

Reactive Gas Mixtures (Analyzer Calibration)

Component	Concentration	Balance
Ammonia	10-500 ppm	Air or Nitrogen
Chlorine	2-1000 ppm	Nitrogen
Carbon Monoxide	10-2000 ppm	Air or Nitrogen
Ethylene Oxide	5-100 ppm	Nitrogen
Hydrogen Cyanide	5-20 ppm	Nitrogen
Hydrogen Chlorine	3-1000 ppm	Nitrogen
Hydrogen Sulfide	5 ppm – 1% vol.	Air or Nitrogen
Nitric Oxide	5-900 ppm	Nitrogen
Nitrogen Dioxide	3-200 ppm	Air or Nitrogen
Phosphine	0.5-15 ppm	Nitrogen
Silane	5-10 ppm	Nitrogen
Sulfur Dioxide	2-100 ppm	Air or Nitrogen

Non Reactive Mixtures (Analyzer Calibration)

Component	Concentration	Balance
Benzene	1-5 ppm	Air
Butane	10 ppm – 0.9% vol.	Air
Carbon Dioxide	50 ppm – 100% vol.	Air or Nitrogen
Ethylene	10 ppm – 1.35% vol.	Air
Helium	100% vol.	N/A
Hexane	10 ppm – 0.48% vol.	Air
Hydrogen	10 ppm – 2.0% vol.	Air or Nitrogen
Isobutylene	10 ppm – 100 ppm	Air
Methane	10 ppm – 2.5% vol.	Air or Nitrogen
Methyl Chloride	10 ppm – 300 ppm	Air
Methylene Chloride	10 ppm – 200 ppm	Air
Oxygen	0.4% - 100% vol.	Nitrogen
Pentane	10 ppm – 0.75% vol.	Air
Propane	10 ppm – 1.1% vol.	Air
Propylene	50 ppm – 5.6% vol.	Nitrogen
Toluene	10 ppm – 100 ppm	Air or Nitrogen
Zero Air	20.9% Oxygen	Nitrogen
Nitrogen	100% vol.	N/A

Mixtures of Lighting Industry

Use of pure inert mixtures contributes to the sophistication of light bulbs.

Krypton in Argon	Pure Krypton
Neon in Argon	Pure Neon

Cement Industry Application

Use of pure inert mixtures contributes to the sophistication of light bulbs.

05-10% O2 in N2	10% CH4 in Argon (P-10)	Low CO and O2 in N2
1-2% Carbon Monoxide in N2	Ultra High Pure Nitrogen	2% Hydrogen in Nitrogen
5% Methane in Argon (P-5)	Zero Grade Nitrogen	

Instrumentation Gas Application

- Purging and Zero Gas for sampling equipment and measuring instruments
- Fuel Gas for FID - 40% H2 Bal He
- Process Gas for ECD / Spectrometer P - 10, P - 5 Gas, 5 - 10% CH4 Bal Ar
- For Gross Calorific Value measurement
- Explosive Gas Mixture: Propane, Methane, CO mixtures in air
- Total Hydrocarbon and Analyzer Gases

Petrochemicals & Refineries Application

Accurate analysis of multicomponent Gas streams as well as control measurements of Petrochemical and Refineries require accurate Calibration Standards.

Propylene + Hydrogen + Carbon Monoxide in the ratio of 1:1:1
1500 ppm Ethylene + 1500 ppm Hydrogen + 10% Propane + Propylene
100 ppm Ethane + 100 ppm Ethylene + 100 ppm Propylene + 100 ppm Butane + Nitrogen
1% Methane + 1% Ethane + 1% Methane + 2% 1-Butene + 2% N-Butane + 30% Ethane + Propane
30% Propane + 1% Propylene + 20% iso-Butane + 0.5% iso-Pentane + Nitrogen

Fertilizer Industry Application

50 PPM CO2 + 50 PPM CO + 50 PPM CH4 + 0.3% Ar + 24.5% N2 + H2
0.1% Ethylene + 0.3% Ar + 0.5 Ethane + 9.2% CH4 + 9.5% CO + 18.63% CO2 + 19.7% N2 + H2
0.1% I-Butane + 0.1% N-Butane + 0.1% I-Pentane + 0.1% N-Pentane + 0.1% N2 + 1.5% Propane + %% CO2 + 7.2% Ethane + CH4

Research Grade Pure Industrial Gases / Liquid Ex-Stock

SF6	i Butane	Methyl Bromide
n Butane	Propane	HCL
Methane	Sulphur Hexafluoride	Iso-Octane
Ethane	Sulphur Di Oxide (SOX)	Vinyl Chloride
Propane	Carbonyl Sulphide	Dimethyl Sulphide
Iso-Butane	Trichloro Ethylene	Methyl Ethyl Ketone
n-Butane	N-Heptane	Butyl Chloride
Iso-Pentane	N-Octane	Gypsum
n-Pentane	N-Decane	Pinene
Carbondioxide	N-Nonane	P-Xylene
n-Hexane	1-Hexene	Neo Pentane
Nitrogen	2-Methyl 1-Pentene	Methyl Cyclo Pentane
Synthetic Air	2-Pentene	Pentane
Ammonia	Carbon di sulphide	Hexane
Acetylene	Benzene	1-3 Butadiene
Argon	Toluene	Ethyl Acetylene
1-Butene	Xylene	Vinyl Acetylene
Trans-2-Butene	Nitro Benzene	Propene
Cis-2-Butene	Acetone	2-Methyl Propene
Iso-Butylene	Methanol	Nonane
1,3-Butadiene	Nitrous Oxide	Chloro Ethane
Carbon Monoxide	Nitrogen Di Oxide	1,2 Dichloro Ethane
Chlorine	3-Methyl 1-Pentene	O-Xylene
Cyclo-Propane	Acetaldehyde	Ethyl Benzene
Ethylene	Ethanol	Di Chloro Ethane
Ethylene Oxide	1-Pentene	m-Xylene
Ethyl Mercaptan	2-Methyl 2-Butene	Hydrogen Bromide
Hydrogen	Cis-2-Pentene	Methyl Cyclohexane
Hydrogen Sulphide	Trans-2-Pentene	Xenon
Helium	Acetic Acid	Krypton
Hydrogen Chloride	1-2 Butadiene	2-Methyl-1-Butene
Methyl Acetylene	Cyclo-Pentane	2 Methyl Pentane
Methyl Mercaptane	Nitric Oxide	Dimethyl Ether
Neon	Methyl Bromide	Octane
Propylene	Cyclo Hexane	Ethyl Chloride
Propadiene	Carbondioxide	Silane
Oxygen	Propane	

The above gases can constitute any custom mixture on limitation of there physical and chemical properties

Isotopic Gas

Deuterium xe-129- krypton, helium-3.

Analysis of Natural Gas

Lab Name	CSL Pvt. Ltd.
Detector	TCD
Carrier	N2
Column	Porapak-Q
Sample	Natural Gas
Vol. Inj.	1 ml
Temp	Initial 40, Hold 2 min nal 180, Ramp 10