

TABLE OF CONTENTS

<p>100.0 PURPOSE AND SCOPE</p> <p>101.0 Purpose 1</p> <p>102.0 Scope 1</p> <p>103.0 Liability 1</p> <p>200.0 DEFINITIONS AND DESCRIPTIONS OF TERMS</p> <p>201.0 Flow Quantities 1</p> <p>202.0 Key Components 2</p> <p>203.0 Tray Efficiency 2</p> <p>204.0 Operating Lines 2</p> <p>205.0 Pinch 2</p> <p>206.0 Maximum Throughput 2</p> <p>207.0 Minimum Throughput 3</p> <p>208.0 Operating Section 3</p> <p>300.0 TEST PLANNING</p> <p>301.0 Safety 3</p> <p>302.0 Environmental 3</p> <p>303.0 Preliminary Preparation 3</p> <p> 303.1 Test Objectives 3</p> <p> 303.2 Organizational Resources 3</p> <p> 303.3 Schedule 3</p> <p> 303.4 Column Control and Instrumentation 4</p> <p> 303.5 Peripheral Equipment 4</p> <p> 303.6 Pretest Calculations 4</p> <p>304.0 Types of Tests 4</p> <p> 304.1 Performance Tests 4</p> <p> 304.2 Acceptance Tests 4</p> <p>305.0 Specific Areas of Interest 4</p> <p> 305.1 Tray Efficiency 4</p> <p> 305.2 Capacity Limitations 5</p> <p> 305.3 Energy Consumption 5</p> <p> 305.4 Pressure-Drop Restrictions 6</p> <p>306.0 Data Requirements—Measured 6</p> <p> 306.1 Properties of External Streams, Overall and Component Material Balances, Overall Enthalpy Balances 6</p> <p> 306.2 Internal Temperatures 6</p> <p> 306.3 Internal Samples 7</p> <p> 306.4 Pressure Profiles 7</p> <p>307.0 Data Requirements—Physical Properties 7</p> <p> 307.1 Essential Data 7</p> <p> 307.2 Auxiliary Data 7</p> <p>308.0 Test Procedure Documentation 7</p>	<p>400.0 METHODS OF MEASUREMENT AND SAMPLING</p> <p>401.0 Measurement of Temperatures 7</p> <p> 401.1 Accuracy 7</p> <p> 401.2 Errors 7</p> <p>402.0 Measurement of Flow Rates 8</p> <p> 402.1 Orifice Meters 8</p> <p> 402.2 Rotameters 8</p> <p> 402.3 Direct Volume or Weight Measurement 8</p> <p>403.0 Measurement of Column Pressure Drop 8</p> <p> 403.1 Instruments 8</p> <p> 403.2 Pressure Taps 8</p> <p> 403.3 Seal Pots 10</p> <p> 403.4 Accuracy 10</p> <p>404.0 Sampling Procedure 10</p> <p> 404.1 General 10</p> <p> 404.2 Selection of Sampling Points 11</p> <p> 404.3 Sample Connections 11</p> <p> 404.4 Containers 11</p> <p> 404.5 Sampling of High Boiling Materials 11</p> <p> 404.6 Sampling of Intermediate Boiling Materials 12</p> <p> 404.7 Sampling of Materials Having Boiling Points Below -50°F (-46°C) 13</p> <p> 404.8 Labeling and Handling of the Samples 13</p> <p>500.0 TEST PROCEDURE</p> <p>501.0 Preliminary 14</p> <p>502.0 Pretest Procedure for Maximum Hydraulic Throughput 14</p> <p> 502.1 Reaching the Flooding Point 14</p> <p> 502.2 Capacity Test 15</p> <p>503.0 Test Period 15</p> <p> 503.1 Establishment of Steady State Conditions 15</p> <p> 503.2 Length of Test Period 15</p> <p>600.0 COMPUTATION OF RESULTS</p> <p>601.0 Verification of Test Data 15</p> <p>602.0 Material Balance 15</p> <p>603.0 Enthalpy Balance 16</p> <p> 603.1 Overall Balance 16</p> <p> 603.2 Internal Flow Rates 16</p> <p>604.0 Column Capacity 16</p> <p>605.0 Column Pressure Drop 17</p>
---	--

606.0 Overall Column Efficiency	17	703.2 Process	19
606.1 Computer Calculation	17	704.0 Application of Test Results to	
606.2 Graphical Calculation	17	Design Conditions	20
607.0 Murphree Tray Efficiency	18		
608.0 Sample Calculations	18	800.0 APPENDIX	
700.0 INTERPRETATION OF RESULTS		801.0 Notation	21
701.0 Sources of Experimental Error	18	802.0 Illustrations	21
702.0 Effects of Experimental Error	19	803.0 Sample Calculation	21
703.0 Possible Reasons for Not Meeting		803.1 English Units	21
Design Performance	19	803.2 SI Units	23
703.1 Mechanical	19	804.0 References	25

Authorization to photocopy items for internal or personal use, or the internal or personal use of specific clients, is granted by AIChE for libraries and other users registered with the Copyright Clearance Center (CCC) Transactional Reporting Service, provided that the \$1.00 fee per copy is paid directly to CCC, 21 Congress St., Salem, MA 01970. This consent does not extend to copying for general distribution, for advertising or promotional purposes, for inclusion in a publication, or for resale.

Articles published before 1978 are subject to the same copyright conditions and the fee is \$1.00 per page. AIChE Equipment Testing Procedures fee code: 0569-5473/87-\$1.00.

