

UNITED PHOSPHORUS LIMITED

United Phosphorus Limited (UPL) is the largest producer of crop protection products in India with a wide range of products that include fumigants, fungicides, insecticides, rodenticides & herbicides. The company ranks fourth amongst the generic agrochemical companies in the world. It is the world's largest producer of Aluminum Phosphide and Naproamide. Through acquisitions, strategic alliances and subsidiaries, UPL has built a network across the globe and their products are now exported to more than 105 countries.

UPL has pursued a strategy of continuous expansion and diversification. In line with this growth strategy, UPL has diversified into Power Generation, Pollution Control and Pollution Monitoring, Effluent Treatment, Solid Waste Treatment, and Polymer Products.



CHEMO ELECTRONIC LABORATORY

Chemo Electronic Laboratory is a result of UPL's diversification strategy. Established in the year 1993, the Chemo Electronic Laboratory is today one of the largest manufacturers of toxic gas detection devices in India. We have a wide range of products, all designed and developed in this laboratory. We are the only Indian manufacturer of chemical detector tubes. We produce intrinsically safe personal, portable monitors and flame proof fixed systems for detection of several toxic and flammable gases. Our worldwide customers include large chemical and petrochemical industries, oil refineries, government establishments, fumigators etc. Our products are exported to countries such as U.S.A., Germany, Australia, Spain, Mexico, South Africa, Argentina, Israel and several other countries.

PRODUCT PROFILE

I. CHEMICAL DETECTORS:

Short-term detector tubes, long-term detector tubes, detector strips, charcoal tubes, sulphide ion / chloride ion tubes, airflow indicator tubes are some of our important chemical detectors.

A. Short-Term Detector Tubes:

UNIPHOS Short-Term Gas Detector Tubes consist of a solid carrier material impregnated with sensing chemicals sealed in a glass tube with tapered tips. When a fixed volume of sample air containing the target gas is drawn through the tube by means of a UNIPHOS Precision Air Sampling Pump, a discoloured stain develops. This stain length is calibrated to directly read the target gas concentration in ppm, percentage or mg/m³ on the tube scale.



When a one-time measurement of concentration at a specific moment or at specified intervals is all that is desired, these short-term detector tubes are the detector of choice. UNIPHOS detector tubes are available for more than 60 toxic gases and chemical vapours which include H₂S, NH₃, Cl₂, SO₂, CO, CO₂, PH₃, HCN, NO, NO₂, Benzene, Mercaptans, etc.

B. Gas Detector Strips:

UNIPHOS Gas Detector Strips are paper strips impregnated with specific gas sensing chemicals by a special process. They detect the target gas by their change of colour. The time it takes to change the colour is related to the gas concentration. Detector strips are available for H₂S, HCN, PH₃, AsH₃, Mercaptan, etc.



C. Other Chemical Detectors:

For the measurement of TWA of gas concentration at work places, charcoal tubes and long-term detector tubes are available.

Sulphide ion / Chloride ion tubes for water analysis and Smoke generation tube / Air flow indicator tube for applications like air leakage testing of respirator, measurement of wind flow direction etc. are some of our other products.

II. ELECTRONIC INSTRUMENTS:

We have a wide range of gas detection & other instruments, to cater to many of the diverse monitoring needs of the users. They include hand held portable monitors, pocket size personal monitors and a variety of single / multichannel monitoring system. All our instruments for toxic gases use electrochemical sensors/solid state sensors and all the flammable gas monitors use pellistor as the sensor.

We have instruments to detect more than 20 gases like O₂, H₂, Cl₂, NH₃, H₂S, SO₂, HF, HCN, NO, NO₂, PH₃, AsH₃, CO, CO₂ and any flammable gas.

They can be classified broadly into two categories

1. Portable / pocket size instruments
2. Fixed monitoring systems

1. PORTABLE / POCKET SIZE INSTRUMENTS

A. 200 Series Portable Monitor:

For reliable on the spot *MEASUREMENT* of toxic / combustible gases at workplaces or their monitoring in different application areas UNIPHOS 200 Series Gas Monitors are best suited. The monitor is housed in a tough mild steel body. The gas concentration is displayed on an LCD. Two gas sampling options are available viz. diffusion and sample draw, with or without an inbuilt pump.



B. 300 series Personal Monitor:

UNIPHOS 300 Series Personal monitor is a specially designed small size instrument for *PERSONAL PROTECTION & SAFETY* from the hazards of combustible and toxic gases. These monitors are highly stable against zero drift and quick to respond to changes in target gas concentration. They continuously display gas concentration on an LCD display. There are two user settable alarm set points, which can be used to alert you when a potentially hazardous situation arises. Till that time you can be totally free to concentrate on your work.



C. 600 series Microprocessor based personal monitor with data logger:

In factories where occasional measurement & data logging of toxic gas concentrations at different locations is necessary, it is convenient to use a toxic gas personal monitor with data logger. Uniphos – 600 series Personal Monitors are designed for this type of applications. They are available for most of the commonly encountered toxic gases. The unit has Datalogging facility and it can store data of 24 hours with real time clock and date. There is also provision to download the data on a computer. The Graphic User Interface (GUI) software viz. **UPL-soft** is provided with this monitor for on-line or off-line graphic presentation of gas concentration data on a computer.

D. 700 series Multigas Monitor:

UNIPHOS-700 Multigas Monitor is specially designed for use during vessel / confined space entry or for sewer gas monitoring. It has an inbuilt air-sampling pump, which enables it to draw sample air to the monitor from sewers or other confined spaces and look for Oxygen deficiency or the presence of gases like H₂S, CO methane etc. Any other combination of toxic or flammable gases are possible as per customers need.



E. 395 series Breath Alcohol detector:

UNIPHOS-395 Breath Alcohol detector is a handy device for measuring alcohol content, in blood, suitable for booking drunken drivers. This analyzer can determine the blood alcohol content in a person who has consumed alcohol. It is done by analyzing the alcohol content in his breath sample. The suspected person has to blow for 5 to 8 seconds into the sample port using a disposable mouthpiece. Depending upon the blood alcohol content of that person one of the three LEDs Viz. Green, Yellow or Red will be illuminated indicating the user's blood alcohol level. At the same time LCD panel will show the instantaneous reading of breath alcohol concentration in BAC scale. It has the additional feature to latch the peak value and display it at the end of each measurement.



2.FIXED MONITORING SYSTEMS

A. 500 series Monitoring System

A monitoring system consists of

- Transmitter &
- Controller

(1) 500-T series Gas Transmitter

UNIPHOS 500T series Gas Transmitters are housed in explosion proof / weather proof enclosures. It houses the sensor and the signal processing circuits. The gas concentration signal is converted into an industry standard 4 – 20 mA current output, which can be transmitted over a distance of 1 – 1.5 km to the controller without loss in fidelity. The concentration is displayed on the controller LED in the control room. These universal transmitters use two wires for communication for all toxic gases and three wires for combustible gases.



(2) 500 series Controller

UNIPHOS 500 series controllers are designed to accept and process the 4 – 20 mA signal received from the transmitter (detector head). It provides power to the whole system including the transmitter. The standard features common to all UNIPHOS Controller include Digital Display, LED alarm indications, 4 – 20 mA output, individual low and high alarm relay output, fault relay output, etc.

i. UNIPHOS-500S -Standalone Multichannel Controller

This is a standalone model with each channel having an independent power supply. It can be mounted in a 19" standard rack.



ii. UNIPHOS-500R-Multichannel Controller

This latest version of our multichannel controller is microprocessor based and is designed to economize in size of individual channels. Eight channels are accommodated in a 19" rack. A common power supply card gives power to all the 8 transmitters. It has a building block design, which gives you the flexibility of building a system as small as one channel or as large as your requirements dictate with options to add on more channels as your monitoring needs grow.



iii. UNIPHOS 500 M - Multichannel Controller

This wall-mounted controller is microprocessor based. It can process simultaneously 4 – 20 mA output from four independent transmitters and display the gas concentration reading on its LED display panels. There is provision for data logging & simultaneously downloading the individual channel reading on a computer. This makes the system with the computer suitable for continuous gas monitoring and data logging of the four channels. Optional 'UPL-SOFT' graphic user interface software is provided along with this unit for graphic presentation of data on P.C.



iv. Uniphos– 500 (W) Wall Mountable Controller is designed to economize in cost & size. This Microprocessor based instrument along with one transmitter makes one single channel gas monitoring system, which can be used for the monitoring of gas concentration at a single location.



B. Cooking gas leak detectors (RAKSHA-G):

The **Raksha-G** is designed for detecting and early warning of cooking gas leaks in kitchens. This Microprocessor based low priced wall mounted device is specially designed for domestic application. The detector is provided with an inbuilt transformer and rectifier and can be directly plugged into the socket of 230VAC, 50Hz domestic supply. When gas leak occurs an audible buzzer alarm as well as visual LED alarm will alert you of a gas leak. In addition a potential free relay contact is activated which can be made to operate a hooter at a distant place or the relay can be used to operate a cut-off valve and stop the gas supply.



C. 499 series multipoint leak detection system for flammable gases(viz. LPG/LNG/CNG/Hydrogen etc.):

UNIPHOS- 499 H is a multipoint combustible gas detection system for use in the hazardous areas like LPG/LNG storage areas, LPG bullets, canteen kitchens, pantries, hotel kitchens etc. This system consists of three units. 1) Gas detectors housed in CMRI certified flameproof enclosures 2) A local console 3) A remote console (optional) which can be at the security cabin or in the control room. The system is based on RS-485 digital communication protocol. All the gas detectors are linked to the local console & also to the remote console for alarm indication. When gas leak occurs near any of the gas detectors corresponding LED on the local and remote console will glow indicating the location of gas leak. The relay output from the detector can be connected to a common hooter to sound an audible alarm.



D. 595 series Breath Alcohol detector for bars & restaurants:

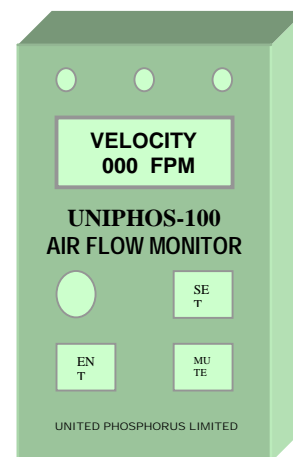
This wall mountable **Breath Alcohol Analyzer** model UNIPHOS-595, which uses state of the art technology is specially designed for use in hotels and bars. It determines the blood alcohol content in a person who has consumed alcohol by analyzing the alcohol content in his breath sample. The user has to insert a 5-rupee coin in the COIN-INSERT slot & blow into the sample port using a drinking straw. Depending upon the blood alcohol content of that individual one of the three coloured panels Viz. Green, Yellow or Red will be illuminated indicating the user's blood alcohol level. This unit can also be made to work with push button switch instead of coin-operated switch.



E Air flow monitor for fume hoods:

UNIPHOS-100 airflow monitor is designed to continuously monitor the face velocity of laboratory fume-hoods. This monitor which can be permanently installed on the fume-hood measures the face velocity in the range of 0-350 FPM (feet per minute). A panel-meter on the front plate of the unit displays the face velocity in the digital form. The unit has two user settable setpoints, one of which is used for setting the limits for low flow & the other for high flow.

There are three LEDs viz. green, red & yellow on the front panel to indicate different flow conditions. When flow condition is normal, the green LED will be glowing. But when the face velocity drops below the low flow set point, the red LED will glow & when it exceeds the high flow limit, the yellow LED will glow. This unit is very useful to protect the workers from exposure to hazardous fumes because of low flow conditions in the fume-hood.



Other instruments

We also have a range of other products like Electronic Attendance Monitor, digital flow meters, etc. We also can supply other custom built instruments as per customers' requirements.

Our Capabilities

Equipped with the latest manufacturing and testing facilities and with a qualified team of trained R&D engineers, we are set to meet the latest trends in gas detection technology and can design and supply instruments meeting special requirement of a customer. Believing in in-house R&D and technological self reliance we have developed the necessary expertise in every aspect of gas detection viz. design & fabrication of all signal processing circuits, software for microprocessor based systems, analytical & calibration capabilities, etc. This has given us an edge over all other manufacturers in providing after sales service and maintenance of our equipments.

Certificates

Our products are certified by CCE, BIS, CMRI, ERTL and Australian Testing Agency for their suitability for use.

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