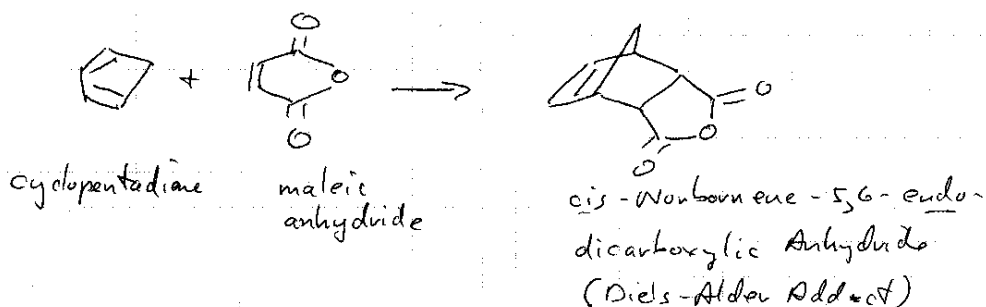


SAMPLE LAB REPORT FOR CHEM 269

Use this as a very general guide to follow in writing your reports. It contains all the elements of a complete report: (1) prelab material, including outline, (2) procedure, observations, and data, (3) results and discussion, (4) answers to assigned questions.

EXP. NUMBER	EXPERIMENT/SUBJECT DIELS-ALDER SYNTHESIS	DATE 1/19/03	1
NAME Pete Samal	LOCKER/DESK NO.	COURSE & SECTION NO.	

Synthesis of cis-Norbornene-5,6-endo-dicarboxylic Anhydride



REAGENTS

	MW	Dens.	B.P.	M.P.
cyclopentadiene	66.1	0.80	41	—
maleic anhydride	98.1	—	—	53
Diels-Alder product	164.2	—	—	165

QUANTITIES

	mL	g.	moles
cyclopentadiene	0.20	0.16	0.0024
maleic anhydride	—	0.20	0.0020

MALEIC ANHYDRIDE IS LIMITING REAGENT
(CYCLOPENTADIENE IS IN EXCESS)

THEORETICAL AMT OF DIELS-ALDER ADDUCT

$$= 0.0020 \text{ mol} \times 164.29/\text{mol} = \boxed{0.3289}$$

SIGNATURE	DATE	WITNESS/TA	DATE
-----------	------	------------	------

EXP. NUMBER	EXPERIMENT/SUBJECT	DATE	2
		1/9/03	
NAME	LOCKER/DESK NO.	COURSE & SECTION NO.	

PRELAB OUTLINE

REF: WILLIAMSON TEXT PP. 316, 317 AND CNEM 269 HANDOUT.

- MEASURE 0.20g MALIC ANHYDRIDE INTO REACT. TUBE
- DISSOLVE IN 1mL ETHYL ACETATE THEN ADD 1mL LIGROIN (60-80° B.P.)
- ADD 0.20 mL DRY CYCLOPENTADIENE, MIX WELL,
- ALLOW TUBE TO COOL TO R.T. TO CRYSTALLIZE
- (IF CRYSTALS DO NOT FORM, SCRATCH INSIDE OF TUBE JUST BELOW SURFACE WITH GLASS STIRRING ROD, IF CRYSTALS ARE TOO FINE, REHEAT TO DISSOLVE + ALLOW TO COOL SLOWLY. ADD SEED CRYSTAL IF NECESSARY.)
- REMOVE SOLVENT BY APPEY METHOD, RINSE CRYSTALS WITH COLD LIGROIN, REMOVE SOLVENT.
- SCRAPE CRYSTALS ONTO FILTER PAPER TO DRY
- WEIGH, TAKE M.P.

SIGNATURE	DATE	WITNESS/TA	DATE

NOTE: INSERT PERIODIC TABLE UNDER COPY SHEET BEFORE WRITING • THE HAYDEN-McNEIL STUDENT LAB NOTEBOOK

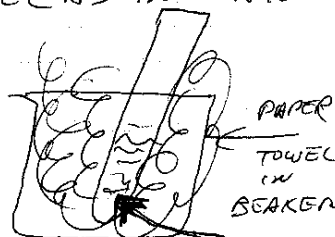
EXP. NUMBER	EXPERIMENT/SUBJECT	DATE	3
		1/9/02	
NAME	LOCKER/DESK NO.	COURSE & SECTION NO.	

(ALL MATERIAL TO HERE IS DONE BEFORE LAB)

PROCEDURE, OBSERVATIONS, DATA.

- MALEIC ANHYDRIDE GROSS 0.032g.
 TARE 0.012g.
 NET 0.020g.

ADD ~~0.020g~~ 0.020g MALEIC ANHYDRIDE TO REACT. TUBE,
 ADD 1mL ETHYL ACETATE TO DISSOLVE THEN ADD
 1mL LIGROIN (BP 60-80), SOL'N IS SLIGHTLY
 YELLOW BUT CLEAR (NO PRECIPITATES), USE
 SYRINGE TO TRANSFER 0.20mL CYCLOPENTADIENE (DRY!)
 TO REACTION TUBE AND MIX WELL WITH STIRRING
 ROD, REACTION TUBE GETS WARM, YELLOW
 COLOR DISAPPEARS, PLACE WARM TUBE INTO
 BEAKER CONTAINING PAPER TOWEL AS INSULATION
 SO TUBE COOLS SLOWLY.



AFTER 10 MIN, LARGE COLORLESS
 PLATE-LIKE CRYSTALS APPEARED,
 THE TUBE WAS ALLOWED TO
 COOL TO ROOM TEMP. FOR COMPLETE

SIGNATURE	DATE	WITNESS/TA	DATE

EXP. NUMBER	EXPERIMENT/SUBJECT	DATE	1/9/03	4
NAME		LOCKER/DESK NO.	COURSE & SECTION NO.	

CRYSTALLIZATION, SOLVENT WAS REMOVED BY THE PIPET METHOD AND THE CRYSTALS WERE RINSED WITH 1.5 mL COLD LIGROIN. THE LIGROIN WAS REMOVED, THE CRYSTALS WERE SCRAPED OUT OF THE TUBE AND ALLOWED TO DRY IN THE AIR, TO CONSTANT WEIGHT.

1ST WEIGHT crystals + filter paper

0.585g
0.585g
filter paper 0.252g
<u>0.333g</u>

AFTER 10 MIN

0.565g
0.252g
<u>0.313g</u>

AFTER 5 MIN

0.565g
0.252g
<u>0.313g</u> FINAL WT.

$$\% \text{ YIELD} = \frac{0.313g}{0.328g} \times 100 = 95\%$$

m.p. 163.5-164.5° C.

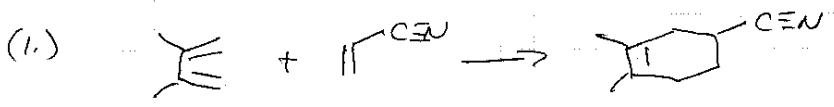
SIGNATURE	DATE	WITNESS/TA	DATE
-----------	------	------------	------

EXP. NUMBER	EXPERIMENT/SUBJECT	DATE
NAME		COURSE & SECTION NO.
LOCKER/DESK NO.		

RESULTS + DISCUSSION

THE DIELS-ALDER REACTION OF CYCLOPENTADIENE AND MALEIC ANHYDRIDE PRODUCES PRODUCT IN EXCELLENT YIELD AND PURITY, AS JUDGED BY THE M.P. ADDITIONAL ANALYSES TO CONFIRM THE IDENTITY AND PURITY COULD HAVE BEEN DONE BY TLC, IR, AND NMR. (ETC, ETC, ETC. - ABOUT 1/2 PAGE - 1 PAGE)

ANSWERS TO ASSIGNED QUESTIONS



(ETC, ETC, ETC.)

SIGNATURE	DATE	WITNESS/TA	DATE
-----------	------	------------	------