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PRODUCT DATA SHEET
Catalogue reference for product evaluation

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Diffusion in Liquids | ReaktiLabX - 02

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

Product Overview

The Diffusion in Liquids ReaktiLabX - 02 studies mass transfer through diffusion in liquid solutions using a U-tube with capillaries. This Diffusion in Liquids apparatus features a transparent tank, magnetic stirrer with heater, and conductivity meter for tracking salt concentration. It supports determination of diffusion coefficients based on Fick's law under controlled temperature conditions. Optional DAQ software enables measurement and calculation of results.

View this product online: https://scienticoindia.com/product/diffusion-in-liquids-reaktilabx-02/



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

Technical Specifications

Diffusion in Liquids ReaktiLabX - 02 — Technical Specifications

Specification	Detail
Study Scope	Investigation of diffusion in liquids
Setup	Transparent tank with magnetic stirrer, conductivity meter, and U-tube with capillaries for investigating diffusion in aqueous solutions
Temperature Control	Heater with controller and sensor for adjusting the temperature in the water bath

Technical Data

Tank with Stirrer

Parameter	Value
Capacity	approx. 1000mL

Magnetic Stirrer with Heater

Parameter	Value
Speed stirrer	0~500rpm
Heater Power	approx. 300W
Magnetic stirrer bar	1

Diffusion Tube

Parameter	Value
Type	U-Tube
Capillaries	250~300
Diameter	1mm
Length	5~8mm

Conductivity Meter

Parameter	Value
Range	0~2000uS/cm
Graduation	1uS/cm

Measuring Ranges

Parameter	Value
Temperature	100~400°C
Conductivity	0~200mS/cm

Key Features

Key Features

- **Tank Capacity:** approx. 1000mL
- **Magnetic Stirrer:** speed 0~500rpm, single stir bar
- **Heater:** approx. 300W power
- **Diffusion Tube:** U-Tube type, 250~300 capillaries, 1mm diameter, 5~8mm length
- **Conductivity Meter:** range 0~2000uS/cm, 1uS/cm graduation
- **Temperature Range:** 100~400°C
- **Conductivity Range:** 0~200mS/cm
- **Concentration Control:** stirrer prevents salt concentration variations near the disc, central to accurate measurement on this Diffusion in Liquids 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 liquid

Construction and Design

The Diffusion in Liquids ReaktiLabX - 02 includes a transparent tank, approximately 1000mL capacity, fitted with a magnetic stirrer and heater, operating at 0 to 500rpm with a single stirrer bar and heater power of approximately 300W. A U-tube diffusion tube, with 250 to 300 capillaries, 1mm in diameter and 5 to 8mm in length, holds the concentrated salt solution, positioned below the water's surface when submerged in the tank of demineralized water. A conductivity meter, ranged 0 to 2000uS/cm with 1uS/cm graduation, measures the amount of salt in the tank. The system supports temperature monitoring from 100 to 400°C and conductivity measurement from 0 to 200mS/cm.

Software

Software ReaktiLabX - 02 (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 for diffusion in liquids
- 1 U-tube with capillaries
- 1 display and control unit
- 1 conductivity meter
- 1 magnetic stirrer with heater
- 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 Diffusion in Liquids ReaktiLabX - 02 used for?
A: It is used to study diffusion in liquids, determining diffusion coefficients for mass transport based on Fick's law.

Q: How is diffusion measured in this apparatus?
A: A concentrated salt solution flows from a U-tube with capillaries into demineralized water, with the salt concentration in the tank measured using a conductivity meter.

Q: What is the tank capacity for this diffusion study?
A: The tank has a capacity of approximately 1000mL.

Q: Is data acquisition software available with this system?
A: Yes, Software ReaktiLabX - 02 is available as an optional add-on, designed in National Instrument™ LABVIEW™ environment, and can run with any Windows™ environment.

Q: What is the diffusion tube's construction?
A: The diffusion tube is a U-Tube type with 250 to 300 capillaries, each 1mm in diameter and 5 to 8mm in length.

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