

Rubric for Identification of Unknowns Paper – Spring 2020

Name: _____

Section: _____

Date: _____

Vial Number: _____

What compounds do you think you have?

Alcohol: _____

Ketone: _____

Typed prelab (containing introduction, physical data, and procedure) is due at start of experiment. Data & observations are handwritten during experiment. Before you leave lab, your TA will initial your prelab and data & observations. Three lab periods after the Identification of Unknowns lab ends, turn in your paper as a single stapled document containing, in this order: 1) Copy of this rubric 2) Initialed prelab 3) Data & observations 4) Typed paper 5) All spectra

Item	Max Score	Your Score
Introduction	6	
Physical Data	6	
Procedure	6	
Data & Observations	6	
Introduction	12	
Body	24	
Conclusion	12	
IDs	24	
Technique	12	
Format	12	
RAW TOTAL	120	
Points lost due to lateness (10%/day)	-	
Points lost due to taking pure compounds (4 pts/vial)	-	
FINAL GRADE	120	

	Full points	Two-thirds points	One-third points	No points
Introduction (6 pts)	<ul style="list-style-type: none"> Purpose is stated clearly and correctly in a few sentences Structures are drawn in ChemDraw (or similar program) with no errors 	<ul style="list-style-type: none"> Purpose has minor errors, is incomplete or far too wordy Structures are drawn in ChemDraw with minor errors or omissions 	<ul style="list-style-type: none"> Purpose is stated vaguely or incorrectly Structures are drawn in ChemDraw with major errors or omissions 	<ul style="list-style-type: none"> Purpose is not stated Structures are not shown at all, or are copied from another source, or are hand-drawn
Phys Data (6 pts)	<ul style="list-style-type: none"> All compounds used in experiment are listed All relevant physical properties are given for each compound 	<ul style="list-style-type: none"> Most compounds are listed Most physical properties are given for each compound 	<ul style="list-style-type: none"> Under half of compounds are listed Some physical properties are given for each compound 	<ul style="list-style-type: none"> Few or no compounds are listed Few or no physical properties are given
Proced. (6 pts)	<ul style="list-style-type: none"> All steps are listed clearly, in correct order 	<ul style="list-style-type: none"> Most steps are listed clearly, in correct order 	<ul style="list-style-type: none"> Most steps are listed incorrectly, unclearly, or in wrong order 	<ul style="list-style-type: none"> No steps are listed
Data & Obs (6 pts)	<ul style="list-style-type: none"> Data and observations are present, clearly labeled and organized All TLC plates are drawn R_f values are clearly and correctly calculated Data is handwritten clearly on carbon-copy paper during experiment 	<ul style="list-style-type: none"> Data and observations are mostly present, but disorganized or not labeled Most plates are drawn R_fs are calculated incorrectly or without showing work Data is handwritten sloppily on carbon-copy paper during experiment 	<ul style="list-style-type: none"> Data and observations are mostly missing, or so disorganized that they are useless Plates are not drawn R_f values are not calculated Data is either not written during lab, or very sloppy 	<ul style="list-style-type: none"> Data and observations are missing

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Introduction (12 pts)	<ul style="list-style-type: none"> ○ Procedure is briefly discussed, with brief explanation of why it was performed ○ Brief explanation of solvent choice is given ○ Brief explanation of choice of which fractions to combine is given 	<ul style="list-style-type: none"> ○ Procedure is discussed with partial explanation ○ Incomplete explanation of solvent choice ○ Incomplete explanation of choice of which fractions to combine 	<ul style="list-style-type: none"> ○ Experimental procedure is discussed with incorrect/no explanation ○ Incorrect or missing explanation of solvent choice ○ Incorrect or missing explanation of choice of which fractions to combine 	<ul style="list-style-type: none"> ○ Experimental procedure is not discussed
Body (24 pts)	<ul style="list-style-type: none"> ○ A detailed description is given of how the data (TLC, MP, IR, and NMR) lead you to identify each compound (1 paragraph per compound) ○ All required spectra are attached and interpreted correctly. All relevant peaks are labeled. ○ Writing is clear ○ Writing is in third-person past tense 	<ul style="list-style-type: none"> ○ A detailed description is given of how the data lead you to identify each compound, with minor errors ○ All required spectra are interpreted mostly correctly, with most peaks labeled. ○ Writing is fairly clear ○ Writing is mostly in third-person past tense 	<ul style="list-style-type: none"> ○ A detailed description is given of how the data lead you to identify each compound, with significant errors ○ All required spectra are interpreted with significant errors, or some spectra are missing ○ Writing is fairly confusing ○ Writing is mostly in wrong tense 	<ul style="list-style-type: none"> ○ No description is given of how the data lead you to identify each compound ○ All required spectra are missing or not interpreted ○ Writing is very confusing ○ Writing is in wrong tense
Conclusion (12 pts)	<ul style="list-style-type: none"> ○ Findings are summarized clearly and concisely 	<ul style="list-style-type: none"> ○ Summary has minor errors, is incomplete or far too wordy 	<ul style="list-style-type: none"> ○ Findings are summarized with significant errors 	<ul style="list-style-type: none"> ○ Findings are not summarized
IDs (24 pts)	<ul style="list-style-type: none"> ○ Alcohol identified correctly ○ Ketone identified correctly 			<ul style="list-style-type: none"> ○ Alcohol not identified correctly ○ Ketone not identified correctly
Technique (12 pts)	<ul style="list-style-type: none"> ○ Student was prepared for lab and understood procedure & technique ○ Student followed correct safety procedures throughout experiment 	<ul style="list-style-type: none"> ○ Student was mostly prepared for lab and mostly understood procedure & technique ○ Student violated safety rules once or twice (no goggles, shorts, etc.) 	<ul style="list-style-type: none"> ○ Student was unprepared for lab and understood procedure & technique poorly ○ Student violated safety rules several times 	<ul style="list-style-type: none"> ○ Student was completely unprepared for lab and had no understanding of experiment ○ Student committed significant violations of safety rules
Format (12 pts)	<ul style="list-style-type: none"> ○ Report is typed (except for data) and turned in as paper copy, with good spelling, formatting, and grammar ○ All parts of lab report are present in correct order ○ All parts of lab report have identifying information ○ Font is correct (10- or 12-point, 1.5- or 2-spaced) ○ Paper is under three pages (not including prelab, spectra or observations) 	<ul style="list-style-type: none"> ○ Report is typed but has some spelling, formatting or grammatical errors ○ All parts are present but not in correct order ○ Lab report has most of identifying info ○ Font is nearly correct ○ Paper is 3-4 pages 	<ul style="list-style-type: none"> ○ Report is typed but has significant spelling, formatting or grammatical errors ○ Rubric sheet is not attached ○ Lab report has little identifying info ○ Font is very incorrect ○ Paper is 5-6 pages 	<ul style="list-style-type: none"> ○ Entire lab report is handwritten, or not turned in as hard copy, or has terrible spelling or grammar ○ Multiple sections of lab report are missing ○ Lab report has no identifying info ○ Font is so incorrect that paper cannot easily be read or graded ○ Paper is 7 pages or more