



Gas Sensor and Catalyst Testing System (GSCTS)

Gas sensor interacts with a gas to measure its concentration. Each gas has a unique resistance, conductivity and breakdown voltage and the electric field at which it is ionized. Sensor identifies gases by measuring these characteristics.

This device is manufactured by integration of two devices: Catastest (for Heterogeneous Catalyst's performance measurement) and semi conductive sensor's performance tester. It can well satisfy the semi conductive sensor's research center supplies. It is a qualified device for use in laboratory which investigates the synthesis and evaluation of the heterogeneous catalysts.

Since optimization of sensitive materials in semiconductor sensors are linked to the performance of the catalyst, this equipment is able to simultaneously measure sensor performance and catalytic properties of material.

Features and facilities:

- Gas flow controller
- Automatic and manual control valves
- Accurate fluid injection pump
- Manual and automatic control of flow
- Max furnace temp: 1000°C
- Temperature controllers
- Gas injection port
- Reactor chamber and sensor holder
- Catalytic reactor
- Humidity controller
- Software for data and signal collection

SPECIFICATION

Resistance	$5 \times 10^2 - 5 \times 10^{10} \Omega$
Gas Concentration	0.1 – 10000 ppm
Gas Flow Rate Control	1 ml/min
Fluid Flow Control	1 μ l/h
Temperature Control	0.1 % Accuracy
Dimension	80cm×90cm×50cm

Application of Gas Sensor

- Process control industries
- Environmental monitoring
- Boiler control
- Fire detection
- Alcohol breath tests
- Detection of harmful gases in mines
- Home safety
- Grading of agro-products like coffee and spices

Applications of Catalyst Performance Test:

- Hydrocarbon partial Oxidation
- Fuel Cells
- Catalytic Cracking
- Hydrocracking, Hydrodesulfurization, and Hydrodenitrogenation Catalysts
- Fischer-Tropsch Synthesis
- Isomerization
- Catalytic Reforming

