references. 956 locopy of syname (2-Methy locoynate, 2-locoynatopranom, C,H,N 1795-648. 200 1000 ppm 396 locopy of mine (2-Propanamine) C,H,N 172-649. 200 1000 ppm 397 Methy discription (MEA) C,H,NO 126-599 100 500 ppm 398 Methy discription (MEA) C,H,NO 126-489 NB ppm 401 Morpholine C,H,N 624-839 NB NB ppm 403 MADimethylasinine (M-Methyldiethylamine) C,H,N 121-697 NB NB ppm 404 MADimethylamine (NA-Methyldiethylamine) C,H,N 121-697 NB NB ppm 405 NADimethylamine (NA-Methyldiethylamine) C,H,N 129-65-1 NB NB ppm 404 MADimethylamine (NA-Methylamine) C,H,NO 752-52 200 1000 ppm 405 NADimethylamine (NA-Meth							
395 [soppoyl isocyanate (-)Methylethyl isocyanate (-)K-N0 1795-88 200 1000 ppm 396 [soppoyl isocyanate (-)Methylethyl isocyanate (-)K-N0 126-997 NB NB ppm 397 Methacylonitrile C,H_N0 126-997 NB NB ppm 398 Methyl isocyanate (lacyanatemethane) C,H_N0 100-97 NB NB ppm 400 Methylanine (NAEA) C,H_N0 748-95 NB NB ppm 401 Morpholine (NAEhyldiethylamine) C,H_N 748-97 NB NB ppm 403 NADianethydamine (NAEhyldiethylamine) C,H_N 1216-97 NB NB ppm 405 NADianethydamine (NAEhyldiethylamine, DMEA) C,H_N 998-551 NB NB ppm 405 NaDianethylathylamine (NAEhyldiethylamine, DMEA) C,H_N 998-552 200 1000 ppm 405 NaDianethylathylamine (NAEhyldiethylamine, DMEA) C,H_N 998-553 NB NB ppm 406 Narboethare C,H_NO2 752-52 200 1000 ppm 407 Narboethare C,H_NO2 752-52 200 1000 ppm							Only non-instance ifin a famous
396 Spropylamine (2-Proparamine) C/H,N 7531 200 1000 ppm 397 Methacylonitrite C/H,NQ 105599 100 500 ppm 398 Methyl dieknandamine (MDEA) C/H,NQ 2624839 NB8 ppm							Unly non-instrument specific references.
197 Methodynomic MDEA) C,H,NQ 105.697 NB MB pm 98 Methy dechanomic (MDEA) C,H,NQ 105.599 NB SD pm 99 Methy isconante (bacynatiomethame) C,H,NQ 7.8495 NB BB pm 400 Methy inconante (MACHy Methy Me							
998 Hethyl alexholamic (MDEA) C,H ₁ NO 6248.39 NB NB pm 999 Methyl isocyanate (isocyanatomethane) C,H ₁ NO 74.89-5 NB NB pm 401 Morpholine C,H ₁ NO 74.89-5 NB NB pm 402 NN-Dimethylamite (Methyldithylamine) C,H ₁ NO 161.69-7 NB NB pm 403 NN-Dimethylamite (Methyldithylamine), DMEA) C,H ₁ NO 121.69-7 100 500 pm 404 NN-Dimethylamite (Methyldithylamine, DMEA) C,H ₁ NO 1998.35-1 NB NB pm 405 NN-Dimethylamite/NDImethyl-Zyropanamine C,H ₁ NO 792.42 200 1000 pm 405 Nitobenzene C,H ₁ NO 792.42 200 1000 pm 408 Nitomethane C,H ₁ NO 109.92.52 200 1000 pm 409 MAthyl-J, diaminopropane (MAPA; 3(Methylamino)proxime: (C,H ₁ NO 109.42.5 NB NB pm 410 Methyl-J, diaminopropane (MAPA; 3(Methylamino)proxime: (C,H ₁ NO 1097.2 NB NB <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>							
399 Methylanice (uscyanatomethane) C2H_NO 624.83-9 NB NB ppm 400 Methylamine CH_N 74.89-5 NB NB ppm 401 Morpholine C,H_N 616.39-7 NB NB ppm 402 NND-bethylmethylamine (N-Methyldiethylamine) C,H_N 616.39-7 NB NB ppm 403 NND-bintethylethylamine (N-Ethyldimethylamine, DMEA) C,H_N 598.56-1 NB NB ppm 405 NND-bintethylethylamine (N-Ethyldimethylamine, DMEA) C,H_NQ 98.95-2 200 1000 ppm 405 Nitroethane C,H_NQ 79.24-3 200 1000 ppm 406 Nitroethane C,H_NQ 79.24-3 200 1000 ppm 410 rhAdethylmorpholine (MAPA; 3:(Methylamino)propylmine; C,H_N,N 629.18-5 NB NB ppm 410 rhAdethylmorpholine C,H_NQ 109.02-4 200 1000 ppm 411 rhAdethylmorpholine C,H_NQ 109.72-4 200 1000 ppm 412 <td>-</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	-						
400 Herbylamine CH, N 7.489-5 NB NB ppm 401 Morpholine C, H, N 10.91-8 200 1000 ppm 402 NA-Diorethylamine (N-Methyldiethylamine) C, H, N 121-69-7 100 500 ppm 403 NA-Diorethylethylamine (N-Hethyldinethylamine, DEA) C, H, N 129-69-7 100 500 ppm 405 NA-Diorethylethylamine (N-Hethyldinethylamine, DEA) C, H, NO 996-85-0 NB NB ppm 405 Nitrobenzene C, H, NO, 795-25 200 1000 ppm 406 Nitrobenzene C, H, NO, 792-42 200 1000 ppm 410 n-Methylmorpholine (A-Methylamino)propayame, IC, H, NO, 792-52 200 1000 ppm 410 n-Methylmorpholine (A-Methylamino)propayame, IC, H, NO, 109-02-4 200 1000 ppm 410 n-Methylmorpholine (A-Methylamonpholine) C, H, NO, 103-71-0 NB NB ppm 411 <td< td=""><td></td><td></td><td></td><td></td><td></td><td>ppm</td><td></td></td<>						ppm	
401 Morpholine C,H,NO 110-91-8 200 1000 pm 402 NAV-Diethytmethylamine (N-Methyldeithylamine) C,H1,N 126-67-7 100 500 pm 404 NAV-Dimethylamine (N-Methyldeithylamine, DMEA) C,H1,N 129-67-7 NB NB pm 405 NAV-Dimethylamine (N-Ethyldemethylamine, DMEA) C,H1,N 199-635-0 NB NB pm 405 NAV-Dimethylaporopylamine (N-Dimethyl-2 propanamic) C,H1,NO 99-95-3 200 1000 pm 407 Nitroethane C,H1,NO 75-25 200 1000 pm 409 N-Methyl-1.3-diaminopropane (MAPA)-3-(Methylamino)propylamic; I C,H1,2N 6291-84-5 NB NB pm 410 n-Methylmorpholine (-A-Methylmorpholine) C,H1,NO 109-24 200 1000 ppm 411 n-Methylmorpholine (-A-Methylmorpholine) C,H1,NO 109-24 200 1000 ppm 412 o-Toluidine (C-A-minotolume: 2-Methylbezzenamine) C,H1,NO 103-71-0 NB NB ppm 413 Phenyl isocyanate (Carbanii, Phenylcarbinide)	J99 Methyl isocyanate (Isocyanatomethane)	C ₂ H ₃ NO	624-83-9	NB	NB	ppm	
402 N.N.Diethylmethylamie (N-Methyldiethylamine) C,H ₁ ,N 121-69-7 100 500 ppm 403 N.N-Dimethylethylamine (N-Ethyldimethylamine, DMEA) C,H ₁ ,N 199-63-51 NB NB ppm 405 N.N-Dimethylethylamine (N-Ethyldimethylamine, DMEA) C,H ₁ ,N 199-63-50 NB NB ppm 405 N.N-Dimethylisoproplamine (N-N-Dimethyl-2-propanamine) C,H ₁ ,NO 199-63-50 NB NB ppm 406 Nitrobenzene C,H ₁ ,NO 199-63-52 200 1000 ppm 408 Nitrobenzene C,H ₁ ,NO ₂ 7552-5 200 1000 ppm 409 NMethyl-1,3-diaminopropane (MAPA; 3-(Methylamino)proplamine; IC,H ₁ ,N ₂ 6291-84-5 NB NB ppm 410 n-Methylinopholne (A-Methylinopholme) C,H ₁ ,NO 190-62-4 200 1000 ppm 411 o-Toluidine (2-Aminotoluene; 2-Methylibenzamanine) C,H ₁ ,NO 190-77-0 NB NB ppm 412 o-Toluidine (2-Aminotoluene; 2-Methylibenzamanine) C,H ₁ ,N 103-72-0 NB NB ppm 413	400 Methylamine	CH₅N	74-89-5	NB	NB	ppm	
403 N.N-Dimethylamine C ₄ H ₁ ,N 121-69-7 100 500 ppm 404 N.N-Dimethylemine (N-Ethyldimethylamine, DMEA) C ₄ H ₁ ,N 599-550 NB NB ppm 405 N.N-Dimethyleoprogramine (N.N-Dimethyl-2-propanamice) C ₄ H ₁ ,N 599-550 NB NB ppm 406 Nitrobenzene C ₄ H ₂ ,NQ 79-24-3 200 1000 ppm 407 Nitroethane C ₄ H ₂ ,NQ 79-24-3 200 1000 ppm 408 Nitromethane C ₄ H ₂ NQ 79-52-5 200 1000 ppm 410 n-Methyl-13-diaminopropane (MAPA; 3-(Methylamino)propylamine; C ₄ H ₂ N ₂ 68-72-2 NB NB ppm 411 n-Nitrotoluene C ₄ H ₁ N 109-02-4 200 1000 ppm 412 o-Toluidine (2-Aminylopothanic) (-Methylamino)propylamine; C ₄ H ₁ N 109-02-4 200 1000 ppm 413 Phenyl isothiocyanate (lasthino-phenelemine) C ₄ H ₁ N 109-72-0 NB NB ppm 414 Phenyl isothiocyanate (lasthino-phenelemine) C ₄ H ₁ N 110-85-0 <td>401 Morpholine</td> <td>C₄H₉NO</td> <td>110-91-8</td> <td>200</td> <td>1000</td> <td>ppm</td> <td></td>	401 Morpholine	C ₄ H ₉ NO	110-91-8	200	1000	ppm	
400 N.N-Dimethylethylamine (NE-thyldimethyl-2-propanamine) C ₂ H ₁ ,N 598-56-1 NB NB ppm 405 N.N-Dimethyl-2-propanamine) C ₂ H ₁ NO 999-350 ND NB ppm 405 Nikromethane C ₂ H ₄ NO ₂ 79-24-3 200 1000 ppm 408 Nikromethane C ₂ H ₄ NO ₂ 79-24-3 200 1000 ppm 408 Nikromethane C ₂ H ₄ NO ₂ 79-24-3 200 1000 ppm 410 n-Methylmorpholine (4Methylamino)propylamine; IC ₄ H ₁ N ₅ 6291-84-5 NB NB ppm 410 n-Methylmorpholine (2Amintoluene; 2-Methylbenzenamine) C ₂ H ₁ NO 109-24 200 1000 ppm 413 Phenyl isocyanate (Carbani; Phenylcarbimide) C ₁ H ₁ NO 108-71-9 NB NB ppm 413 Phenyl isocyanate (losthicyanatobenzene) C ₁ H ₁ N ₅ 103-72-0 NB NB ppm 414 Phenyl isothicyanate (losthicyanatobenzene) C ₁ H ₁ N ₅ 103-72-0 NB NB ppm 416 Piperidine C ₂ H ₁ N 107-168 200 1000 ppm 417 Propanenitrite C ₁ H ₁ N 107-168 <td>402 N,N-Diethylmethylamine (N-Methyldiethylamine)</td> <td>C₅H₁₃N</td> <td>616-39-7</td> <td>NB</td> <td>NB</td> <td>ppm</td> <td></td>	402 N,N-Diethylmethylamine (N-Methyldiethylamine)	C ₅ H ₁₃ N	616-39-7	NB	NB	ppm	
405 N.P.Dimethylisopropylamine (NJN-Dimethyl-2 propanamine) C ₂ H ₁ N 996-35-0 NB NB ppm 406 Nitrobenzene C ₂ H ₂ NO ₂ 98-95-3 200 1000 ppm 408 Nitrobenzene C ₂ H ₂ NO ₂ 75-52-5 200 1000 ppm 408 Nitromethane CH ₄ NO ₂ 75-52-5 200 1000 ppm 409 N-Methyl-1,3-diaminopropane (MAPA; 3-(Methylamino)propylamine; IC,H ₁ N ₂ 6291-84-5 NB NB ppm 410 n-Methylmorpholine (4-Methylmorpholine) C ₂ H ₁ N ₂ 88-72-2 NB NB ppm 412 o-Toluidine (2-Aminotoluene; 2-Methylbenzenamine) C ₂ H ₃ N 103-77-0 NB NB ppm 413 Phenyl isocyanate (Carbanii; Phenylcarbimide) C ₂ H ₃ NO 103-77-0 NB NB ppm 415 Piperazine (Diethylenediamine; Hexahydropyrazine) C ₄ H ₄ N ₂ 110-85-0 NB NB ppm 418 Propylamine (1-Aminopropane) C ₂ H ₃ N 107-12-0 NB NB ppm 418 Propylamine (2-AminN 107-12-0	103 N,N-Dimethylaniline	C ₈ H ₁₁ N	121-69-7	100	500	ppm	
405 N.N-Dimethylisopropylamine (N.N-Dimethyl-2-propanamine) $C_9H_3N_0$ 996-35-0 NB NB ppm 406 Nitrobenzene $C_9H_3N_0$ 992-93 200 1000 ppm 408 Nitrobenzene $C_1H_3N_0$ 7552-5 200 1000 ppm 408 Nitromethane $C_1H_1N_0$ 6291-84-5 NB ppm 410 n-Methyl-1,3-diaminopropane (MAPA; 3-(Methylamino)propylamine ($L_4H_1N_0$ 6291-84-5 NB ppm 410 n-Methyl-1,3-diaminopropane (MAPA; 3-(Methylamino)propylamine ($L_2H_1N_0$ 6872-2 NB NB ppm 411 n-Methyl-1,3-diaminotoluene; 2-Methylbenzenamine) $C_1H_1N_0$ 10872-0 NB NB ppm 413 Phenyl isocyanate (Carbanil; Phenylcarbimide) $C_7H_3N_0$ 10371-0 NB NB ppm 415 Piperaine (Diethylenediamine; Hexabydropyrazine) $C_4H_1N_1$ 10712-0 NB NB ppm 418 Propylamine (1-Aminopropane) $C_2H_3N_1$ 10710-8 200 1000 ppm 418 Propylamine (2-Methyl-2-propanamine) $C_4H_3N_1$	104 N,N-Dimethylethylamine (N-Ethyldimethylamine, DMEA)	C ₄ H ₁₁ N	598-56-1	NB	NB	ppm	
406 Nitrobenzene C ₄ H ₄ NO ₂ 98-95-3 200 1000 ppm 407 Nitroethane C ₄ H ₄ NO ₂ 79-24-3 200 1000 ppm 408 Nitroethane CH ₄ NO ₂ 75-52-5 200 1000 ppm 408 Nitroethane CH ₄ NO ₂ 6291-84-5 NB NB ppm 410 Mitroblene (4Methylmorpholine) C ₄ H ₄ NO ₂ 88-72-2 NB NB ppm 412 o-Toluidine (2-Aminotoluene; 2-Methylbenzenamine) C ₄ H ₄ NO 89-53-4 NB NB ppm 413 Phenyl isocyanate (Carbani, Phenylcarbinide) C ₄ H ₄ NO 103-71-9 NB NB ppm 414 Phenyl isocyanate (Carbani, Phenylcarbinide) C ₄ H ₄ NO 103-72-0 NB NB ppm 413 Phenyl siocyanate (Carbani, Phenylcarbinide) C ₄ H ₄ NO 103-72-0 NB NB ppm 414 Phenyl siocyanate (Carbani, Phenylcarbinide) C ₄ H ₄ N 107-10-8 200 1000 ppm 415 Piperialine C ₄ H ₄ N 107-10-8 200	405 N.N-Dimethylisopropylamine (N.N-Dimethyl-2-propanamine)		996-35-0	NB	NB		
407Nitroethane $C_2H_3N_0_2$ 79:24-32001000ppm408Nitromethane $CH_3N_0_2$ 75:52:52001000ppm409N-Methyl-13-diaminopropane (MAPA; 3-(Methylamino)propylamine; 1C_4H_1N_26291:84-5NBNBppm411n-Methyl-13-diaminopropane (MAPA; 3-(Methylamino)propylamine; 1C_4H_1N_28291:84-5NBNBppm411n-Methyl-13-diaminopropane (MAPA; 3-(Methylamino)propylamine; 1C_4H_1N_287:72NBNBppm411n-Methyl-13-diaminotoluene; 2-Methylbezenamine) $C_2H_1N_2$ 87:72NBNBppm412o-Toluidine (2-Aminiotoluene; 2-Methylbezenamine) $C_2H_1N_2$ 103:71NBNBppm414Phenyl isocyanate (Isothiocyanatobenzene) $C_2H_1N_3$ 103:72.0NBNBppm415Piperazine (Diethylenediamine; Hexahydropyrazine) $C_4H_1N_4$ 110:85-0NBNBppm416Piperindine C_3H_1N 110:71-20NBNBppm417Propanenitrile C_3H_5N 107:71-20NBNBppm418Propylamine (1-Aminopropane) C_4H_1N 170:10-82001000ppm420tert-Butylamine (1-Aminopropane) C_4H_1N 173:64-9NBNBppm421tert-Butylamine (1-Asi-1,3.3-Tetraethylurea) $C_3H_2N_2$ 118'0:73-7NBNBppm422tert-Butylamine (1,1,3.3-Tetraethylurea) $C_3H_1N_2N_2$ 118'0:73-7NBNB<							
408 Nitromethane CH_3NO_2 75:52:5 200 1000 ppm 409 N-Methyl-1,3-diaminopropane (MAPA; 3-(Methylamino)propylamine; IC,H ₁₂ H ₂ M ₂ 6291:84-5 NB NB ppm 410 n-Methylmorpholine (4-Methylmorpholine) $C_2H_{11}NO$ 1090:24 200 1000 ppm 411 o-Nitrotoluene $C_2H_{11}NO$ 1090:24 200 1000 ppm 412 o-Toluidine (2-Aminotoluene; 2-Methylbenzenamine) C_2H_3N 95:53:4 NB NB ppm 413 Phenyl isocyanate (Carbani; Phenylcarbimide) C_2H_3N 103:71:9 NB NB ppm 414 Phenyl isocyanate (Isothiocyanatobenzene) C_2H_3N 103:72:0 NB NB ppm 415 Piperazine (Diethylendiamine; Hexahydropyrazine) $C_4H_1N^4$ 110:85:0 NB NB ppm 416 Piperidine C_3H_1N 110:89:4 200 1000 ppm 417 Propanenitrile C_2H_4N 107:10:8 200 1000 ppm 418 Propylamine (1-Aminopropane) C_2H_4N <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>							
409 N-Methyl-1,3-diaminopropane (MAPA; 3-(Methylamino)propylamine; IC4H12N2 6291-84-5 NB NB ppm 410 n-Methylmorpholine (4-Methylmorpholine) CgH1, NO 1092-4 200 1000 ppm 411 n-Methylmorpholine (4-Methylmorpholine) CgH1, NO 1892-22 NB NB ppm 411 n-Nitrotoluene C-HethN0 103-71-9 NB NB ppm 413 Phenyl isocyanate (Carbanit; Phenylcarbimide) C, HethN3 103-72-0 NB NB ppm 414 Phenyl isocyanate (Isothiocyanatobenzene) CgH1, NS 103-72-0 NB NB ppm 415 Piperazine (Diethylenediamine; Hexahydropyrazine) CgH1, NS 107-12-0 NB NB ppm 416 Piperidine CgH4, N 110-85-1 200 1000 ppm 417 Propanenitrile CgH4, N 107-12-0 NB NB ppm 420 Pyrrolidine (Azacyclopentane) CgH4, N 110-86-1 100 500 ppm 421 Pertomethylarea (1, 1, 3, 3-Tetramethylurea) CgH4, N 123-75-1 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>							
410n-Methylmorpholine (4-Methylmorpholine) $C_gH_{11}NO$ 109-02-42001000ppm411o-Nitrobluene $C_{1}H_{1}NO_{2}$ 88-72-2NBNBppm412o-Toluidine (2-Aminotoluene; 2-Methylbenzenamine) $C_{1}H_{3}N$ 95-53-4NBNBppm413Phenyl isocyanate (Carbanii, Phenylcarbimide) $C_{1}H_{3}NO$ 103-71-9NBNBppm414Phenyl isotyoanate (Sothiocyanatobenzene) $C_{1}H_{3}NS$ 103-72-0NBNBppm415Piperazine (Diethylenediamine; Hexahydropyrazine) $C_{4}H_{1}NO_{2}$ 110-85-0NBNBppm416Piperidine $C_{2}H_{3}N$ 107-10-82001000ppm418Propylamine (1-Aminopropane) $C_{4}H_{3}N$ 107-10-82001000ppm419Pyridine $C_{2}H_{3}N$ 110-86-1100500ppm410Pyrolidine (Azacyclopentane) $C_{4}H_{3}N$ 123-75-12001000ppm412Tertaethylurea (1,1,3,3-Tetraethylurea) $C_{4}H_{3}N$ 123-75-12001000ppm421tert-Butylamine (2-Methyl-2-propanamine) $C_{4}H_{3}N_{3}$ 102-71-6NBNBppm422Tetraethylurea (1,1,3,3-Tetraethylurea) $C_{4}H_{3}N_{3}$ 102-71-6NBNBppm423Tetraethylurea (1,1,3,3-Tetraethylurea) $C_{4}H_{3}N_{3}$ 102-71-6NBNBppm424Tritethologamine $C_{4}H_{3}N_{3}$ 102-71-6N							
111o-NitroblemeC-H, No. C-H, No.Ref 2:2 Ref 2:2NBNBppm412o-Toluidine (2-Aminotoluene; 2-Methylbenzenamine)C-H, N95-53-4NBNBppm413Phenyl isocyanate (Carbanit, Phenylcarbinide)C-H, NO103-71-9NBNBppm414Phenyl isocyanate (Carbanit, Phenylcarbinide)C-H, NO103-71-9NBNBppm414Phenyl isocyanate (Carbanit, Phenylcarbinide)C-H, NO103-72-0NBNBppm415Piperazine (Diethylenediamine; Hexahydropyrazine)C, H, NO110-85-0NBNBppm416PiperidineC-H, NN110-88-42001000ppm417PropanenitrileC-H, NN107-12-0NBNBppm418Propylamine (1-Aminopropane)C-H, N107-10-82001000ppm419Pyridine (Azacyclopentane)C-H, N110-86-1100500ppm420Pyridiline (Azacyclopentane)C-H, N1187-03-7NBNBppm421tert-Butylamine (1,1,3,3-Tetramethylurea)C-H, N75-64-9NBNBppm422Tetramethylurea (1,1,3,3-Tetramethylurea)C-H, N102-71-6NBNBppm423Tetramethylurea (1,1,3,3-Tetramethylurea)C-H, N75-0-3NBNBppm424TriethylamineC-H, N75-0-3NBNBppm425TriethylamineC-H, SN102-71-6 <td< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td></td<>							
412 o-Toluidine (2-Aminotoluene; 2-Methylbenzenamine) C ₇ H ₉ N0 95:53:4 NB NB ppm 413 Phenyl isocyanate (Carbanil; Phenylcarbimide) C ₇ H ₉ N0 103:71:9 NB NB ppm 414 Phenyl isocyanate (Isothiocyanatobenzene) C ₇ H ₉ N0 103:72:0 NB NB ppm 415 Piperazine (Diethylenediamine; Hexahydropyrazine) C ₄ H ₁₀ N ₂ 110:85:0 NB NB ppm 416 Piperazine (Diethylenediamine; Hexahydropyrazine) C ₄ H ₁₀ N ₂ 110:89:4 200 1000 ppm 417 Propanenitrile C ₃ H ₅ N 107:12:0 NB NB ppm 418 Propylamine (1-Aminopropane) C ₉ H ₈ N 107:10:8 200 1000 ppm 420 Pyriolidine (Azacyclopentane) C ₄ H ₈ N 107:10:8 200 1000 ppm 421 tert-Butylamine (2-Methyl-2-propanamine) C ₄ H ₈ N 112:375:1 200 1000 ppm 422 Tetramethylurea (1,1,3,3-Tetramethylurea) C ₄ H ₁₁ N 75:64:9 NB NB ppm 423 Tetramet							
413 Phenyl isocyanate (Carbanii; Phenylcarbimide) C ₂ H ₃ NO 103-71-9 NB NB ppm 414 Phenyl isothiocyanate (Isothiocyanatobenzene) C ₂ H ₃ NS 103-72-0 NB NB ppm 415 Piperazine (Diethylenediamine; Hexahydropyrazine) C ₄ H ₁₀ N ₂ 110-85-0 NB NB ppm 416 Piperiazine (Diethylenediamine; Hexahydropyrazine) C ₄ H ₁₀ N ₂ 110-85-0 NB NB ppm 417 Propanenitrile C ₃ H ₃ N 107-12-0 NB NB ppm 418 Propylamine (1-Aminopropane) C ₃ H ₃ N 107-10-8 200 1000 ppm 419 Pyridine C ₂ H ₃ N 110-86-1 100 500 ppm 420 Pyrrolidine (Azacyclopentane) C ₄ H ₄ N 123-75-1 200 1000 ppm 421 tert-Butylamine (2-Methyl-2-propanamine) C ₄ H ₄ N 75-64-9 NB NB ppm 422 Tert-Butylamine (1,1,3,3-Tetramethylurea) C ₃ H ₄ N ₂ No 102-71-6 NB NB ppm 424 Triethanolamine C ₃ H ₄ N				NB	NB	ppm	
414Phenyl isothiocyanate (isothiocyanate (isothiocyanatobenzene) C_2H_5NS 103-72-0NBNBppm415Piperazine (Diethylenediamine; Hexahydropyrazine) $C_4H_{10}N_2$ 110-85-0NBNBppm416Piperidine C_2H_1N 110-85-0NBNBppm417Propanenitrile C_2H_5N 107-12-0NBNBppm418Propylamine (1-Aminopropane) C_2H_5N 100-710-82001000ppm419Pyridine C_2H_5N 110-86-1100500ppm420Pyrrolidine (Azacyclopentane) C_4H_5N 123-75-12001000ppm421tert-Butylamine (1,1,3,3-Tetraethylurea) $C_9H_5N_2$ 01187-03-7NBNBppm422Tetraethylurea (1,1,3,3-Tetraethylurea) $C_9H_5N_2$ 01187-03-7NBNBppm423Tetraethylurea (1,1,3,3-Tetraethylurea) $C_9H_5N_2$ 01187-03-7NBNBppm424Triethanolamine $C_9H_5N_2$ 0123-75-6NBNBppm425Triethanolamine $C_9H_5N_3$ 121-44-8NBNBppm426Trimethylurea(1,1,1,2,3-Tetraethylurea) $C_2H_5C_3$ 71-55-6NBNBppm426Triethylamine $C_2H_5C_4$ 79-55-3NBNBppm426Trimethylamine $C_2H_5C_4$ 79-55-3NBNBppm426Triethylamine $C_2H_5C_4$ 79-34-52001000p	12 o-Toluidine (2-Aminotoluene; 2-Methylbenzenamine)	C ₇ H ₉ N	95-53-4	NB	NB	ppm	
415Piperazine (Diethylendiamine; Hexahydropyrazine) $C_4H_{10}N_2$ 110-85-0NBNBppm416Piperdine $C_3H_{11}N$ 110-89-42001000ppm417Propanenitrile C_3H_5N 107-12-0NBNBppm418Propylamine (1-Aminopropane) C_3H_4N 107-10-82001000ppm419Pyrrdidine (Azayclopentane) C_3H_5N 110-86-1100500ppm420Pyrrolidine (Azayclopentane) C_4H_5N 123-75-12001000ppm421tert-Butylamine (2-Methyl-2-propanamine) $C_4H_{11}N$ 75-64-9NBNBppm422Tetraethylurea (1,1,3,3-Tetraethylurea) $C_5H_{12}N_2O$ 1187-03-7NBNBppm423Tetraethylurea (1,1,3,3-Tetraethylurea) $C_5H_{12}N_2O$ 632-22-4NBNBppm424Triethanolamine $C_6H_{15}NO_3$ 102-71-6NBNBppm425Triethylamine (2-Methyl-2-propanatine) $C_6H_{15}NO_3$ 102-71-6NBNBppm426Trimethylamine $C_6H_{15}NO_3$ 102-71-6NBNBppm426425Triethylamine $C_6H_15NO_3$ 102-71-6NBNBppm426Trimethylamine $C_6H_15NO_3$ 102-71-6NBNBppm425Triethylamine $C_8H_2Cl_3$ 71-55-6NBNBppm426Trintchloroethane $C_2H_2Cl_4$ 79-34-52001000	13 Phenyl isocyanate (Carbanil; Phenylcarbimide)	C ₇ H ₅ NO	103-71-9	NB	NB	ppm	
416 Piperidine $C_{s}H_{11}N$ 110-89-42001000ppm417 Propanenitrile $C_{s}H_{5}N$ 107-12-0NBNBppm418 Propylamine (1-Aminopropane) $C_{s}H_{5}N$ 107-10-82001000ppm419 Pyridine $C_{s}H_{5}N$ 110-86-1100500ppm420 Pyrrolidine (Azacyclopentane) $C_{4}H_{9}N$ 123-75-12001000ppm421 tert-Butylamine (2-Methyl-2-propanamine) $C_{4}H_{11}N$ 75-64-9NBNBppm422 Tetratethylurea (1,1,3,3-Tetraethylurea) $C_{9}H_{2}N_{2}O$ 1187-03-7NBNBppm423 Tetramethylurea (1,1,3,3-Tetraethylurea) $C_{5}H_{12}N_{2}O$ 632-22-4NBNBppm424 Triethanolamine $C_{6}H_{15}NO_{3}$ 102-71-6NBNBppm425 Triethylamine (2-Methyl-2-propanatine) $C_{6}H_{15}NO_{3}$ 102-71-6NBNBppm426 Trinethylamine $C_{6}H_{15}NO_{3}$ 102-71-6NBNBppm425 Triethylamine $C_{2}H_{3}Cl_{3}$ 71-55-3NBNBppm426 Trinethylamine $C_{2}H_{3}Cl_{3}$ 71-55-6NBNBppm427 1,1,1-Trichloroethane $C_{2}H_{3}Cl_{3}$ 71-55-6NBNBppm428 1,1,2,2-Tetrachloroethane $C_{2}H_{3}Cl_{3}$ 79-06-52001000ppm429 1,1,2-Trichloroethane $C_{2}H_{3}Cl_{3}$ 79-00-52001000ppm	14 Phenyl isothiocyanate (Isothiocyanatobenzene)	C ₇ H ₅ NS	103-72-0	NB	NB	ppm	
416 Piperidine $C_{s}H_{11}N$ 110-89-42001000ppm417 Propanenitrile $C_{s}H_{5}N$ 107-12-0NBNBppm418 Propylamine (1-Aminopropane) $C_{s}H_{5}N$ 107-10-82001000ppm419 Pyridine $C_{s}H_{5}N$ 110-86-1100500ppm420 Pyrrolidine (Azacyclopentane) $C_{4}H_{9}N$ 123-75-12001000ppm421 tert-Butylamine (2-Methyl-2-propanamine) $C_{4}H_{11}N$ 75-64-9NBNBppm422 Tetratethylurea (1,1,3,3-Tetraethylurea) $C_{9}H_{2}N_{2}O$ 1187-03-7NBNBppm423 Tetramethylurea (1,1,3,3-Tetraethylurea) $C_{5}H_{12}N_{2}O$ 632-22-4NBNBppm424 Triethanolamine $C_{6}H_{15}NO_{3}$ 102-71-6NBNBppm425 Triethylamine (2-Methyl-2-propanatine) $C_{6}H_{15}NO_{3}$ 102-71-6NBNBppm426 Trinethylamine $C_{6}H_{15}NO_{3}$ 102-71-6NBNBppm425 Triethylamine $C_{2}H_{3}Cl_{3}$ 71-55-3NBNBppm426 Trinethylamine $C_{2}H_{3}Cl_{3}$ 71-55-6NBNBppm427 1,1,1-Trichloroethane $C_{2}H_{3}Cl_{3}$ 71-55-6NBNBppm428 1,1,2,2-Tetrachloroethane $C_{2}H_{3}Cl_{3}$ 79-06-52001000ppm429 1,1,2-Trichloroethane $C_{2}H_{3}Cl_{3}$ 79-00-52001000ppm	15 Piperazine (Diethylenediamine; Hexahydropyrazine)	$C_4H_{10}N_2$	110-85-0	NB	NB	ppm	
417 Propanenitrile C ₃ H ₃ N 107-12-0 NB NB ppm 418 Propylamine (1-Aminopropane) C ₃ H ₉ N 107-10-8 200 1000 ppm 419 Pyridine C ₃ H ₉ N 110-86-1 100 500 ppm 420 Pyrolidine (Azacyclopentane) C ₄ H ₉ N 123-75-1 200 1000 ppm 421 tert-Butylamine (2-Methyl-2-propanamine) C ₄ H ₁ N 75-64-9 NB NB ppm 422 Tetraethylurea (1,1,3,3-Tetraethylurea) C ₉ H ₂ N ₂ O 1187-03-7 NB NB ppm 423 Tetramethylurea (1,1,3,3-Tetraethylurea) C ₉ H ₁ N ₂ O 632-224 NB NB ppm 424 Triethanolamine C ₉ H ₁ N ₂ O 632-224 NB NB ppm 424 Triethanolamine C ₉ H ₁ N ₂ O 632-224 NB NB ppm 425 Triethylamine C ₉ H ₁ N ₂ O 632-224 NB NB ppm 425 Triethylamine C ₉ H ₁ N ₂ O 632-224 NB NB ppm 425 Triethylamine C ₉ H ₁ N ₂ N ₂ O 102-71-6 NB NB ppm <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>							
418 Propylamine (1-Aminopropane) C ₃ H ₉ N 107-10-8 200 1000 ppm 419 Pyridine C ₅ H ₃ N 110-86-1 100 500 ppm 420 Pyrrolidine (Azacyclopentane) C ₄ H ₉ N 123-75-1 200 1000 ppm 421 tert-Butylamine (2-Methyl-2-propanamine) C ₄ H ₉ N 123-75-1 200 1000 ppm 422 Tetraethylurea (1,1,3,3-Tetraethylurea) C ₉ H ₂₀ N ₂ O 1187-03-7 NB NB ppm 423 Tetramethylurea (1,1,3,3-Tetraethylurea) C ₉ H ₁₀ N ₂ O 632-22-4 NB NB ppm 424 Triethanolamine C ₉ H ₁₀ N ₂ O 632-22-4 NB NB ppm 424 Triethanolamine C ₉ H ₁₀ N ₂ O 632-22-4 NB NB ppm 425 Triethylamine (1,1,3,3-Tetramethylurea) C ₉ H ₁₀ N ₂ O 632-22-4 NB NB ppm 426 Triethylamine C ₉ H ₁₀ N ₃ 102-71-6 NB NB ppm 425 Triethylamine C ₉ H ₁₀ N 71-55-6 NB NB							
419Pyridine C_3H_5N 110-86-1100500ppm420Pyrrolidine (Azacyclopentane) C_4H_9N 123-75-12001000ppm421tert-Butylamine (2-Methyl-2-propanamine) $C_4H_{11}N$ 75-64-9NBNBppm422Tetraethylurea (1,1,3,3-Tetraethylurea) $C_9H_{20}N_2O$ 1187-03-7NBNBppm423Tetramethylurea (1,1,3,3-Tetraethylurea) $C_9H_{20}N_2O$ 632-22-4NBNBppm423Tetramethylurea (1,1,3,3-Tetraethylurea) $C_9H_1N_2O$ 632-22-4NBNBppm424Triethanolamine $C_6H_1_5N_3$ 102-71-6NBNBppm425Triethylamine $C_6H_{15}N$ 121-44-8NBNBppm426Trimethylamine C_8H_9N 75-50-3NBNBppm426Trimethylamine $C_2H_3Cl_3$ 71-55-6NBNBppmArrow of the compounds (see also freons)4271,1-Trichloroethane $C_2H_2Cl_4$ 79-34-52001000ppm4291,1,2-Trichloroethane $C_2H_3Cl_3$ 79-00-52001000ppm	-						
420 Pyrrolidine (Azacyclopentane) C_4H_9N 123-75-1 200 1000 ppm 421 tert-Butylamine (2-Methyl-2-propanamine) $C_4H_{11}N$ 75-64-9 NB NB ppm 422 Tetraethylurea (1,1,3,3-Tetraethylurea) $C_9H_{20}N_2O$ 1187-03-7 NB NB ppm 423 Tetramethylurea (1,1,3,3-Tetramethylurea) $C_9H_{20}N_2O$ 632-22-4 NB NB ppm 424 Triethanolamine $C_8H_{18}N_0$ 102-71-6 NB NB ppm 425 Triethylamine (See also freons) $C_8H_{18}N_0$ 102-71-6 NB NB ppm 426 Trimethylamine $C_8H_{18}N_0$ 102-71-6 NB NB ppm 425 Triethylamine $C_6H_{18}N_0$ 102-71-6 NB NB ppm 426 Trimethylamine $C_8H_9N_0$ 121-44-8 NB NB ppm 426 Trimethylamine $C_2H_2Cl_3$ 71-55-6 NB NB ppm 427 1,1-17-richloroethane $C_2H_2Cl_4$ 79-34-5 200 1000							
421 tert-Butylamine (2-Methyl-2-propanamine) C ₄ H ₁₁ N 75-64-9 NB NB Pm pm Pm 422 Tetraethylurea (1,1,3,3-Tetraethylurea) C ₉ H ₂₀ N ₂ O 1187-03-7 NB NB Pm pm 423 Tetramethylurea (1,1,3,3-Tetraethylurea) C ₉ H ₁₂ N ₂ O 632-22-4 NB NB Pm pm 424 Triethanolamine C ₆ H ₁₅ N C ₁ C ₁₀ Cmpounds (see also freons) Dm Only non-instrument specific references. Chemical not C ₁ H ₂ C ₁₄ T ₁ A ₂ -2-Tetrachloroethane C ₂ H ₂ C ₁₄ C ₁ H ₂ C ₁₃ T ¹ -55-6 NB Pm Only non-instrument specific references. Chemical not C ₂ H ₂ C ₁₄ T ₁ A ₂ -2-Tetrachloroethane C ₂ H ₂ C ₁₃ T ₂ -0-0-5 200 1000 pm	-						
422 Tetraethylurea (1,1,3,3-Tetraethylurea) C ₉ H ₂₀ N ₂ O 1187-03-7 NB NB pm 423 Tetramethylurea (1,1,3,3-Tetramethylurea) C ₉ H ₂₀ N ₂ O 632-22-4 NB NB ppm 424 Triethanolamine C ₆ H ₁₅ NO ₃ 102-71-6 NB NB ppm 425 Triethylamine C ₆ H ₁₅ NO ₃ 102-71-6 NB NB ppm 425 Triethylamine C ₆ H ₁₅ N 121-44-8 NB NB ppm 426 Trimethylamine C ₃ H ₉ N 75-50-3 NB NB ppm 426 Trimethylamine C ₃ H ₉ Cl ₃ 71-55-6 NB NB ppm 427 1,1-17ichloroethane C ₂ H ₂ Cl ₄ 79-34-5 200 1000 ppm 428 1,2,2-Tetrachloroethane C ₂ H ₃ Cl ₃ 79-00-5 200 1000 ppm							
423 Tetramethylurea (1,1,3,3-Tetramethylurea) C ₅ H ₁₂ N ₂ O 632-22-4 NB NB ppm 424 Triethanolamine C ₆ H ₁₅ NO ₃ 102-71-6 NB NB ppm 425 Triethylamine C ₆ H ₁₅ NO 121-44-8 NB NB ppm 425 Triethylamine C ₃ H ₉ N 75-50-3 NB NB ppm 426 Trimethylamine C ₃ H ₉ N 75-50-3 NB NB ppm 426 Trimethylamine C ₃ H ₉ Cl ₂ 71-55-6 NB NB ppm 427 1.1,1-Trichloroethane C ₂ H ₂ Cl ₄ 79-34-5 200 1000 ppm 428 1.1,2-2:Tetrachloroethane C ₂ H ₃ Cl ₃ 79-00-5 200 1000 ppm							
424 Triethanolamine C ₆ H ₁₅ NO ₃ 102-71-6 NB Ppm 425 Triethylamine C ₆ H ₁₅ N 121-44-8 NB Ppm 426 Trimethylamine C ₃ H ₉ N 75-50-3 NB NB ppm Chloro compounds (see also freons) 427 1.1.1-Trichloroethane C ₂ H ₃ Cl ₃ 71-55-6 NB NB ppm Only non-instrument specific references. Chemical not 428 1.1.2.2-Tetrachloroethane C ₂ H ₃ Cl ₃ 79-00-5 200 1000 ppm							
425 Triethylamine C ₆ H ₁₅ N 121-44-8 NB NB ppm 426 Trimethylamine C ₃ H ₃ N 75-50-3 NB NB ppm Chloro compounds (see also freons) 427 1,1,1-Trichloroethane C ₂ H ₃ Cl ₃ 71-55-6 NB NB ppm Only non-instrument specific references. Chemical not 428 1,1,2,2-Tetrachloroethane C ₂ H ₂ Cl ₄ 79-34-5 200 1000 ppm 429 1,1,2-Trichloroethane C ₂ H ₃ Cl ₃ 79-00-5 200 1000 ppm							
426 Trimethylamine C ₃ H ₉ N 75-50-3 NB NB ppm Chloro compounds (see also freons) 427 1,1,1-Trichloroethane C ₂ H ₃ Cl ₃ 71-55-6 NB NB ppm Only non-instrument specific references. Chemical not table 24.2 428 1,1,2,2-Tetrachloroethane C ₂ H ₂ Cl ₄ 79-34-5 200 1000 ppm 429 1,1,2-Trichloroethane C ₂ H ₃ Cl ₃ 79-00-5 200 1000 ppm					NB	ppm	
Chloro compounds (see also freons) View Only non-instrument specific references. Chemical not 427 1,1,1-Trichloroethane C2H3Cl3 71-55-6 NB NB ppm Only non-instrument specific references. Chemical not 428 1,1,2,2-Tetrachloroethane C2H2Cl4 79-34-5 200 1000 ppm 429 1,1,2-Trichloroethane C2H3Cl3 79-00-5 200 1000 ppm	125 Triethylamine	C ₆ H ₁₅ N	121-44-8	NB	NB	ppm	
427 1,1,1-Trichloroethane C2H3Cl3 71-55-6 NB NB ppm Only non-instrument specific references. Chemical not 428 1,1,2-Tetrachloroethane C2H2Cl4 79-34-5 200 1000 ppm 429 1,1,2-Trichloroethane C2H3Cl3 79-00-5 200 1000 ppm	126 Trimethylamine	C ₃ H ₉ N	75-50-3	NB	NB	ppm	
428 1,1,2,2-Tetrachloroethane C2H2Cl4 79-34-5 200 1000 ppm 429 1,1,2-Trichloroethane C2H3Cl3 79-00-5 200 1000 ppm	Chloro compounds (see also freons)						
429 1,1,2-Trichloroethane C ₂ H ₃ Cl ₃ 79-00-5 200 1000 ppm	27 1,1,1-Trichloroethane	C ₂ H ₃ Cl ₃	71-55-6	NB	NB	ppm	Only non-instrument specific references. Chemical not available.
					1000	ppm	
430 1,1-Dichloroethane C ₂ H ₄ Cl ₂ 75-34-3 200 1000 ppm	129 1,1,2-Trichloroethane	C ₂ H ₃ Cl ₃	79-00-5	200	1000	ppm	
	430 1,1-Dichloroethane		75-34-3	200	1000	ppm	
431 1,2,3-Trichloropropane C ₃ H ₅ Cl ₃ 96-18-4 200 1000 ppm							
432 1,2,4-Trichlorobenzene C ₆ H ₃ Cl ₃ 120-82-1 NB NB ppm							
433 1,2-Dichlorobenzene (o-Dichlorobenzene) $C_6H_4Cl_2$ 95-50-1 200 1000 ppm							
435 1,2-Dichloropropane (Propylene dichloride) $C_3H_6Cl_2$ 78-87-5 200 1000 ppm							
436 1,3-Dichloro-2-propanol C ₃ H ₆ Cl ₂ O 96-23-1 NB NB ppm	i,3-uicnioro-2-propanoi الراقة						
		C ₆ H ₄ Cl ₂	541-73-1	ND	NB	ppm	
438 1,3-Dichloropropane C ₃ H ₆ Cl ₂ 142-28-9 NB NB ppm	437 1,3-Dichlorobenzene						

439 1,4-Dichlorobenzene (p -Dichlorobenzene)	C ₆ H ₄ Cl ₂	106-46-7	NB	NB	ppm	
440 2,3-Dichloro-1-propanol	C ₃ H ₆ Cl ₂ O	616-23-9	NB	NB	ppm	
441 2,5-Dichlorophenol	C ₆ H ₄ Cl ₂ O	583-78-8	NB	NB	ppm	
442 2-Chloroethanol	C ₂ H ₅ CIO	107-07-3	NB	NB	ppm	
443 3-Chloro-2-methyl-1-propene (Methallyl chloride)	C ₄ H ₇ Cl	563-47-3	NB	NB	ppm	
444 3-Chloropropionyl chloride (3-Chloropropionic acid chloride; 3-Chlo	ro C ₃ H ₄ Cl ₂ O	625-36-5	NB	NB	ppm	
445 3-Chlorotoluene (1-Chloro-3-methylbenzene)	C ₇ H ₇ Cl	108-41-8	200	1000	ppm	
446 Acetyl chloride (Acetic chloride)	C ₂ H ₃ CIO	75-36-5	200	1000	ppm	
447 Allyl chloride (3-chloro-1-propene)	C ₃ H ₅ Cl	107-05-1	200	1000	ppm	
448 Benzyl chloride (a -Chlorotoluene)	C ₇ H ₇ Cl	100-44-7	200	1000	ppm	
449 Bis(trichloromethyl) carbonate (Triphosgene)	C ₃ Cl ₆ O ₃	32315-10-9	NB	NB	ppm	
450 Butyl chloroformate (Butyl chlorocarbonate)	C ₅ H ₉ ClO ₂	592-34-7	NB	NB	ppm	
451 Carbon tetrachloride (Freon 10)	CCI4	56-23-5	NB	NB		
451 Californiae (Fleath 10) 452 Chloroacetyl chloride	$C_2H_2CI_2O$	79-04-9	NB	NB	ppm	
-					ppm	
453 Chlorobenzene (Phenyl chloride)	C ₆ H ₅ Cl	108-90-7	200	1000	ppm	
454 Chloroform (Trichloromethane; Freon 20)	CHCl ₃	67-66-3	200	1000	ppm	
455 Chloromethyl chloroformate	C ₂ H ₂ Cl ₂ O ₂	22128-62-7	NB	NB	ppm	
456 cis-1,2-Dichloroethene	C ₂ H ₂ Cl ₂	156-59-2	200	1000	ppm	
457 Dichloroacetyl chloride	C ₂ HCl ₃ O	79-36-7	NB	NB	ppm	
458 Dichloromethane (Methylene chloride; Freon 30)	CH ₂ Cl ₂	75-09-2	200	1000	ppm	
459 Dimethylcarbamyl chloride (Dimethyl carbamic chloride)	C ₃ H ₆ CINO	79-44-7	NB	NB	ppm	
460 Diphosgene	C2CI4O2	503-38-8	NB	NB	ppm	
461 Epichlorohydrin (Chloromethyloxirane)	C ₃ H ₅ CIO	106-89-8	NB	NB	ppm	
462 Ethyl chloride	C ₂ H ₅ Cl	75-00-3	NB	NB	ppm	
463 Ethyl chloroformate (Carbonochloridic acid ethyl ester; Cathyl chlo		541-41-3	NB	NB	ppm	
464 Hexachloro-1,3-butadiene	C ₄ Cl ₆	87-68-3	200	1000	ppm	
465 Methyl chloride (Freon 40)	CH ₃ CI	74-87-3	NB	NB	ppm	
466 Methyl chloroacetate	C ₃ H ₅ ClO ₂	96-34-4	NB	NB	ppm	
467 Methyl chloroformate (Methyl chlorocarbonate)	C ₂ H ₃ ClO ₂	79-22-1	NB	NB	ppm	
468 Pentachloroethane	C ₂ HCl ₅	76-01-7	NB	NB	ppm	
469 Pentachlorophenol		87-86-5	NB	NB	ppm	
470 Phosgene	COCl ₂	75-44-5	NB	NB	ppm	
471 Propyl chlorocarbonate (n-Propyl chloroformate)	C ₄ H ₇ ClO ₂	109-61-5	NB	NB	ppm	
472 Tetrachloroethylene	C ₂ Cl ₄	127-18-4	200	1000	ppm	
473 trans-1,2-Dichloroethene	C ₂ H ₂ Cl ₂	156-60-5	200	1000	ppm	
474 Trichloroacetyl chloride	C ₂ Cl ₄ O	76-02-8	NB	NB	ppm	
474 Trichloroacetyl chloride475 Trichloroethylene (Trichlorethene)	C ₂ Cl ₄ O C ₂ HCl ₃	76-02-8 79-01-6	NB 200	NB 1000	ppm ppm	
-						
475 Trichloroethylene (Trichlorethene)	C ₂ HCl ₃	79-01-6	200	1000	ppm	
475 Trichloroethylene (Trichlorethene)476 Vinyl chloride (Chloroethene)	C ₂ HCl ₃ C ₂ H ₃ Cl C ₂ H ₂ Cl ₂	79-01-6 75-01-4	200 NB	1000 NB	ppm ppm	
475 Trichloroethylene (Trichlorethene)476 Vinyl chloride (Chloroethene)477 Vinylidene chloride (1,1-Dichloroethene)	C ₂ HCl ₃ C ₂ H ₃ Cl	79-01-6 75-01-4	200 NB	1000 NB	ppm ppm	
 475 Trichloroethylene (Trichlorethene) 476 Vinyl chloride (Chloroethene) 477 Vinylidene chloride (1,1-Dichloroethene) Fluoro compounds (see also freons) 	C ₂ HCl ₃ C ₂ H ₃ Cl C ₂ H ₂ Cl ₂	79-01-6 75-01-4 75-35-4	200 NB 200	1000 NB 1000	ppm ppm ppm	
 475 Trichloroethylene (Trichlorethene) 476 Vinyl chloride (Chloroethene) 477 Vinylidene chloride (1,1-Dichloroethene) Fluoro compounds (see also freons) 478 (1E)-1,3,3,3-Tetrafluoro-1-propene (HFO-1234ze) 	C_2HCI_3 C_2H_3CI $C_2H_2CI_2$ $C_3H_2F_4$	79-01-6 75-01-4 75-35-4 29118-24-9	200 NB 200 NB	1000 NB 1000 NB	ppm ppm ppm	
 475 Trichloroethylene (Trichlorethene) 476 Vinyl chloride (Chloroethene) 477 Vinylidene chloride (1,1-Dichloroethene) Fluoro compounds (see also freons) 478 (1E)-1,3,3,3-Tetrafluoro-1-propene (HFO-1234ze) 479 1,1,1,2,2,3,5,5-Nonafluoropentane 	$C_{2}HCI_{3}$ $C_{2}H_{3}CI$ $C_{2}H_{2}CI_{2}$ $C_{3}H_{2}F_{4}$ $C_{5}H_{3}F_{9}$	79-01-6 75-01-4 75-35-4 29118-24-9 141993-31-9	200 NB 200 NB NB	1000 NB 1000 NB NB	ppm ppm ppm ppm ppm	
 475 Trichloroethylene (Trichlorethene) 476 Vinyl chloride (Chloroethene) 477 Vinylidene chloride (1,1-Dichloroethene) Fluoro compounds (see also freons) 478 (1E)-1,3,3,3-Tetrafluoro-1-propene (HFO-1234ze) 479 1,1,1,2,2,3,5,5-Nonafluoropentane 480 1,1,1,2,3,4,4,5,5,5-Decafluoropentane 	$\begin{array}{c} C_{2}HCI_{3} \\ C_{2}H_{3}CI \\ C_{2}H_{2}CI_{2} \end{array} \\ \\ \hline \\ C_{3}H_{2}F_{4} \\ C_{5}H_{3}F_{9} \\ C_{5}H_{2}F_{10} \end{array}$	79-01-6 75-01-4 75-35-4 29118-24-9 141993-31-9 138495-42-8	200 NB 200 NB NB NB	1000 NB 1000 NB NB NB	ppm ppm ppm ppm ppm ppm	
 475 Trichloroethylene (Trichlorethene) 476 Vinyl chloride (Chloroethene) 477 Vinylidene chloride (1,1-Dichloroethene) 478 (1E)-1,3,3,3-Tetrafluoro-1-propene (HFO-1234ze) 479 1,1,1,2,2,3,5,5-FNonafluoropentane 480 1,1,1,2,3,4,4,5,5,5-Decafluoropentane 481 2,3,3-Tetrafluoropropene (HFO-1234yf) 	$\begin{array}{c} C_{2}HCI_{3} \\ C_{2}H_{3}CI \\ C_{2}H_{2}CI_{2} \end{array} \\ \\ \hline \\ C_{3}H_{2}F_{4} \\ C_{5}H_{3}F_{9} \\ C_{5}H_{2}F_{10} \\ C_{3}H_{2}F_{4} \end{array}$	79-01-6 75-01-4 75-35-4 29118-24-9 141993-31-9 138495-42-8 754-12-1	200 NB 200 NB NB NB NB	1000 NB 1000 NB NB NB NB	ppm ppm ppm ppm ppm ppm ppm	
 475 Trichloroethylene (Trichlorethene) 476 Vinyl chloride (Chloroethene) 477 Vinylidene chloride (1,1-Dichloroethene) Fluoro compounds (see also freons) 478 (1E)-1,3,3,3-Tetrafiluoro-1-propene (HFO-1234ze) 479 1,1,1,2,2,3,5,5-Decafiluoropentane 480 1,1,2,3,4,4,5,5,5-Decafiluoropentane 481 2,3,3,3-Tetrafiluoropropene (HFO-1234yf) 482 2-Fluorotoluene (1-Fluoro-2-methylbenzene) 483 4-Ethoxy-1,1,1-trifluoro-3-buten-2-one 	$\begin{array}{c} C_{2}HCI_{3} \\ C_{2}H_{3}CI \\ C_{2}H_{2}CI_{2} \end{array} \\ \\ \\ \\ C_{3}H_{2}F_{4} \\ C_{3}H_{3}F_{9} \\ C_{3}H_{2}F_{4} \\ C_{3}H_{2}F_{4} \\ C_{3}H_{2}F_{4} \\ C_{7}H_{7}F \\ C_{6}H_{7}F_{3}O_{2} \end{array}$	79-01-6 75-01-4 75-35-4 29118-24-9 141993-31-9 138495-42-8 754-12-1 95-52-3	200 NB 200 NB NB NB NB NB NB	1000 NB 1000 NB NB NB NB NB NB	ppm ppm ppm ppm ppm ppm ppm ppm	12/2019: Availability uncertain. Non-instrument specific references en
 475 Trichloroethylene (Trichlorethene) 476 Vinyl chloride (Chloroethene) 477 Vinylidene chloride (1,1-Dichloroethene) Fluoro compounds (see also freons) 478 (1E)-1,3,3,3-Tetrafluoro-1-propene (HFO-1234ze) 479 1,1,1,2,3,5,5,5-Nonafluoropentane 481 2,3,3,3-Tetrafluoropene (HFO-1234yf) 482 2-Fluorotoluene (1-Fluoro-2-methylbenzene) 483 4-Ethoxy-1,1,1-trifluoro-3-buten-2-one 484 Carbonyl difluoride 	$\begin{array}{c} C_{2}HCI_{3} \\ C_{2}H_{3}CI \\ C_{2}H_{2}CI_{2} \end{array} \\ \\ \hline \\ C_{3}H_{2}F_{4} \\ C_{3}H_{3}F_{9} \\ C_{3}H_{2}F_{10} \\ C_{3}H_{2}F_{10} \\ C_{3}H_{2}F_{4} \\ C_{7}H_{7}F \\ C_{6}H_{7}F_{3}O_{2} \\ COF_{2} \end{array}$	79-01-6 75-01-4 75-35-4 29118-24-9 141993-31-9 138495-42-8 754-12-1 95-52-3 17129-06-5 353-50-4	200 NB 200 NB NB NB NB NB NB NB	1000 NB 1000 NB NB NB NB NB NB NB	ppm ppm ppm ppm ppm ppm ppm ppm ppm	12/2019: Availability uncertain. Non-instrument specific references en
 475 Trichloroethylene (Trichlorethene) 476 Vinyl chloride (Chloroethene) 477 Vinylidene chloride (1,1-Dichloroethene) 478 (1E)-1,3,3,3-Tetrafluoro-1-propene (HFO-1234ze) 478 (1E)-1,3,3,3-Tetrafluoropentane 480 1,1,1,2,3,4,4,5,5,5-Decafluoropentane 481 2,3,3-Tetrafluoropene (HFO-1234yf) 482 2-Fluorotoluene (1-Fluoro-2-methylbenzene) 483 4-Ethoxy-1,1,1:trifluoro-3-buten-2-one 484 Carbonyl difluoride 485 Desflurane (1,2,2)-tetrafluoroethyl difluoromethyl ether) 	$\begin{array}{c} C_{2}HCI_{3}\\ C_{2}H_{3}CI\\ C_{2}H_{2}CI_{2}\\ \end{array}\\ \\ \hline \\ C_{3}H_{2}F_{4}\\ C_{3}H_{2}F_{4}\\ C_{3}H_{2}F_{10}\\ C_{3}H_{2}F_{4}\\ C_{3}H_{2}F_{4}\\ C_{5}H_{7}F\\ C_{6}H_{7}F_{3}O_{2}\\ COF_{2}\\ C_{3}H_{2}F_{6}O\\ \end{array}$	79-01-6 75-01-4 75-35-4 29118-24-9 141993-31-9 138495-42-8 754-12-1 95-52-3 17129-06-5 353-50-4 57041-67-5	200 NB 200 NB NB NB NB NB NB NB NB	1000 NB 1000 NB NB NB NB NB NB NB NB	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	12/2019: Availability uncertain. Non-instrument specific references end
 475 Trichloroethylene (Trichlorethene) 476 Vinyl chloride (Chloroethene) 477 Vinylidene chloride (1,1-Dichloroethene) 478 (1E)-1,3,3,3-Tetrafluoro-1-propene (HFO-1234ze) 479 1,1,1,2,2,3,5,5-Sto-Nanfluoropentane 480 1,1,2,3,4,4,5,5-Decafluoropentane 481 2,3,3-Tetrafluoro-1-propene (HFO-1234yf) 482 2-Fluorotoluene (1-Fluoro-2-methylbenzene) 483 4-Ethoxy-1,1,1+trifluoro-3-buten-2-one 484 Carbonyl difluoride 485 Desflurane (1,2,2,2-tetrafluoroethyl difluoromethyl ether) 486 Ethyl fluoride (Fluoroethane, HFC-161) 	$\begin{array}{c} C_{2}HCI_{3} \\ C_{2}H_{3}CI \\ C_{2}H_{2}CI_{2} \end{array} \\ \\ \hline \\ C_{3}H_{2}F_{4} \\ C_{3}H_{3}F_{9} \\ C_{3}H_{2}F_{4} \\ C_{3}H_{2}F_{4} \\ C_{7}H_{7}F \\ C_{6}H_{7}F_{3}O_{2} \\ C_{0}F_{2} \\ C_{3}H_{2}F_{6}O \\ C_{2}H_{5}F \end{array}$	79-01-6 75-01-4 75-35-4 29118-24-9 141993-31-9 138495-42-8 754-12-1 9-5-2-3 17129-06-5 353-50-4 57041-67-5 353-36-6	200 NB 200 NB NB NB NB NB NB NB NB NB NB	1000 NB 1000 NB NB NB NB NB NB NB NB NB	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	12/2019: Availability uncertain. Non-instrument specific references end
 475 Trichloroethylene (Trichlorethene) 476 Vinyl chloride (Chloroethene) 477 Vinylidene chloride (1,1-Dichloroethene) 478 (1E)-1,3,3,3-Tetrafluoro-1-propene (HFO-1234ze) 479 1,1,1,2,3,5,5-5-Nonafluoropentane 480 1,1,2,3,4,4,5,5-5-Decafluoropentane 481 2,3,3-Tetrafluoro-1-propene (HFO-1234yf) 482 2-Fluorotoluene (1-Fluoro-2-methylbenzene) 483 4-Ethoxy-1,1,1+trifluoro-3-buten-2-one 484 Carbonyl difluoride 485 Desflurane (1,2,2,2-tetrafluoroethyl difluoromethyl ether) 486 Ethyl fluoride (Fluoroethane, HFC-161) 487 Ethyl trifluoroacetate 	$\begin{array}{c} C_{2}HCI_{3} \\ C_{2}H_{3}CI \\ C_{2}H_{2}CI_{2} \end{array} \\ \\ \hline \\ C_{3}H_{2}F_{4} \\ C_{3}H_{3}F_{9} \\ C_{3}H_{2}F_{4} \\ C_{3}H_{2}F_{4} \\ C_{7}H_{7}F \\ C_{9}H_{7}F \\ C_{9}H_{7}F \\ C_{9}H_{7}F \\ C_{9}H_{2}F_{6}O \\ C_{2}H_{3}F \\ C_{4}H_{5}F_{3}O_{2} \end{array} \\ \end{array}$	79-01-6 75-01-4 75-35-4 29118-24-9 141993-31-9 138495-42-8 754-12-1 9-5-52-3 17129-06-5 353-50-4 57041-67-5 353-36-6 383-63-1	200 NB 200 NB NB NB NB NB NB NB NB NB NB NB	1000 NB 1000 NB NB NB NB NB NB NB NB NB NB	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	12/2019: Availability uncertain. Non-instrument specific references en
 475 Trichloroethylene (Trichlorethene) 476 Vinyl chloride (Chloroethene) 477 Vinylidene chloride (1,1-Dichloroethene) 478 (1E)-1,3,3,3-Tetrafluoro-1-propene (HFO-1234ze) 479 1,1,2,2,3,5,5-Nonafluoropentane 480 1,1,1,2,3,4,5,5,5-Decafluoropentane 481 2,3,3,3-Tetrafluoropropene (HFO-1234yf) 482 2-Fluorotoluene (1-Fluoro-2-methylbenzene) 483 4-Ethoxy-1,1,1-tirfluoro-3-buten-2-one 484 Carbonyl difluoride 485 Desflurane (1,2,2,2-tetrafluoroethyl difluoromethyl ether) 486 Ethyl fluoride (Fluoroethane, HFC-161) 487 Ethyl trifluoroacetate 488 Fluorobenzene 	$\begin{array}{c} C_{2}HCI_{3}\\ C_{2}H_{3}CI\\ C_{2}H_{3}CI\\ C_{3}H_{2}F_{4}\\ C_{3}H_{2}F_{4}\\ C_{3}H_{2}F_{5}\\ C_{3}H_{2}F_{4}\\ C_{3}H_{2}F_{4}\\ C_{3}H_{2}F_{4}\\ C_{3}H_{2}F_{4}\\ C_{3}H_{2}F_{4}\\ C_{3}H_{2}F_{6}O\\ C_{3}H_{2}F_{6}O\\ C_{3}H_{2}F_{6}O\\ C_{3}H_{2}F_{6}O\\ C_{4}H_{5}F\\ C_{4}H_{5}F_{3}O_{2}\\ C_{6}H_{5}F\end{array}$	79-01-6 75-01-4 75-35-4 29118-24-9 141993-31-9 138495-42-8 754-12-1 95-52-3 17129-06-5 353-50-4 57041-67-5 353-36-6 383-63-1 462-06-6	200 NB 200 NB NB NB NB NB NB NB NB NB NB NB	1000 NB 1000 NB NB NB NB NB NB NB NB NB NB NB NB NB	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	12/2019: Availability uncertain. Non-instrument specific references en
 475 Trichloroethylene (Trichlorethene) 476 Vinyl chloride (Chloroethene) 477 Vinylidene chloride (1,1-Dichloroethene) 478 (1E)-1,3,3,3-Tetrafluoro-1-propene (HFO-1234ze) 479 1,1,2,2,3,5,5-Nonafluoropentane 480 1,1,1,2,3,4,5,5,5-Decafluoropentane 481 2,3,3,3-Tetrafluoropropene (HFO-1234yf) 482 2-Fluorotoluene (1-Fluoro-2-methylbenzene) 483 4-Ethoxy-1,1,1-trifluoro-3-buten-2-one 484 Carbonyl difluoride 485 Desflurane (1,2,2,2-tetrafluoroethyl difluoromethyl ether) 486 Ethyl fluoride (Fluoroethane, HFC-161) 487 Ethyl trifluoroacetate 488 Fluorobenzene 489 Hexafluoropropylene (Perfluoropropene) 	$\begin{array}{c} C_{2}HCI_{3} \\ C_{2}H_{3}CI \\ C_{2}H_{2}CI_{2} \end{array} \\ \\ \\ \\ \\ C_{3}H_{2}F_{4} \\ C_{3}H_{3}F_{9} \\ C_{3}H_{2}F_{4} \\ C_{7}H_{7}F \\ C_{6}H_{7}F_{3}O_{2} \\ COF_{2} \\ C_{3}H_{2}F_{6}O \\ C_{2}H_{3}F \\ C_{4}H_{5}F_{3}O_{2} \\ C_{6}H_{5}F \\ C_{3}F_{6} \end{array} \\ \end{array}$	79-01-6 75-01-4 75-35-4 29118-24-9 141993-31-9 138495-42-8 754-12-1 95-52-3 17129-06-5 353-50-4 57041-67-5 353-36-6 383-63-1 462-06-6 116-15-4	200 NB 200 NB NB NB NB NB NB NB NB NB NB NB NB NB	1000 NB NB NB NB NB NB NB NB NB NB NB NB	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	12/2019: Availability uncertain. Non-instrument specific references en
 475 Trichloroethylene (Trichlorethene) 476 Vinyl chloride (Chloroethene) 477 Vinylidene chloride (1,1-Dichloroethene) 478 (1E)-1,3,3,3-Tetrafluoro-1-propene (HFO-1234ze) 479 1,1,2,2,3,5,5-Decafluoropentane 480 1,1,1,2,3,4,4,5,5-Decafluoropentane 481 2,3,3,3-Tetrafluoro-1-propene (HFO-1234yf) 482 2-Fluorotoluene (1-Fluoro-2-methylbenzene) 483 4-Ethoxy-1,1,1-trifluoro-3-buten-2-one 484 Carbonyl difluoride 485 Desflurane (1,2,2,2-tetrafluoroethyl difluoromethyl ether) 486 Ethyl fluoride (Fluoroethane, HFC-161) 487 Ethyl trifluoroacetate 488 Hexafluoropropylene (Perfluoropropene) 490 Methyl fluoride (Fluoromethane, Freon 41) 	$\begin{array}{c} C_{2}HCI_{3} \\ C_{2}H_{3}CI \\ C_{3}H_{2}CI_{2} \end{array} \\ \\ \\ \\ C_{3}H_{2}F_{4} \\ C_{3}H_{3}F_{9} \\ C_{5}H_{2}F_{10} \\ C_{5}H_{2}F_{10} \\ C_{5}H_{2}F_{4} \\ C_{7}H_{7}F \\ C_{6}H_{7}F_{3}O_{2} \\ COF_{2} \\ C_{3}H_{2}F_{6}O \\ C_{2}H_{3}F \\ C_{4}H_{5}F_{3}O_{2} \\ C_{4}H_{5}F \\ C_{3}F_{6} \\ C_{4}H_{5}F \\ C_{3}F_{6} \\ CH_{3}F \end{array}$	79-01-6 75-01-4 75-35-4 29118-24-9 141993-31-9 138495-42-8 754-12-1 95-52-3 17129-06-5 353-30-4 57041-67-5 353-36-6 383-63-1 462-06-6 116-15-4 593-53-3	200 NB 200 NB NB NB NB NB NB NB NB NB NB NB NB NB	1000 NB NB NB NB NB NB NB NB NB NB NB NB NB	ppm ppm ppm ppm ppm ppm ppm ppm ppm ppm	12/2019: Availability uncertain. Non-instrument specific references en
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 475 Trichloroethylene (Trichlorethene) 476 Vinyl chloride (Chloroethene) 477 Vinylidene chloride (1,1-Dichloroethene) 478 (1E)-1,3,3,3-Tetrafluoro-1-propene (HFO-1234ze) 479 1,1,2,2,3,5,5,5-Decafluoropentane 480 1,1,2,3,4,5,5,5-Decafluoropentane 481 2,3,3,3-Tetrafluoro-1-gene (HFO-1234yf) 482 2-Fluorotoluene (1-Fluoro-2-methylbenzene) 483 4-Ethoxy-1,1,1-trifluoro-3-buten-2-one 484 Carbonyl difluoride 485 Desflurane (1,2,2,2-tetrafluoropthyl difluoromethyl ether) 486 Ethyl fluoride (Fluoroethane, HFC-161) 487 Ethyl trifluoroacetate 488 Fluorobenzene 489 Hexafluoroproplene (Perfluoropropene) 490 Methyl fluoride (Fluoromethane, Freon 41) 491 Octafluoro2-methylcyclohexane 492 Perfluoro1,2,dimethylcyclohexane 493 Perfluoro1-2,dimethylcyclohexane 494 Perfluoro2-methyllentene 495 Perfluoroheptane 496 Perfluoroheptane 497 Sevoflurane [2,2,2-trifluoro-1-(trifluoromethyl) ether] 498 Tetrafluoroethylene (Perfluorop-pene) 499 Tetrafluoroethylene (Perfluoro-2-methyl) ether] 499 Tetrafluoroethylene (Perfluoro-2-methyl) ether] 491 Tetrafluoroethylene (Perfluoro-2-methyl) ether] 492 Perfluoroheptane 493 Perfluoroheptane 494 Perfluoroethylene (Perfluoro-2-methyl) ethyl ether] 495 Perfluoroheptane 496 Perfluoronethylene (Perfluoro-2-methyl) ethyl ether] 497 Sevoflurane [2,2,2-trifluoro-1-(trifluoromethyl) ethyl ether] 498 Tetrafluoroethylene (Perfluoroethylene) 499 Tetrafluoroethylene (Perfluoroethylene)<td>$\begin{array}{c} C_2HCl_3\\ C_2H_3Cl\\ C_2H_3Cl\\ C_3H_2F_4\\ C_3H_3F_9\\ C_3H_2F_4\\ C_3H_3F_9\\ C_3H_2F_4\\ C_7H_7F\\ C_6H_7F_3O_2\\ COF_2\\ C_3H_2F_6O\\ C_2H_5F\\ C_4H_5F_3O_2\\ C_6H_3F\\ C_5F_6\\ C_4H_5F\\ C_5F_6\\ C_6F_{16}\\ C_6F_{1$</td><td>79-01-6 75-01-4 75-35-4 29118-24-9 141993-31-9 138495-42-8 754-12-1 95-52-3 17129-06-5 353-30-4 57041-67-5 353-36-6 116-15-4 593-53-3 559-40-0 306-98-9 335-27-3 355-04-4 335-57-9 355-42-0 28523-86-6 116-14-3 3709-71-5 76-05-1 359-11-5 76-05-1 359-11-5</td><td>200 NB 200 NB NB NB NB NB NB NB NB NB NB NB NB NB</td><td>1000 NB NB NB NB NB NB NB NB NB NB NB NB NB</td><td>ррт ррт ррт</td><td></td>	$\begin{array}{c} C_2HCl_3\\ C_2H_3Cl\\ C_2H_3Cl\\ C_3H_2F_4\\ C_3H_3F_9\\ C_3H_2F_4\\ C_3H_3F_9\\ C_3H_2F_4\\ C_7H_7F\\ C_6H_7F_3O_2\\ COF_2\\ C_3H_2F_6O\\ C_2H_5F\\ C_4H_5F_3O_2\\ C_6H_3F\\ C_5F_6\\ C_4H_5F\\ C_5F_6\\ C_6F_{16}\\ C_6F_{1$	79-01-6 75-01-4 75-35-4 29118-24-9 141993-31-9 138495-42-8 754-12-1 95-52-3 17129-06-5 353-30-4 57041-67-5 353-36-6 116-15-4 593-53-3 559-40-0 306-98-9 335-27-3 355-04-4 335-57-9 355-42-0 28523-86-6 116-14-3 3709-71-5 76-05-1 359-11-5 76-05-1 359-11-5	200 NB 200 NB NB NB NB NB NB NB NB NB NB NB NB NB	1000 NB NB NB NB NB NB NB NB NB NB NB NB NB	ррт ррт	
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475Trichloroethylene (Trichlorethene)476Vinyl chloride (Chloroethene)477Vinylidene chloride (1,1-Dichloroethene)478(1E)-1,3,3,3-Tetrafiluoro-1-propene (HFO-1234ze)4791,1,1,2,3,3,5,5,5-Nonafiluoropentane4801,1,1,2,3,4,5,5,5-Decafluoropentane4812,3,3,3-Tetrafiluoro,3-buten-2-one4812,3,3,3-Tetrafiluoro,3-buten-2-one4834Ethoxy-1,1,1-trifiluoro-3-buten-2-one484Carbonyl difluoride485Desflurane (1,2,2,2-tetrafiluoroethyl difluoromethyl ether)486Ethyl fluoride (Fluoroethane, HFC-161)487Ethyl fluoropropylene (Perfluoropropene)498Hexafluoropropylene (Perfluorocyclopentene)499Perfluoro-1,2-dimethylcyclohexane493Perfluoro-1,3-dimethylcyclohexane494Perfluoro-2-methylpentane495Perfluoro-2-methylpentane496Perfluoro-2-methylperfluoro-2-pentene500Trifluoroacetic acid501Trifluoroacetic acid502Dichlorofluoromethylperfluoro-2-pentene503Freon 113 (1,1-2Trichloro-1,2,2-trifluoroethane)504Freon 113 (1,1-2Trichloro-1,2,2-trifluoroethane)505Freon 113 (1,1-2Trichloro-1,2,2-trifluoroethane)506Freon 114 42.0-ichloro-1,2,2-tetrafluoroethane)507Freon 114 42.0-ichloro-1,2,2-tetrafluoroethane)508Freon 114 (1,2-Dichloro-1,2,2-tetrafluoroethane)509Freon 113 (1,1-Trichloro-1,2,2-tetrafluoroethane)506Freon 114 (1,2-Dichloro-1,2,2-tetrafluoroethane)<	$\begin{array}{c} C_2HCl_3\\ C_2H_3Cl\\ C_2H_3Cl\\ C_3H_2F_4\\ C_3H_3F_5\\ C_3H_2F_4\\ C_3H_2F_4\\ C_7H_7F\\ C_6H_7F_3O_2\\ COF_2\\ C_3H_2F_6O\\ C_3H_3F\\ C_3H_2F_6O\\ C_3H_3F\\ C_3F_6\\ C_3F_6\\ CH_3F\\ C_3F_6\\ CH_3F\\ C_3F_6\\ C_4H_3F\\ C_5F_8\\ C_6F_{14}\\ C_7F_{16}\\ C_6F_{14}\\ C_7F_{16}\\ C_6F_{14}\\ C_7F_{16}\\ C_6F_{14}\\ C_7F_{16}\\ C_6F_{14}\\ C_7F_{16}\\ C_6F_{14}\\ C_7F_{16}\\ C_2F_{4}\\ C_2HF_{3}\\ C_2CH_7\\ C_2HF_{3}\\ C_2Cl_3F_{3}\\ C_2Cl_3F_{3}\\ C_2Cl_5F_{4}\\ C_2F_{6}\\ C_3F_{6}\\ C_2F_{6}\\ C_2F_$	79-01-6 75-01-4 75-35-4 29118-24-9 141993-31-9 138495-42-8 754-12-1 95-52-3 17/129-06-5 353-30-6 353-36-6 353-36-6 353-36-6 116-15-4 593-53-3 559-40-0 306-98-9 335-27-3 335-50-4 4 335-57-9 355-42-0 28523-86-6 116-14-3 33709-71-5 76-05-1 359-11-5 76-05-1 359-11-5 76-14-2 75-43-4 75-69-4 76-14-2 124-73-2 76-15-3 76-16-4	200 NB 200 NB NB NB NB NB NB NB NB NB NB	1000 NB NB NB NB NB NB NB NB NB NB NB NB NB	ррт ррт	Only non-instrument specific references. Chemical not available.
 475 Trichloroethylene (Trichlorethene) 476 Vinyl chloride (Chloroethene) 477 Vinylidene chloride (1,1-Dichloroethene) 478 (1E)-1,3,3,-Tetrafiluoro-1-propene (HFO-1234ze) 479 1,1,1,2,3,5,5-Nonafluoropentane 481 2,3,3,3-Tetrafluoropopene (HFO-1234yf) 482 2-Fluorotoluene (1-Fluoro-2-methylbenzene) 483 4-Ethoxy-1,1,1-trifluoro-3-buten-2-one 484 Carbonyl difluoride 485 Desflurane (1,2,2,2-tetrafluoropthane) 486 Ethyl fluoride (Fluoroethane, HFC-161) 487 Ethyl trifluoroacetate 488 Fluorobenzene 489 Hexafluoropropylene (Perfluoropropene) 490 Methyl fluoride (Fluoromethane, Freon 41) 491 Octafluoroethylenzene) 492 Perfluoro-1,3-dimethylcyclohexane 493 Perfluoro-1,3-dimethylcyclohexane 494 Perfluoro-1,3-dimethylcyclohexane 495 Perfluoro-1,3-dimethylcyclohexane 496 Tetrafluoromethyle (Perfluorop-2-pentene) 497 Sevoflurane [2,2,2-trifluoro-1-(trifluoromethyl) ethyl ether] 498 Tetrafluoromethylene (Perfluoro-2-pentene) 499 Perfluoro-1,3-dimethylcyclohexane 497 Sevoflurane [2,2,2-trifluoro-1-(trifluoromethyl) ethyl ether] 498 Tetrafluoroethylene (Perfluoro-2-pentene) 499 Tetrafluoroethylene (Perfluoro-2-pentene) 491 Tetrafluoroethylene (Perfluoro-2-pentene) 492 Perfluoro-1,3-dimethylcyclohexane 493 Perfluoro-1,3-dimethylcyclohexane 494 Perfluoro-1,1,1-Trichloro-1,2,2-trifluoroethane) 495 Teron 113 (1,1,2-Trichloro-1,2,2-trifluoroethane) 506 Freon 114 (1,2-Dichloro-1,2,2-trifluoroethane) 507 Freon 114 B2 (1,2-dibromo-1,1,2,2-tetrafluoroethane) 508 Freon 115 (Chloropentafluoroethane) 	$\begin{array}{c} C_2HCl_3\\ C_2H_3Cl\\ C_2H_3Cl\\ C_3H_2F_4\\ C_9H_3F_9\\ C_9H_3F_9\\ C_9H_2F_4\\ C_9H_2F_4\\ C_7H_7F\\ C_8H_2F_4\\ C_7H_7F\\ C_8H_2F_6\\ O\\ C_2H_3F\\ C_3H_2F_6\\ O\\ C_2H_3F\\ C_3H_3F_6\\ C_3F_6\\ C_4H_3F\\ C_3F_6\\ C_8F_1\\ C_8$	79-01-6 75-01-4 75-35-4 29118-24-9 141993-31-9 138495-42-8 754-12-1 95-52-3 17129-06-5 353-30-6 353-36-6 353-36-6 353-36-6 383-63-1 462-06-6 116-15-4 593-53-3 559-40-0 306-98-9 335-27-3 335-57-9 335-57-9 335-57-9 335-57-9 355-42-0 28523-86-6 116-14-3 3709-71-5 76-05-1 359-11-5	200 NB 200 NB NB NB NB NB NB NB NB NB NB	1000 NB NB NB NB NB NB NB NB NB NB NB NB NB	ррт ррт	
475Trichloroethylene (Trichlorethene)476Vinyl chloride (Chloroethene)477Vinylidene chloride (1,1-Dichloroethene)478(1E)-1,3,3,3-Tetrafiluoro-1-propene (HFO-1234ze)4791,1,1,2,3,3,5,5,5-Nonafiluoropentane4801,1,1,2,3,4,5,5,5-Decafluoropentane4812,3,3,3-Tetrafiluoro,3-buten-2-one4812,3,3,3-Tetrafiluoro,3-buten-2-one4834Ethoxy-1,1,1-trifiluoro-3-buten-2-one484Carbonyl difluoride485Desflurane (1,2,2,2-tetrafiluoroethyl difluoromethyl ether)486Ethyl fluoride (Fluoroethane, HFC-161)487Ethyl fluoropropylene (Perfluoropropene)498Hexafluoropropylene (Perfluorocyclopentene)499Perfluoro-1,2-dimethylcyclohexane493Perfluoro-1,3-dimethylcyclohexane494Perfluoro-2-methylpentane495Perfluoro-2-methylpentane496Perfluoro-2-methylperfluoro-2-pentene500Trifluoroacetic acid501Trifluoroacetic acid502Dichlorofluoromethylperfluoro-2-pentene503Freon 113 (1,1-2Trichloro-1,2,2-trifluoroethane)504Freon 113 (1,1-2Trichloro-1,2,2-trifluoroethane)505Freon 113 (1,1-2Trichloro-1,2,2-trifluoroethane)506Freon 114 42.0-ichloro-1,2,2-tetrafluoroethane)507Freon 114 42.0-ichloro-1,2,2-tetrafluoroethane)508Freon 114 (1,2-Dichloro-1,2,2-tetrafluoroethane)509Freon 113 (1,1-Trichloro-1,2,2-tetrafluoroethane)506Freon 114 (1,2-Dichloro-1,2,2-tetrafluoroethane)<	$\begin{array}{c} C_2HCl_3\\ C_2H_3Cl\\ C_2H_3Cl\\ C_3H_2F_4\\ C_3H_3F_5\\ C_3H_2F_4\\ C_3H_2F_4\\ C_7H_7F\\ C_6H_7F_3O_2\\ COF_2\\ C_3H_2F_6O\\ C_3H_3F\\ C_3H_2F_6O\\ C_3H_3F\\ C_3F_6\\ C_3F_6\\ CH_3F\\ C_3F_6\\ CH_3F\\ C_3F_6\\ C_4H_3F\\ C_5F_8\\ C_6F_{14}\\ C_7F_{16}\\ C_6F_{14}\\ C_7F_{16}\\ C_6F_{14}\\ C_7F_{16}\\ C_6F_{14}\\ C_7F_{16}\\ C_6F_{14}\\ C_7F_{16}\\ C_6F_{14}\\ C_7F_{16}\\ C_2F_{4}\\ C_2HF_{3}\\ C_2CH_7\\ C_2HF_{3}\\ C_2Cl_3F_{3}\\ C_2Cl_3F_{3}\\ C_2Cl_5F_{4}\\ C_2F_{6}\\ C_3F_{6}\\ C_2F_{6}\\ C_2F_$	79-01-6 75-01-4 75-35-4 29118-24-9 141993-31-9 138495-42-8 754-12-1 95-52-3 17/129-06-5 353-30-6 353-36-6 353-36-6 353-36-6 116-15-4 593-53-3 559-40-0 306-98-9 335-27-3 335-50-4 4 335-57-9 355-42-0 28523-86-6 116-14-3 33709-71-5 76-05-1 359-11-5 76-05-1 359-11-5 76-14-2 75-43-4 75-69-4 76-14-2 124-73-2 76-15-3 76-16-4	200 NB 200 NB NB NB NB NB NB NB NB NB NB	1000 NB NB NB NB NB NB NB NB NB NB NB NB NB	ррт ррт	Only non-instrument specific references. Chemical not available.

513 Freon 124 (1-Chloro-1,2,2,2-tetrafluoroethane)	C ₂ HCIF ₄	2837-89-0	NB	NB	ppm	
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514 Freon 125 (Pentafluoroethane)	C ₂ HF ₅	354-33-6	NB	NB	ppm	
515 Freon 12B1 (Bromochlorodifluoromethane, Halon 1211)	CBrCIF ₂	353-59-3	NB	NB	ppm	
516 Freon 133a (1-Chloro-2,2,2-trifluoroethane)	C ₂ H ₂ CIF ₃	75-88-7	NB	NB	ppm	
517 Freon 134a (1,1,1,2-Tetrafluoroethane)	C ₂ H ₂ F ₄	811-97-2	NB	NB		
					ppm	
518 Freon 13B1 (Bromotrifluoromethane; Halon 1301)	CBrF ₃	75-63-8	NB	NB	ppm	Only non-instrument specific references. Chemical not available.
519 Freon 14 (Carbon tetrafluoride)	CF ₄	75-73-0	NB	NB	ppm	
520 Freon 141b (1,1-Dichloro-1-fluoroethane)	C ₂ H ₃ Cl ₂ F	1717-00-6	NB	NB		Only non-instrument specific references. Chemical not available.
					ppm	
521 Freon 142b (1-Chloro-1,1-difluoroethane)	C ₂ H ₃ CIF ₂	75-68-3	NB	NB	ppm	Only non-instrument specific references. Chemical not available.
522 Freon 143a (1,1,1-Trifluoroethane)	$C_2H_3F_3$	420-46-2	NB	NB	ppm	
523 Freon 152a (Difluoroethane; Ethylidene Difluoride)	C ₂ H ₄ F ₂	75-37-6	NB	NB	ppm	
524 Freon 218 (Perfluoropropane)	C ₃ F ₈	76-19-7	NB	NB	ppm	
525 Freon 22 (Chlorodifluoromethane)	CHCIF ₂	75-45-6	NB	NB	ppm	
526 Freon 23 (Trifluoromethane)	CHF ₃	75-46-7	NB	NB	ppm	
527 Freon 236fa (1,1,1,3,3,3-Hexafluoropropane; HFC-236fa)	C ₃ H ₂ F ₆	690-39-1	NB	NB	ppm	
528 Freon 32 (Difluoromethane)	CH ₂ F ₂	75-10-5	NB	NB	ppm	
529 Freon C318 (Octafluorocyclobutane)	C ₄ F ₈	115-25-3	NB	NB	ppm	
	-4.8					
Other organic compounds						
530 1,1,3,3-Tetramethyldisiloxane	C ₄ H ₁₄ OSi ₂	3277-26-7	NB	NB	ppm	
531 1,3,5-Trioxane	C ₃ H ₆ O ₃	110-88-3	NB	NB	ppm	
	C ₃ H ₇ Br	106-94-5	NB	NB		
532 1-Bromopropane (Propyl bromide)					ppm	
533 2-Bromopropane (Isopropyl bromide)	C ₃ H ₇ Br	75-26-3	NB	NB	ppm	
534 Bromoethane (Ethyl bromide)	C₂H₅Br	74-96-4	NB	NB	ppm	
535 Bromoform (Tribromomethane)		75-25-2				
	CHBr ₃		NB	NB	ppm	
536 Chloropicrin (Trichloronitromethane, Nitrochloroform)	CCl ₃ NO ₂	76-06-2	NB	NB	ppm	
537 Chlorpyrifos	C ₉ H ₁₁ Cl ₃ NO ₃ PS	2921-88-2	NB	NB	ppm	
						0-1
538 Cyanogen chloride	CNCI	506-77-4	NB	NB	ppm	Only non-instrument specific references.
539 Decamethylcyclopentasiloxane (D5)	C ₁₀ H ₃₀ O ₅ Si ₅	541-02-6	NB	NB	ppm	
540 Decamethyltetrasiloxane (L4)	C10H30O3Si4	141-62-8	NB	NB	ppm	
541 Diazinon	C12H21N2O3PS	333-41-5	NB	NB	ppm	
542 Dibromomethane (Methylene dibromide)	CH ₂ Br ₂	74-95-3	NB	NB	ppm	
543 Diisopropyl methanephosphonate (DIMP)	C7H17O3P	1445-75-6	NB	NB	ppm	
544 Dimethoate	C5H12NO3PS2	60-51-5	NB	NB	ppm	
545 Dimethyldichlorosilane	C ₂ H ₆ Cl ₂ Si	75-78-5	NB	NB	ppm	
546 Dimethyldiethoxysilane	C ₆ H ₁₆ O ₂ Si	78-62-6	NB	NB	ppm	
547 Dimethyldimethoxysilane	C ₄ H ₁₂ O ₂ Si	1112-39-6	NB	NB	ppm	
548 Dimethylvinylchlorosilane	C ₄ H ₉ ClSi	1719-58-0	NB	NB	ppm	
549 Divinyltetramethyldisiloxane	C ₈ H ₁₈ OSi ₂	2627-95-4	NB	NB	ppm	
550 Dodecamethylcyclohexasiloxane (D6)	C12H36O6Si6	540-97-6	NB	NB	ppm	
		141-63-9				
551 Dodecamethylpentasiloxane (L5)	C ₁₂ H ₃₆ O ₄ Si ₅	141-03-9	NB	NB	ppm	
552 Enflurane [2-Chloro-1-(difluoromethoxy)-1,1,2-trifluoroethane]	C ₃ H ₂ CIF ₅ O	13838-16-9	NB	NB	ppm	Only non-instrument specific references.
553 Ethylene dibromide (1,2-Dibromoethane)	C ₂ H ₄ Br ₂	106-93-4	NB	NB	ppm	
554 Ethylmethyldichlorosilane	C ₃ H ₈ Cl ₂ Si	4525-44-4	NB	NB	ppm	
555 Halothane (Freon 123B1, 2-Bromo-2-chloro-1,1,1-trifluoroethane)	C ₂ HBrClF ₃	151-67-7	NB	NB	ppm	
556 Heptamethyltrisiloxane	C7H22O2Si3	1873-88-7	NB	NB	ppm	
557 Hexamethylcyclotrisiloxane (D3)	C ₆ H ₁₈ O ₃ Si ₃	541-05-9	NB	NB		
					ppm	
558 Hexamethyldisilazane [1,1,1-Trimethyl-N-(trimethylsilyl)-silanamine]	C ₆ H ₁₉ NSi ₂	999-97-3	NB	NB	ppm	
559 Hexamethyldisiloxane (L2)	C ₆ H ₁₈ OSi ₂	107-46-0	NB	NB	ppm	
560 Isoflurane (1-Chloro-2,2,2-trifluoroethyl difluoromethyl ether)	C ₃ H ₂ CIF ₅ O	26675-46-7	NB	NB		
					ppm	
561 Malathion	C ₁₀ H ₁₉ O ₆ PS ₂	121-75-5	NB	NB	ppm	
562 Methyl bromide (Bromomethane)	CH₃Br	74-83-9	NB	NB	ppm	Only non-instrument specific references. Chemical not available.
563 Methyl iodide	CH₃I	74-88-4	NB	NB	ppm	
564 Methyldichlorosilane	CH ₄ Cl ₂ Si	75-54-7	NB	NB	ppm	
565 Methyltrichlorosilane	CH₃Cl₃Si	75-79-6	NB	NB	ppm	
566 Methylvinyldichlorosilane	C ₃ H ₆ Cl ₂ Si	124-70-9	NB	NB	ppm	
567 Octamethylcyclotetrasiloxane (D4)	C ₈ H ₂₄ O ₄ Si ₄	556-67-2	NB	NB	ppm	
568 Octamethyltrisiloxane (L3)	C ₈ H ₂₄ O ₂ Si ₃	107-51-7	NB	NB	ppm	
569 Pentamethyldisiloxane	C ₅ H ₁₆ OSi ₂	1438-82-0	NB	NB	ppm	
		335-36-4				
570 Perfluoro-2-n-butyltetrahydrofuran	C ₈ F ₁₆ O		NB	NB	ppm	
571 Perfluoro-N-methylmorpholine	C ₅ F ₁₁ NO	382-28-5	NB	NB	ppm	
572 Perfluorotributylamine (Heptacosafluorotributylamine, Fluorinert FC	- C ₁₂ F ₂₇ N	311-89-7	NB	NB	ppm	
573 Perfluorotripentylamine (Fluorinert FC-70)	C ₁₅ F ₃₃ N	338-84-1	NB	NB		
					ppm	
574 Perfluorotripropylamine (Tri(perfluoropropyl)amine)	C ₉ F ₂₁ N	338-83-0	NB	NB	ppm	
575 Phenylmethyldichlorosilane	C7H8Cl2Si	149-74-6	NB	NB	ppm	
576 Phenylphosphonous dichloride (Dichlorophenylphosphine)	C ₆ H ₅ Cl ₂ P	644-97-3	NB	NB		
					ppm	
577 Phenyltrichlorosilane	C ₆ H ₅ Cl ₃ Si	98-13-5	NB	NB	ppm	
578 p-Nitrofluorobenzene (4-fluoronitrobenzene)	C ₆ H ₄ FNO ₂	350-46-9	NB	NB	ppm	
579 Propyltrichlorosilane	C ₃ H ₇ Cl ₃ Si	141-57-1	NB	NB	ppm	
580 tert-Butyl hydroperoxide	C ₄ H ₁₀ O ₂	75-91-2	NB	NB	ppm	
581 Tertiary Butyl Dimethyl Silyl alcohol (tert-Butyldimethylsilanol)	C ₆ H ₁₆ OSi	18173-64-3	NB	NB	ppm	
582 Tetraethyl orthosilicate	C ₈ H ₂₀ O ₄ Si	78-10-4	NB	NB	ppm	
583 Tetramethyl orthosilicate (Tetramethoxysilane)	C ₄ H ₁₂ O ₄ Si	681-84-5	NB	NB	ppm	
584 Tetramethylsilane	C ₄ H ₁₂ Si	75-76-3	NB	NB	ppm	
585 Thiophosgene	CCl ₂ S	463-71-8	NB	NB	ppm	
mogone					PP'''	
FOC Tributed above bate						
586 Tributyl phosphate	$C_{12}H_{27}O_4P$	126-73-8	NB	NB	ppm	
586 Tributyl phosphate 587 Trichloromethanesulfenyl chloride					ppm ppm	

588 Triethyl borate	C ₆ H ₁₅ BO ₃	150-46-9	NB	NB	ppm	
589 Triethyl phosphate	C ₆ H ₁₅ O ₄ P	78-40-0	NB	NB	ppm	
590 Triethylsilane	C ₆ H ₁₆ Si	617-86-7	NB	NB	ppm	
591 Trifluoroacetyl chloride	C ₂ CIF ₃ O	354-32-5	NB	NB	ppm	
592 Trimethoxysilane	C ₃ H ₁₀ O ₃ Si	2487-90-3	NB	NB	ppm	
593 Trimethyl borate (Trimethoxyborane)	C ₃ H ₉ BO ₃	121-43-7	NB	NB	ppm	
594 Trimethylchlorosilane	C ₃ H ₉ ClSi	75-77-4	NB	NB	ppm	
595 Trimethylsilanol (Hydroxytrimethylsilane)	C ₃ H ₁₀ OSi	1066-40-6	NB	NB	ppm	
596 Vinyl bromide (1-Bromoethene, Bromoethylene, R1140 B1)	C ₂ H ₃ Br	593-60-2	NB	NB		
597 Vinyltrichlorosilane	C ₂ H ₃ Cl ₃ Si	75-94-5	NB	NB	ppm	
Inorganic compounds	0211301301	/5-94-5	IND	IND	ppm	
598 Ammonia	NH ₃	7664-41-7	500	5000	ppm	
599 Arsine	AsH ₃	7784-42-1	NB	NB	ppm	
600 Boron trichloride	BCl ₃	10294-34-5	NB	NB	ppm	
601 Boron trifluoride	BF ₃	7637-07-2	NB	NB	ppm	
602 Carbon(12) dioxide	CO ₂	124-38-9	NB	NB	ppm	
603 Carbon(13) dioxide	CO ₂	1111-72-4	NB	NB	ppm	
604 Chlorine dioxide	CIO ₂	10049-04-4	NB	NB	ppm	Only non-instrument specific qualitative references.
605 Deuterium oxide (Heavy water; Dideuterium oxide)	D ₂ O	7789-20-0	NB	NB	ppm	ony non-motument specific quantative references.
606 Diborane	B ₂ H ₆	19287-45-7	NB	NB	ppm	
607 Dichlorosilane	SiH ₂ Cl ₂	4109-96-0	NB	NB	ppm	
608 Disilane	Si ₂ H ₆	1590-87-0	NB	NB	ppm	
609 Germane	GeH ₄	7782-65-2	NB	NB	ppm	
610 Germanium tetrachloride	GeCl ₄	10038-98-9	NB	NB	ppm	
611 Hydrogen bromide	HBr	10035-10-6	NB	NB	ppm	Only non-instrument specific references.
612 Hydrogen chloride	HCI	7647-01-0	500	5000	ppm	only non-instrument specific references.
613 Hydrogen fluoride	HF	7664-39-3	NB	NB	ppm	Only non-instrument specific references.
614 Hydrogen peroxide	H ₂ O ₂	7722-84-1	NB	NB	ppm	Only non-instrument specific references.
615 Nitric acid	HNO ₃	7697-37-2	NB	NB	ppm	Only non-instrument specific references.
616 Nitrogen dioxide	NO ₂	10102-44-0	500	5000	ppm	Maximum calibration 5%.
617 Nitrogen monoxide (Nitric oxide)	NO	10102-43-9	2000	10000	ppm	
618 Nitrogen trifluoride	NF ₃	7783-54-2	NB	NB	ppm	
619 Oxygen difluoride	OF ₂	7783-41-7	NB	NB	ppm	Only non-instrument specific references. Chemical not available.
620 Ozone	O ₃	10028-15-6	NB	NB	ppm	Only non-instrument specific qualitative references.
621 Phosphine	PH ₃	7803-51-2	NB	NB	ppm	
622 Phosphorus oxychloride	POCI ₃	10025-87-3	NB	NB	ppm	
623 Phosphorus tribromide	PBr ₃	7789-60-8	NB	NB	ppm	
624 Phosphorus trichloride	PCI ₃	7719-12-2	NB	NB	ppm	
625 Silane (Silicon tetrahydride)	SiH ₄	7803-62-5	NB	NB	ppm	
626 Silicon tetrachloride	SiCl ₄	10026-04-7	NB	NB	ppm	
627 Silicon tetrafluoride	SiF ₄	7783-61-1	NB	NB	ppm	
628 Sulfur dioxide	SO ₂	7446-09-5	2000	10000	ppm	
629 Sulfur hexafluoride	SF ₆	2551-62-4	NB	NB	ppm	
630 Sulfur trioxide	SO ₃	7446-11-9	NB	NB	ppm	
631 Sulfuryl chloride (Sulfuryl dichloride)	SO ₂ Cl ₂	7791-25-5 2699-79-8	NB NB	NB	ppm	Only non-instrument energific references
632 Sulfuryl fluoride	SO ₂ F ₂ Cl ₂ OS	2699-79-8 7719-09-7	NB	NB	ppm	Only non-instrument specific references.
633 Thionyl chloride	SiHCl ₃	10025-78-2		NB	ppm	
634 Trichlorosilane	-		NB	NB	ppm	Only non-instrument encoifie references
635 Tungsten hexafluoride	WF ₆	7783-82-6	NB	NB	ppm	Only non-instrument specific references.
Chemical warfare agents and derivatives *** 636 Mustard gas [Bis(2-chloroethyl)sulphide]	C ₄ H ₈ Cl ₂ S	505-60-2	NB	NB	ppm	Only non-instrument specific references
637 Sarin (o-Isopropyl methylphosphonofluoridate)	C ₄ H ₈ Cl ₂ S C ₄ H ₁₀ FO ₂ P	107-44-8	NB	NB	ppm	Only non-instrument specific references. Only non-instrument specific references.
638 Soman (o-Pinacolyl methylphosphonofluoridate)	C ₄ H ₁₀ FO ₂ P C ₇ H ₁₆ FO ₂ P	96-64-0	NB	NB	ppm	Only non-instrument specific references.
639 Chlorosoman (1,2,2-Trimethyl propyl methyl phosphonochloridate)	C ₇ H ₁₆ FO ₂ P C ₇ H ₁₆ ClO ₂ P	7040-57-5	NB	NB	ppm ppm	Only non-instrument specific references.
640 Tabun (o-Ethyl N,N-dimethyl phosphoramidocyanidate)	C ₅ H ₁₁ N ₂ O ₂ P	77-81-6	NB	NB		
641 Lewisite (2-Chlorovinyldichloroarsine)	C ₂ H ₂ AsCl ₃	541-25-3	NB	NB	ppm	Only non-instrument specific references. Only non-instrument specific references.
642 VX (Methylphosphonothioic acid)	C ₂ H ₂ ASO ₃ C ₁₁ H ₂₆ NO ₂ PS	50782-69-9	NB	NB	ppm ppm	Only non-instrument specific references.
643 Diethyl methanephosphonate (DEMP)	C ₅ H ₁₃ O ₃ P	683-08-9	NB	NB	ppm	Only non-instrument specific references.
644 Dimethyl methylphosphonate (DEMP)	C ₃ H ₉ O ₃ P	756-79-6	NB	NB	ppm	Only non-instrument specific references.
645 Dimethyl phosphite (Dimethyl hydrogen phosphite)	C ₂ H ₇ O ₃ P	868-85-9	NB	NB	ppm	Only non-instrument specific references.
646 Diisopropyl methylphosphonate (DIMP)	C ₂ H ₇ O ₃ P C ₇ H ₁₇ O ₃ P	1445-75-6	NB	NB	ppm	Only non-instrument specific references.
oro phoppopyrmethyphosphonate (phyre)	5/11/03	1-1-1-7-7-0-0	IND	IND	hhiii	ony non-matrument apecine rereiences.

Other components
Not all the components are included in the list above. Please contact Gasmet
Technologies Oy for availability and ranges for the components not mentioned.

* GAS-REF-001 price applies only to components with maximum range indicated above.
 ** GAS-REF-002 price applies only to components with maximum range indicated above.
 *** Very limited availability, subject to export limitations.
 NB GAS-REF-003 components. Please ask for a price quotation for each component separately.



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