

Dual-Drive Stirred Gas-Liquid Mass Transfer Coefficient Determination Pilot Plant

Item Number: LPK-DSA



Introduction

Pilot plant for determination of gas-liquid mass transfer coefficients with independent dual-drive agitation. Isolate gas and liquid film resistances via two-film theory control of speeds, flow rates, temperature. Borosilicate vessel provides visual access. Customizable for chemical, environmental, food, pharmaceutical engineering.

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Component / Subsystem	Technical Description
Absorber Vessel	Borosilicate glass cell with dual-drive mechanical agitation
Agitation System	Dual independent variable-speed motors with digital tachometer readouts
Thermal Control	Integrated heating/cooling constant-temperature bath circulator
Flow Measurement	Calibrated gas rotameters and precision fluid delivery system
Pressure & Level Gauges	Dual vertical differential liquid manometers and pressure buffer vessels
Framework & Mounting	Industrial anodized aluminum profile frame with heavy-duty lockable casters

Academic Field	Associated Reference Textbooks	Corresponding Unit Operations & Core Concepts
Chemical Engineering	<i>Unit Operations of Chemical Engineering</i>	Gas Absorption, Interphase Mass Transfer, Two-Film Theory, Determination of Volumetric Mass Transfer Coefficients
Biochemical & Food Engineering	<i>Transport Processes and Unit Operations</i>	Gas-Liquid Dissolution, Aeration Hydrodynamics, Liquid-Film Controlled Resistance
Process & Environmental Engineering	<i>Chemical Engineering Design</i>	Absorber Sizing Principles, Stirred Tank Mass Transfer Correlations, Process Scale-Up Fundamentals