
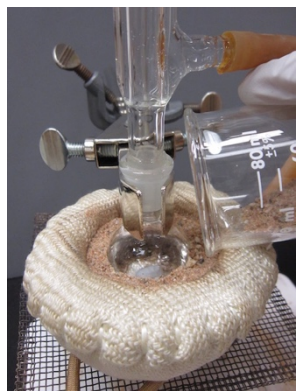
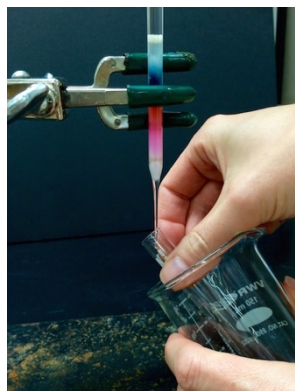


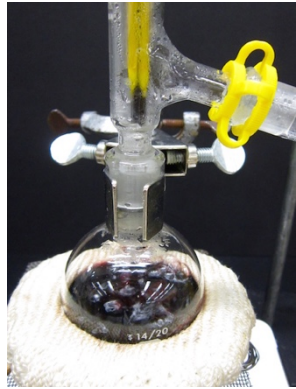

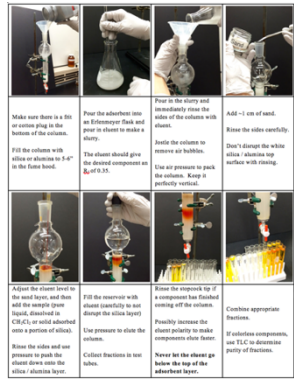


ORGANIC CHEMISTRY LABORATORY TECHNIQUES

Lisa Nichols, 2nd Edition



TABLE OF CONTENTS, IN BRIEF

Preface	Chapter 1 General Techniques Pg. 15	Chapter 2 Chromatography Pg. 81	Chapter 3 Crystallization Pg. 155
 <ul style="list-style-type: none"> • Table of Contents • About the Author • Using this Resource 	 <ul style="list-style-type: none"> • Glassware, Clamping • Transferring Solids and Liquids • Inert Atmospheric Methods • Heating • Refluxing • Filtering 	 <ul style="list-style-type: none"> • Generalities • Thin Layer Chromatography • Column Chromatography • Gas Chromatography 	 <ul style="list-style-type: none"> • Single Solvent Crystallization • Mixed Solvent Crystallization
Chapter 4 Extraction Pg. 201	Chapter 5 Distillation Pg. 247	Chapter 6 Miscellaneous Techniques Pg. 307	Chapter 7 Technique Summaries Pg. 361
 <ul style="list-style-type: none"> • Single Extraction • Multiple Extractions • Reaction Work-ups • Drying Agents 	 <ul style="list-style-type: none"> • Simple Distillation • Fractional Distillation • Vacuum Distillation • Steam Distillation • Rotary Evaporation 	 <ul style="list-style-type: none"> • Melting Point • Boiling Point • Sublimation • Chemical Tests 	 <p>Technique Summaries</p>

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TABLE OF CONTENTS, IN DETAIL

Chapter 0: Preface	3		
About the Author	11		
Using this Resource	12		
Chapter 1: General Techniques	15		
1.1 Glassware and Equipment	17	1.3 Heating and Cooling Methods	44
1.1.A Pictures of Glassware + Equipment	17	1.3.A Methods and Flammability	44
1.1.B Ground Glass Joints	20	1.3.B Controlled Boiling	46
1.1.C Clamping	21	Boiling Stones (Boiling Chips)	46
1.1.D Greasing Joints	23	Boiling Sticks (Wood Splints)	47
1.1.E Cleaning Glassware	24	Stir Bars and Spin Vanes	47
1.1.F Drying Glassware	24	1.3.C Adjustable Platforms	48
Quick Drying	24	1.3.D Bunsen Burners	49
Oven and Flame Drying	25	1.3.E Hotplates	51
Drying Tubes	26	1.3.F Steam Baths	52
1.1.G Storing Samples (Parafilm/Teflon Tape)	26	1.3.G Heating Mantles	53
1.2 Transferring Methods	27	1.3.H Water, Sand, and Oil Baths	54
1.2.A Solids	27	1.3.I Heat Guns	56
1.2.B Liquids	28	1.3.J Cooling Baths	57
Pouring Liquids	28	1.3.K Reflux	58
Comments Re: Measurements	28	Overview of Reflux	58
Using Pasteur Pipettes	29	Step-by-Step Procedures	58
Using Calibrated Pipettes	30	Reflux Summary	62
Calibrated Plastic Pipettes	30	1.4 Filtering Methods	63
Calibrated Glass Pipettes	30	1.4.A Overview of Methods	63
Calibrated Pipettes Summary	34	1.4.B Decanting	63
Dispensing Highly Volatile Liquids	35	1.4.C Gravity Filtration	64
Pouring Hot Liquids	35	1.4.D Suction Filtration	65
1.2.C Inert Atmospheric Methods	36	Suction Filtration Overview	65
Step-by-Step Procedures	37	Rinsing	66
Inert Atmospheric Methods Summary	43	Water Aspirator	67
		Step-by-Step Procedures	68
		Suction Filtration Summary	72
		1.4.E Hot Filtration	73
		Hot Filtration Overview	73
		Step-by-Step Procedures	75
		Hot Filtration Summary	77
		1.4.F Pipette Filtration (Microscale)	78
		1.4.G Centrifugation	79

Chapter 2: Chromatography 81

2.1	Chromatography Generalities	83	2.3	Column Chromatography	119
2.1.A	Overview of Chromatography	84	2.3.A	Macroscale Columns	120
2.1.B	General Separation Theory	85		Procedural Generalities	120
				Step-by-Step Procedures	121
2.2	Thin Layer Chromatography (TLC)	86		Macroscale Column Summary	131
2.2.A	Overview of TLC	86		Troubleshooting	132
2.2.B	Uses of TLC	87	2.3.B	Microscale (Pipette) Columns	133
	Assessing Purity	87		Step-by-Step Procedures	133
	Assessing Reaction Progress	88		Microscale Column Summary	138
	Use of a Co-spot	88			
	Monitoring a Reaction by TLC	89	2.4	Gas Chromatography (GC)	139
	Obtaining an Aliquot	90	2.4.A	Overview of GC	139
2.2.C	The Retention Factor (R_f)	91	2.4.B	Uses of GC	140
2.2.D	Separation Theory	93		Assessing Purity	140
	General Theory	93		Identifying Components	141
	Structural Considerations	95	2.4.C	Separation Theory	142
	Mobile Phase Polarity	97		General Theory	142
2.2.E	Step-by-Step Procedures	98		Structural Considerations	144
	General TLC Procedure	98	2.4.D	Quantitating with GC	145
	Thin Layer Chromatography Summary	102		Quantitative Challenges	145
	Troubleshooting	103		Using a Calibration Curve	147
	Making Capillary TLC Spotters	104		Using Response Factors	148
	Notebook Record of TLC's	105	2.4.E	GC Parameters	149
2.2.F	Visualizing TLC Plates	106		Dilution	149
	Visualization Summary	106		Solvent Delay	150
	Ultraviolet Absorption	107		Oven Temperature	151
	Iodine	108		Using a Temperature Ramp	152
	Chemical Stains	109	2.4.F	Sample Preparation	153
	General Staining Procedure	109			
	<i>p</i> -Anisaldehyde / Vanillin Stains	110			
	Permanganate Stain	112			
	Phosphomolybdic Acid Stain	113			
	Iron(III) Chloride Stain	113			
	Bromocresol Green Stain	114			
	Visualization Troubleshooting	115			

Chapter 3: Crystallization

155

3.1	Overview of Crystallization	157	3.5	Procedural Generalities	179
3.2	Uses of Crystallization	158	3.5.A	General Procedure	179
3.3	Choice of Solvent	160	3.5.B	Heat Source and Bump Prevention	180
3.3.A	Ideal Temperature Profile	160	3.5.C	Charcoal	181
3.3.B	General Procedures for Removing Impurities	161	3.5.D	Cooling Slowly	183
3.3.C	Determining Which Solvent to Use	162	3.5.E	Initiating Crystallization	184
3.3.D	Using Solubility Data	163	3.6	Step-by-Step Procedures	186
3.3.E	Experimentally Testing Solvents	164	3.6.A	Single Solvent Crystallization	186
3.3.F	Mixed Solvents	165	3.6.B	Crystallization Summary	190
3.4	Crystallization Theory	167	3.6.C	Using Solvents Other Than Water	191
3.4.A	Purification	167		Ethanol, Methanol, Ethyl Acetate, and Hexanes	191
3.4.B	Cooling Slowly	167		Diethyl Ether, Acetone, and Petroleum Ether (Low-Boiling)	192
3.4.C	Using the Minimum Amount of Hot Solvent	169	3.6.D	Mixed Solvent Crystallization	193
3.4.D	The Unavoidable Loss of Recovery	171	3.6.E	Mixed Solvent Summary	195
3.4.E	Quantitating Crystallization	173	3.6.F	Troubleshooting	196
	With a Soluble Impurity	173		Crystallization is too Quick	196
	With an Impurity of Similar Solubility	175		Crystallization Doesn't Happen	197
3.4.F	Second Crop Crystallization	176		The Yield is Poor	198
				Liquid Droplets Form (The Solid Oils Out)	199

Chapter 4: Extraction	201		
4.1 Overview of Extraction	203	4.5 Step-by-Step Procedures	215
4.2 Uses of Extraction	204	4.5.A Single Extraction	215
4.2.A Extracting Natural Compounds	204	4.5.B Single Extraction Summary	221
4.2.B Transferring Compounds from Layers	204	4.5.C Multiple Extractions	222
4.2.C Selective Removal of Components	205	Organic Layer is on the Top	222
		Organic Layer is on the Bottom	224
4.3 Which Layer is Which?	206	4.5.D Troubleshooting	225
4.3.A Density	206	There is Only One Layer	225
4.3.B How To Determine the Aqueous Layer	207	There are Three Layers	225
		There is Insoluble Material at the Interface	225
4.4 Extraction Theory	208	The Interface Cannot Be Seen	226
4.4.A Partition / Distribution Coefficient (<i>K</i>)	208	The Layers Don't Separate Well (An Emulsion Formed)	226
4.4.B Choosing a Solvent with Solubility Data	209	4.5.E Microscale Extractions	228
4.4.C Quantitating Single Extraction	210		
4.4.D Multiple Extractions	211	4.6 Reaction Work-ups	230
Overview of Multiple Extraction	211	4.6.A Purpose of a Work-up	230
Quantitating Multiple Extraction	213	4.6.B Common Washes	230
		Water	230
		Sodium Bicarbonate and Sodium Carbonate	232
		Brine (Saturated NaCl)	234
		4.6.C Drying Agents	237
		Why They are Used	237
		Types of Drying Agents	238
		Drying Agents Procedure	240
		4.7 Acid-Base Extraction	242
		4.7.A How They Work	242
		4.7.B Sodium Bicarbonate Washes	243
		4.7.C Mixtures of Acids and Bases	244
		Extracting Bases	244
		Extracting Carboxylic Acids Vs. Phenols	244
		Extracting Acid, Base, and Neutral Components	245

Chapter 5: Distillation**247**

5.1	Overview of Distillation	249	5.4	Vacuum Distillation	285
5.2	Simple Distillation	251	5.4.A	Overview of Vacuum Distillation	285
5.2.A	Uses of Simple Distillation	251	5.4.B	Predicting the Boiling Temperature	286
	Concentration of Alcohol	251	5.3.C	Step-by-Step Procedures	287
	Distilled Water	252		Vacuum Distillation Procedure	287
	Purification of Reagents + Products	252		Vacuum Distillation Summary	291
5.2.B	Separation Theory	254	5.5	Steam Distillation	292
	Raoult's and Dalton's Laws	254	5.5.A	Overview of Steam Distillation	292
	Purification Potential	255	5.5.B	Uses of Steam Distillation	292
	Distillation Curves	258	5.5.C	Separation Theory	293
	Distilling Temperatures	260	5.5.D	Step-by-Step Procedures	294
	Azeotropes	262		Steam Distillation Procedure	294
5.2.C	Step-by-Step Procedures	264		Steam Distillation Summary	299
	Condenser Hoses	264	5.6	Rotary Evaporation	300
	Simple Distillation Procedure	265	5.6.A	Overview of Rotary Evaporation	300
	Simple Distillation Summary	272	5.6.B	Step-by-Step Procedures	301
	Variations	273		Rotary Evaporation Procedure	301
	Troubleshooting	274		Rotary Evaporation Summary	304
	Insulation	274	5.6.C	Troubleshooting	305
5.2.D	Microscale Distillation	276			
	Semi-Microscale	276			
	Hickman Head	276			
	Short-Path Distillation	277			
5.3	Fractional Distillation	278			
5.3.A	Theory of Fractional Distillation	278			
5.3.B	Fractionating Columns	279			
5.3.C	Uses of Fractional Distillation	281			
	Oil Refining	281			
	Purification of Reagents + Products	281			
5.3.D	Step-by-Step Procedures	282			
	Fractional Distillation Procedure	282			
	Fractional Distillation Summary	284			

Chapter 6: Miscellaneous Techniques 307

6.1	Melting Point	309	6.3	Sublimation	330
6.1.A	Overview of Melting Point	309	6.3.A	Overview of Sublimation	331
6.1.B	Uses of Melting Point	310	6.3.B	Step-by-Step Procedures	332
	Identification	310		Under Atmospheric Pressure	332
	Assessing Purity	311		Under Reduced Pressure (Vacuum Sublimation)	334
6.1.C	Melting Point Theory	313		Vacuum Sublimation Summary	337
	Melting Point Diagrams	313			
	Impurities Effect on the Melting Point	314	6.4	Chemical Tests	338
	Melting Point Depression	314	6.4.A	Overview of Chemical Tests	338
	Broadening of the Melting Point	315	6.4.B	Flowcharts	339
6.1.D	Step-by-Step Procedures	316	6.4.C	Chemical Test Summary	342
	Sample Preparation	316	6.4.D	Individual Tests	344
	Melting Point Apparatus	317		Beilstein Test	344
	Thiele Tube Method	320		Benedict's Test	345
	Melting Point Summary	322		Bicarbonate Test	347
6.1.E	Mixed Melting Points	323		Bromine Test	348
				Chromic Acid (Jones) Test	349
6.2	Boiling Point	324		2,4-DNPH (Brady's) Test	350
6.2.A	Overview of Boiling Point	324		Ferric Hydroxamate Test	351
6.2.B	Step-by-Step Procedures	324		Iodoform Test	352
	Distillation Method	324		Lucas Test	353
	Reflux Method	325		Permanganate (Baeyer) Test	354
	Thiele Tube Method	326		pH Test	355
	Thiele Tube Theory	326		Phenol Test	356
	Thiele Tube Procedure	327		Silver Nitrate Test	357
	Thiele Tube Summary	329		Sodium Iodide (Finkelstein) Test	358
				Tollens Test	359

Chapter 7: Technique Summaries 361

7.1	Flame-Drying Glassware	362	7.15	Single Extraction	376
7.2	Using Calibrated Glass Pipettes	363	7.16	Multiple Extraction	377
7.3	Inert Atmospheric Methods	364	7.17	Microscale Extraction	378
7.4	Reflux	365	7.18	Testing the pH After a Wash	379
7.5	Suction Filtration	366	7.19	Using Drying Agents	380
7.6	Hot Filtration	367	7.20	Acid-Base Extraction	381
7.7	Thin Layer Chromatography	368	7.21	Simple Distillation	382
7.8	TLC Visualization Methods	369	7.22	Fractional Distillation	383
7.9	Macroscopic Column Chromatography	370	7.23	Vacuum Distillation	384
7.10	Pipette Column Chromatography	371	7.24	Steam Distillation	385
7.11	Testing Solvents for Crystallization	372	7.25	Rotary Evaporation	386
7.12	Testing Mixed Solvents for Crystallization	373	7.26	Melting Points	387
7.13	Single Solvent Crystallization	374	7.27	Boiling Points (Thiele Tube)	388
7.14	Mixed Solvent Crystallization	375	7.28	Vacuum Sublimation	389

ABOUT THE AUTHOR LISA NICHOLS

This resource is the result of an academic sabbatical leave in the 2015-2016 academic year. The goal of the project was twofold: a) to create a free electronic laboratory resource for students, b) to show greater step-by-step detail for organic chemistry lab techniques than is usually shown in print textbooks, so that students could come to lab with greater confidence.

Lisa Nichols (Figure 1) obtained a Bachelor's of Science degree in chemistry from California State University, Chico in 2001 and a Master's degree in organic chemistry from Stanford University in 2003. At the time of the second edition (2017) she had taught chemistry full-time for 14 years at Butte Community College (in Oroville, northern California, near C.S.U. Chico), with an emphasis on teaching majors-level organic chemistry.

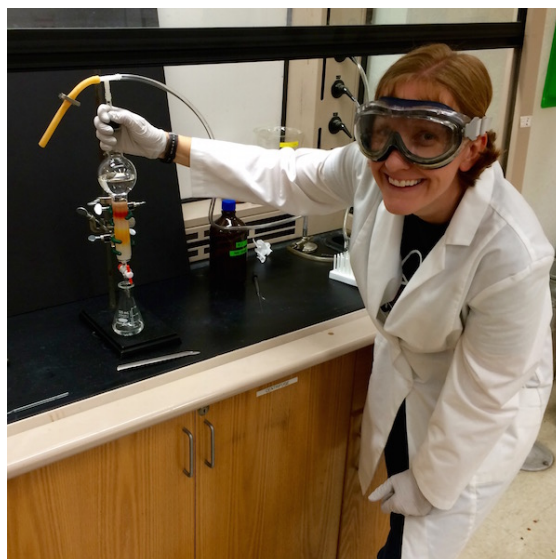


Figure 1: Author running a chromatography column for this project.

Lisa Nichols would like to express gratitude to the many people who made this project possible and/or enhanced the final product:

- The administration and LTPA committee at Butte College that selected her to receive the sabbatical.
- Special thanks to Dr. David Ball, Professor Emeritus at C.S.U. Chico, who was the primary editor for this textbook. Dr. Ball was always willing to discuss best practices and was also a source of occasional supplies.
- Special thanks to the secondary editors of this textbook: Dr.Carolynn Arpin, Dr. Christopher Nichols (faculty at C.S.U. Chico), Dr. Michael Lodewyk, and Dr. Kristin Milinkevich (faculty at Butte College).
- Dave Carr and Rusty Bogart (staff at Butte College) who were often asked to take pictures when both hands were needed in the photograph. Some of Mr. Carr's best work is shown in Figure 2.
- Occasional photography assistance: Dr. Elizabeth Wannenmacher, Martin Wallace (faculty at Butte College), Dr. Monica So, and Jana Burgess-Henry (faculty at C.S.U. Chico).
- Discussion of physics-related phenomena: Dr. Robert White (faculty at Butte College).
- Advice on publishing and multimedia: Jerry Garcia and Peter Dahl (staff at Butte College).
- Advice on online curricular materials: Matt Evans and Mark Blaser (faculty at Shasta College).
- For help on improving the accessibility of the textbook: Suzanne Wakim (faculty at Butte College).

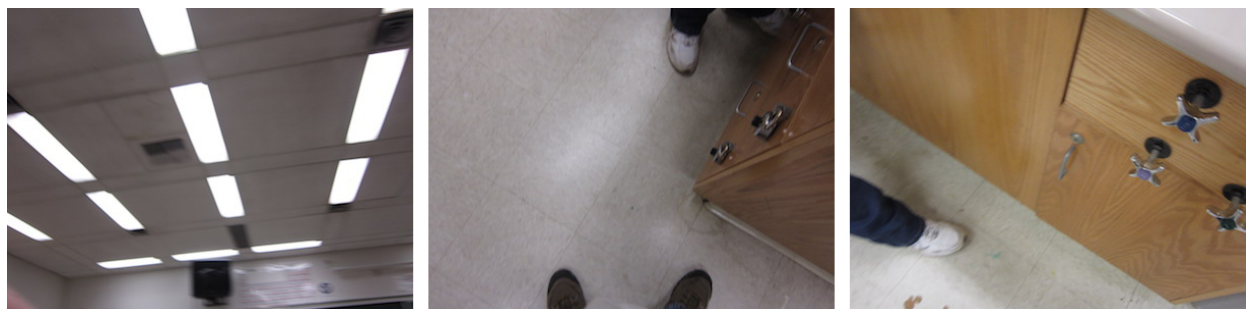


Figure 2: Some excellent photographs taken by Dave Carr.

USING THIS RESOURCE

NOTE TO INSTRUCTORS

This resource is a PDF of an organic chemistry laboratory textbook designed for the undergraduate organic chemistry student who has never before taken a college-level organic chemistry course. It can also be used for students engaging in upper division courses or independent research who wish to have a refresher in basic laboratory techniques. This resource was not designed with graduate students in mind, and therefore may not be all inclusive in laboratory techniques experienced at that level.

One of the main goals of this project was to provide a free, yet quality resource for organic chemistry students. With that in mind, the author Lisa Nichols welcomes feedback on typos, errors, or differences in opinion that readers come across. Please send comments to: nicholsli@butte.edu.

It was not practical to show every conceivable iteration of every lab technique, and focus was placed on what was considered to be the most commonly encountered methods. Consideration was made to what materials are likely available in teaching labs. For example, a balloon technique was presented for inert atmospheric work as it was thought that gas manifolds are less common in academic labs.

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Figure 3: Creative Commons logo.

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NOTE TO STUDENTS

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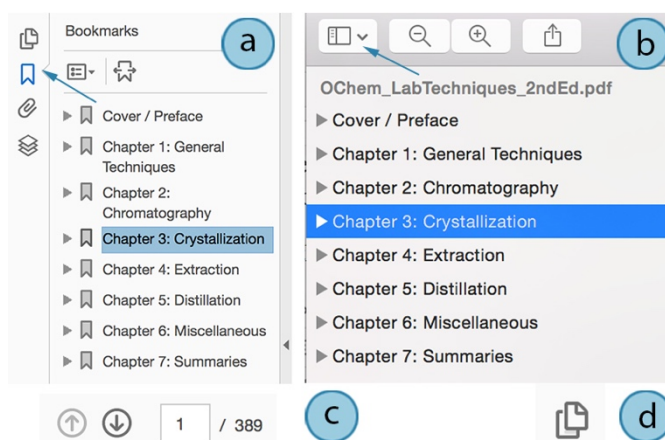


Figure 4: a) Bookmarks icon in Adobe Reader (indicated with an arrow), b) Table of contents icon in Preview (indicated with an arrow), c) Skipping to a page icon in Reader, d) Thumbnail icon in Reader.

