**SCIENTICO INDIA**
Manufacturer & Exporter · Ambala, Haryana, India

**PRODUCT DATA SHEET**
Catalogue reference for product evaluation

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# Gaseous Diffusion Apparatus | ReaktiLabX - 03

**Category:** Chemical Reaction Technology · **Country of Origin:** India

## Product Overview

The Gaseous Diffusion Apparatus ReaktiLabX - 03 studies mass transfer through diffusion in gases using a heated water bath and diffusion tube. This Gaseous Diffusion Apparatus features a fan for gas removal, a height-adjustable microscope for volume monitoring, and a motorized blade stirrer. It supports determination of diffusion coefficients based on Fick's law across a temperature range of 100 to 400°C. Optional DAQ software enables measurement and calculation of results.

View this product online: https://scienticoindia.com/product/gaseous-diffusion-apparatus-reaktilabx-03/




**Request a model-specific quotation**
Include quantity and delivery country.

## Technical Specifications

### Gaseous Diffusion Apparatus ReaktiLabX - 03 — Technical Specifications

| Specification | Detail |
|---|---|
| Study Scope | Investigation of diffusion of gases |
| Diffusion Setup | Evaporation of a highly volatile solvent with a diffusion tube in a heated water bath |
| Gas Removal | Removal of gaseous solvent at the upper end of the diffusion tube with a fan |
| Temperature Control | Heater with controller and sensor for adjusting the temperature in the water bath |
| Volume Monitoring | Height-adjustable microscope for monitoring and determining the solvent volume in the diffusion tube |
| Control Unit | Digital display and control unit contains temperature controller and fan |

### Technical Data

#### Water Bath

| Parameter | Value |
|---|---|
| Capacity | approx. 2L |

#### Diffusion Tube for Solvent

| Parameter | Value |
|---|---|
| Diameter | 4mm |

| Parameter | Value |
| --- | --- |
| Length | 100mm |

### Heater

| Parameter | Value |
| --- | --- |
| Power | 300W approx. |

### Fan

| Parameter | Value |
| --- | --- |
| Flow | 120~320L/h |

### Microscope

| Parameter | Value |
| --- | --- |
| Scale division | 0.1mm |

### Stirrer

| Parameter | Value |
| --- | --- |
| Type | Blade |
| Drive | Motorized |
| Speed | 500rpm |

### Measuring Ranges

| Parameter | Value |
| --- | --- |
| Temperature | 100~400°C |

## Key Features

### Key Features

- **Water Bath:** approx. 2L capacity
- **Diffusion Tube:** 4mm diameter, 100mm length
- **Heater:** approx. 300W power
- **Fan:** flow rated 120~320L/h
- **Microscope:** 0.1mm scale division, height-adjustable
- **Stirrer:** blade type, motorized drive, 500rpm speed
- **Temperature Control:** heater with controller and sensor, range 100~400°C
- **Digital Control Unit:** houses temperature controller and fan controls, central to operating this Gaseous Diffusion Apparatus
- **Software:** optional DAQ software for measurement and calculation

### Experiments

- Fundamentals of diffusion: Fick's law
- Derivation of the calculation formula for the diffusion coefficients for the given experimental conditions
- Determination of the diffusion coefficient for the mass transport in gas

### Construction and Design

The Gaseous Diffusion Apparatus ReaktiLabX - 03 uses a water bath of approximately 2L capacity, heated by a heater rated approximately 300W. A diffusion tube, 4mm in diameter and 100mm in length, containing a volatile solvent, is submerged in the water bath. At the tube's upper end, a fan with a flow rate of 120 to 320L/h removes gaseous solvent, maintaining a constant concentration. A height-adjustable microscope, with a scale division of 0.1mm, monitors and determines solvent volume in the diffusion tube. A

motorized blade stirrer, operating at 500rpm, supports water bath conditions. Temperature is controlled and measured across a range of 100 to 400°C. A digital display and control unit houses the temperature controller and fan controls.

**Software**

Software ReaktiLabX - 03 (optional). DAQ software specially designed in National Instrument™, LABVIEW™ environment to measure and calculate the results of the apparatus. The software is optional; a set of electronic sensors is included when the software is used. The software can be run with any Windows™ environment.

**Scope of Delivery**

- 1 Experimental unit
- 1 Microscope to measure level in tube
- 1 Stopwatch
- 1 Set of instructional material

## Ordering & Delivery

- Send the product name, quantity, delivery country and destination with your enquiry.
- Production schedule, freight, payment terms and export documents are confirmed in the written quotation.

## Frequently Asked Questions

**Q: What is the Gaseous Diffusion Apparatus ReaktiLabX - 03 used for?**
A: It is used to study diffusion in gases, determining diffusion coefficients for mass transport based on Fick's law.

**Q: How is gas diffusion studied in this apparatus?**
A: A volatile solvent evaporates in a heated water bath, with the gaseous solvent diffusing into an air flow created by a fan, and the liquid solvent volume monitored using a microscope.

**Q: What is the diffusion tube's construction?**
A: The diffusion tube is 4mm in diameter and 100mm in length.

**Q: Is data acquisition software available with this system?**
A: Yes, Software ReaktiLabX - 03 is available as an optional add-on, designed in National Instrument™ LABVIEW™ environment, and can run with any Windows™ environment.

**Q: What is the water bath capacity and heater power?**
A: The water bath has a capacity of approximately 2L, with a heater rated approximately 300W.

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