



General Chemistry Laboratory

Course Introduction, Check-In, and Lab Safety



Course Objectives

General Chemistry



General Chemistry
Laboratory

- Verify key chemistry principles (e.g. buffer solution, redox reaction, equilibrium, Hess's law, Beer's law, chemical kinetics, *etc.*) via hands-on activities.
- Practice entry-level experimental skills (e.g. weighing chemicals, dilution, titration, filtration, *etc.*), collect and analyze data, and write lab reports.
- Experiments include both *qualitative* and *quantitative* analyses.
- Maintain good communication with coworkers (TA, ATAs, classmates).



Week 1 Agenda

- Introduction of TA and associate TAs
- Taking attendance
- Course policies & schedule
- Grading scheme
- How to write lab reports
- Online course resources
- Evacuation & fire extinguisher demo
- Lab safety guidelines





Course Policies (Attendance)

1. Please be punctual and never miss a class. Do not leave class prematurely.
2. Each absence deducts 10 pts from your semester grade. With three absences, you automatically fail this course.
3. 1 point (2, 3 pts) will be deducted from your semester grade every time you are late for <10 min (10-20, 20-30 min). If you enter the lab more than 30 min late or after the instruction period, you will get an absence and are not allowed to start the experiment.
4. Official/funeral leaves: Provide proof documents to TA at least one day in advance. The leave is granted only with permission.
5. Sick leave: Email the TA as soon as possible and hand in the medical certificate(s) within one week of the lab date.
6. When you miss a lab, check the schedule and arrange a make-up experiment with your TA.
7. The attendance rate for students in this course must be at least 80%.



Leave Request Form



化學實驗課程學生請假單						
國立台灣大學化學系						
Leave of Absence Application for Chemistry Lab						
Department of Chemistry, National Taiwan University						
學號 Student ID			姓名 Name			學院 School
系所 / 年級 Department/ Year of study			假別 Type of leave	☐ 公假 official affairs ☐ 事假 personal leave ☐ 喪假 funeral leave ☐ 病假 sick leave ☐ 其他 Others _____		
起始時間 Starting Date	年 Year	月 Month	日 Date	時間 Time	共 計 Period of Absence	天 數 Day(s)
結束時間 Resumption Date	年 Year	月 Month	日 Date	時間 Time		小 時 Hour(s)
申請日期 Date of Application			請假課程 Class not attended	☐ 普化實驗 General Chemistry Lab ☐ 有機實驗 Organic Chemistry Lab ☐ 分析實驗 Analytical Chemistry Lab ☐ 物化實驗 Physical Chemistry Lab		
請假事由 Reason						

上述請假時間業經核准，特此通知。The student is permitted to take the leave of absence.

專任助教簽名 Signature of TA : _____ 核准日期 Date : _____

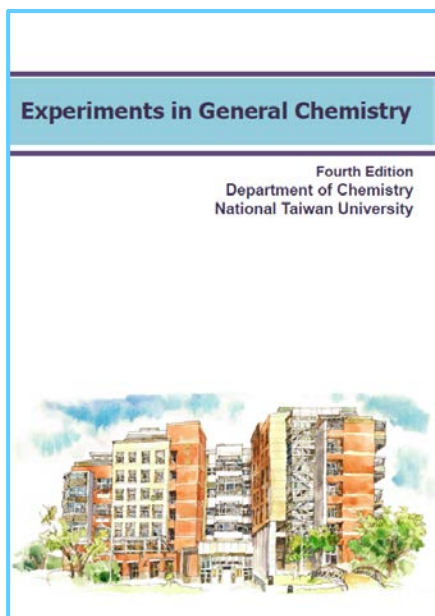
證明文件黏貼處 (就醫證明、事/喪/公假單)

Attach the supporting documents here. (e.g. medical certificates, etc.)

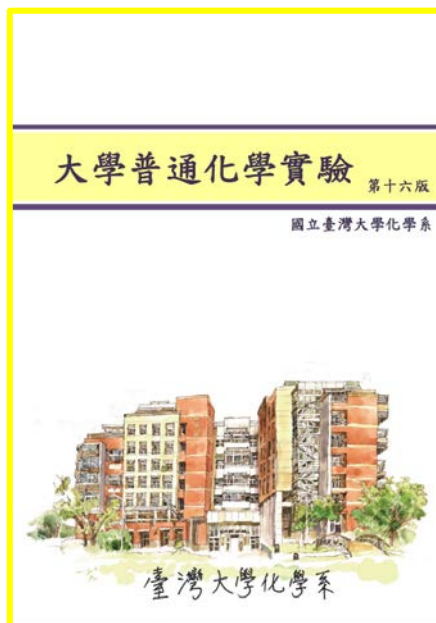
✓ Email the form to your TA



Lab Manual



English version
4th Ed, 2024



Chinese version
16th Ed, 2024



Only For
Chemistry Dept.



- Available in the bookstore at **B1 level of NTU Main Library** (have one class representative doing **group order: 20% off**)



Lab Schedule

Course schedule

General Chemistry Laboratory

NEWS

LECTURE SLIDES

VIDEO DEMONSTRATION

HANDBOOKS

113-2 General Chemistry Lab Schedule

2025-02-11

Leave of Absence Application for Chemistry Lab

2025-02-11

Lab Safety Certification and Identification

2025-02-05

Please respect intellectual property rights and obtain consent from the Department of Chemistry, National Taiwan University



Email: chy037@ntu.edu.tw
Phone: +886-2-3366-8667

Tax: +886-2-3366-8671

Address: Department of Chemistry, National Taiwan University, No. 1, Sec. 4, Roosevelt Rd., Taipei 10617, Taiwan (R.O.C.)

113-2 General Chemistry Lab Schedule

113-2 General Chemistry Lab Schedule																							
WEEK	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE
LAB	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE	DATE
Dept.	Phy	Phy	Phy	Phy	Phy	Phy	Phy	Phy	Phy	Phy	Phy	Phy	Phy	Phy	Phy	Phy	Phy	Phy	Phy	Phy	Phy	Phy	Phy
Prof.	J. S. Shu	J. S. Shu	J. S. Shu	J. S. Shu	J. S. Shu	J. S. Shu	J. S. Shu	J. S. Shu	J. S. Shu	J. S. Shu	J. S. Shu	J. S. Shu	J. S. Shu	J. S. Shu	J. S. Shu	J. S. Shu	J. S. Shu	J. S. Shu	J. S. Shu	J. S. Shu	J. S. Shu	J. S. Shu	J. S. Shu
TA	C. W. Huang	C. W. Huang	C. W. Huang	C. W. Huang	C. W. Huang	C. W. Huang	C. W. Huang	C. W. Huang	C. W. Huang	C. W. Huang	C. W. Huang	C. W. Huang	C. W. Huang	C. W. Huang	C. W. Huang	C. W. Huang	C. W. Huang	C. W. Huang	C. W. Huang	C. W. Huang	C. W. Huang	C. W. Huang	C. W. Huang
1	2/17	2/17	2/17	2/17	2/17	2/17	2/17	2/17	2/17	2/17	2/17	2/17	2/17	2/17	2/17	2/17	2/17	2/17	2/17	2/17	2/17	2/17	2/17
2	2/24	2/24	2/24	2/24	2/24	2/24	2/24	2/24	2/24	2/24	2/24	2/24	2/24	2/24	2/24	2/24	2/24	2/24	2/24	2/24	2/24	2/24	2/24
3	3/3	3/3	3/3	3/3	3/3	3/3	3/3	3/3	3/3	3/3	3/3	3/3	3/3	3/3	3/3	3/3	3/3	3/3	3/3	3/3	3/3	3/3	3/3
4	3/10	3/10	3/10	3/10	3/10	3/10	3/10	3/10	3/10	3/10	3/10	3/10	3/10	3/10	3/10	3/10	3/10	3/10	3/10	3/10	3/10	3/10	3/10
5	3/17	3/17	3/17	3/17	3/17	3/17	3/17	3/17	3/17	3/17	3/17	3/17	3/17	3/17	3/17	3/17	3/17	3/17	3/17	3/17	3/17	3/17	3/17
6	3/24	3/24	3/24	3/24	3/24	3/24	3/24	3/24	3/24	3/24	3/24	3/24	3/24	3/24	3/24	3/24	3/24	3/24	3/24	3/24	3/24	3/24	3/24
7	3/31	3/31	3/31	3/31	3/31	3/31	3/31	3/31	3/31	3/31	3/31	3/31	3/31	3/31	3/31	3/31	3/31	3/31	3/31	3/31	3/31	3/31	3/31
8	4/7	4/7	4/7	4/7	4/7	4/7	4/7	4/7	4/7	4/7	4/7	4/7	4/7	4/7	4/7	4/7	4/7	4/7	4/7	4/7	4/7	4/7	4/7
9	4/14	4/14	4/14	4/14	4/14	4/14	4/14	4/14	4/14	4/14	4/14	4/14	4/14	4/14	4/14	4/14	4/14	4/14	4/14	4/14	4/14	4/14	4/14
10	4/21	4/21	4/21	4/21	4/21	4/21	4/21	4/21	4/21	4/21	4/21	4/21	4/21	4/21	4/21	4/21	4/21	4/21	4/21	4/21	4/21	4/21	4/21
11	4/28	4/28	4/28	4/28	4/28	4/28	4/28	4/28	4/28	4/28	4/28	4/28	4/28	4/28	4/28	4/28	4/28	4/28	4/28	4/28	4/28	4/28	4/28
12	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5	5/5
13	5/12	5/12	5/12	5/12	5/12	5/12	5/12	5/12	5/12	5/12	5/12	5/12	5/12	5/12	5/12	5/12	5/12	5/12	5/12	5/12	5/12	5/12	5/12
14	5/19	5/19	5/19	5/19	5/19	5/19	5/19	5/19	5/19	5/19	5/19	5/19	5/19	5/19	5/19	5/19	5/19	5/19	5/19	5/19	5/19	5/19	5/19
General Chemistry Lab II (Second Semester)																							
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Lab Schedule

113-2 General Chemistry Lab Schedule

WEEK	MON	MON(7-9)	MON(7-9)	TUE	TUE(2-4)	TUE(2-4)	TUE(2-4)	TUE(6-8)	TUE(6-8)
LAB	DATE	B	C	DATE	A	B	C	A	B
Dept.		Psy	Hort		ME	ME	ME	Chemistry	Chemistry
					Eng	odd	even		Eng
Prof.		J. L. She	C. K. Lin		C. K. Lin	J. L. She	R. S. Liu	J. L. She	C. M. Jiang
TA		C. W. Huang	Y. A. Huang			C. W. Huang	Y. A. Huang	H. Y. Chang	M. L. Wu
1	2/17	E0	E0	2/18	E0	E0	E0	C0	C0
2	2/24	E1(C)	E3(A)	2/25	E2(B)	E1(C)	E3(A)	E4(A)	E9(B)
3	3/3	E2(B)	E1(C)	3/4	E3(A)	E2(B)	E1(C)	E13(B)	E4(A)
4	3/10	E3(A)	E2(B)	3/11	E1(C)	E3(A)	E2(B)	E14(C)	E13(B)
5	3/17	Review(B)	Review(C)	3/18	Review(A)	Review(B)	Review(C)	E9(B)	E17(A)
6	3/24	E5(C)	E11(A)	3/25	E14(B)	E5(C)	E11(A)	E17(A)	E14(B)
7	3/31	Day-off	Day-off	4/1	Day-off	Day-off	Day-off	Day-off	Day-off
8	4/7	E11(A)	E14(B)	4/8	E5(C)	E11(A)	E14(B)	E11(A)	E16(C)
9	4/14	E14(B)	E5(C)	4/15	E11(A)	E14(B)	E5(C)	E16(C)	E11(A)
10	4/21	Day-off	Day-off	4/22	Day-off	Day-off	Day-off	C23	C23
11	4/28	E8(A)	E10(C)	4/29	E13(B)	E8(A)	E10(C)	C24	C24
12	5/5	E10(C)	E13(B)	5/6	E8(A)	E10(C)	E13(B)	C25	C25
13	5/12	E13(B)	E8(A)	5/13	E10(C)	E13(B)	E8(A)	C26	C26
14	5/19	Day-off	Day-off	5/20	Day-off	Day-off	Day-off	Day-off	Day-off

General Chemistry Lab (Semester@9)

E0 Check in and Lab Safety Policy
E1 Molar volume of nitrogen gas
E2 Determination of the chemical formula of a compound
E3 Qualitative analysis of group 1 cations
E5 Heat of reactions
E8 Iodine clock - the initial rate method

E10 Quantitative analysis of cobalt(II) ions
E11 Conducting polymer - polyaniline
E13 Potentiometric titration of acid-base
E14 The solubility product constant of silver acetate

General Chemistry Lab II (Second Se

E0 Check in and Lab Safety Policy
E4 Qualitative analysis of group 2 cations
E9 Iodine clock - the integrated rate law and activation energy
E11 Conducting polymer - polyaniline
E13 Potentiometric titration of acid-base
E14 The solubility product constant of silver acetate

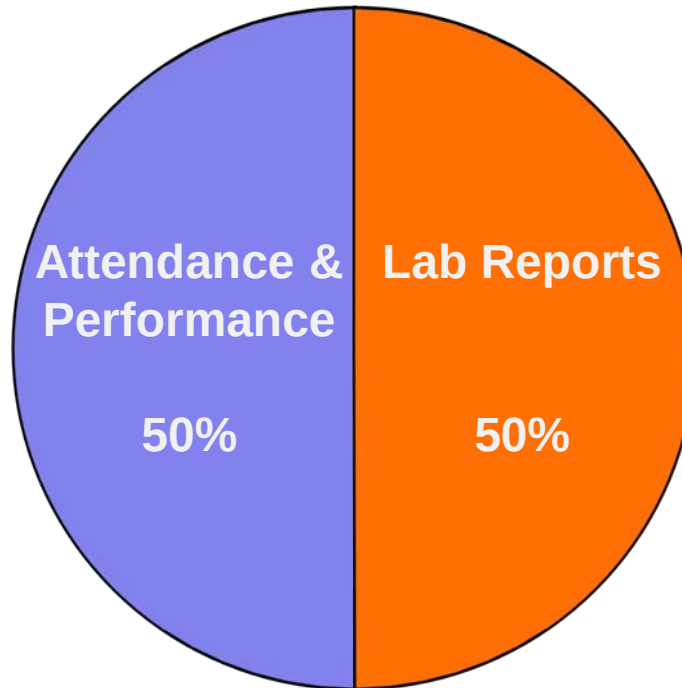
- Note the different locations (Lab room A, B, C) for each lab.
- Make-up experiments can be arranged in other sessions.



Course Grading Scheme

1. Quizzes
2. Correct techniques
3. Active participation
4. Tidiness of work environment

Be punctual for every lab session



1. Prelabs
2. Lab notes
3. Final reports
(Brief & Full)

Hand in the reports on time

Grading on a curve: 10% A+; 60% A+/A/A- in total



Laboratory Reports

Three parts are required for each experiment:



- 1. Prelab exercises** (to be completed before class)
- 2. Lab notes**
- 3. Final reports (group A/B):**
 - Brief version
 - Full version



Prelab Exercises

- Every student needs to write his/her own prelab for each experiment.
- Hand-written using ball pens on lined A4 papers. (Either in English or Chinese is accepted).
- For safety considerations, you are not allowed to start the experiment without a prelab – you will get an absence and have to schedule a make-up experiment with TA.



← Staple

E2 Determination of the chemical formula of a compound

Group No.
Name
Dept.

Objective:

Principles:

Chemicals:

Procedures:



Prelab Exercises

Include the following sections in your prelab:

- I. **Objective:** Summarize the goal *concisely*
 - II. **Principles:** Indicate relevant theories and chemical reactions
 - III. **Chemicals:** Tabulate the chemical formula, molar mass, physical and chemical properties as well as the toxicity (use *The Merck Index* or *SDS*)
- } *Less than 1 page*

III. Chemicals: *5/5*

Name	Formula	Molecular Weight (g/mol)	Density (g/cm ³)	BP/MP (°C)	Solubility (g/L)	Physical Properties	Chemical Properties	Toxicity
Zinc granules	Zn	65.38	7.14	907/419	soluble in acids	shiny, silvery	insoluble in water,	relatively non-toxic,
(金辛)					alkalies	gray metal	strong reducing agent	over toxicity causes nausea
Copper(II) oxide	CuO	79.55	6.32	2009/1326	soluble in acids	dark colored	compound is	causes skin
(氧化铜)						powdery granules	canonicalized;	and eye
							insoluble in water	irritation
Calcium chloride	CaCl ₂	110.98	2.15	1935/782	745	white to off-white	absorbs moisture	toxic, causes
(氯化钙)						solid, odorless	fragrant, dissolves	eye, skin, respiratory
							in absorbed	irritation

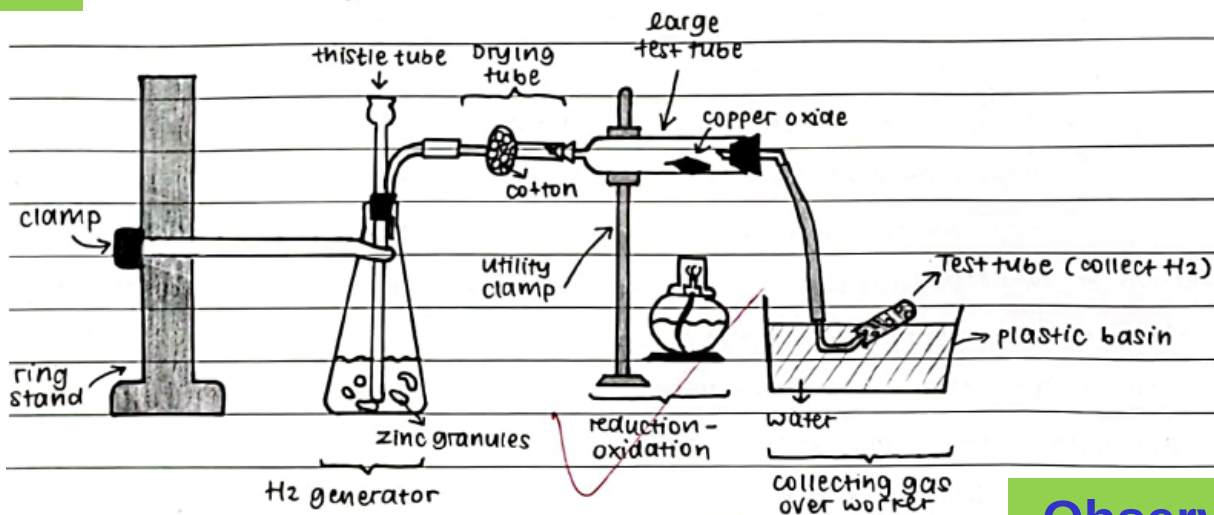


Prelab Exercises

IV. Procedures: Use a flow chart and cartoon to list the crucial operations in this experiment.

Procedures

Procedures: 5/5



Observations

- ① Wash large test tube, dry tube, and let cool.
- ② Fill drying tube with CaCl_2 ; stuff both ends with just enough cotton to prevent CaCl_2 from falling out.
- ③ Measure and record weight of large test tube^(w1); add 1-1.2g copper oxide to middle of tube and measure weight^(w2).
- ④ Measure 15 gram zinc granules to erlenmeyer flask and

Y. observation:

- After pouring HCl , the Zn fizzed up and erlenmeyer flask became cloudy.
- Rubber tube in the water started bubbling



Lab Notes

- Leave ~1/3 page blank space next to the procedure section for recording results and your observations during the experiment.
- Use ball-point pens and avoid correction tapes (only the final reports need to be clean and legible)

Procedures

Observations

Your notes during
(not before) the lab

⑥ Fill 10 test tubes with water and invert and immerse into plastic basin filled with $\frac{2}{3}$ water to collect hydrogen gas.	• After pouring HCl, the Zn fizzed up and erlenmeyer flask became cloudy.		
⑦ Pour 20 mL of 6M HCl (aq) into thistle tube; end of thistle tube should be immerse in solution and rubber tube not twisted, and gas flow is free from obstruction.	• Sound of small test tubes:		
⑧ Collect hydrogen gas over water; bring flame to opening of inverted tube; when there's a loud "pop" sound, continue collecting gas until sound quiets.	1. X	6. X	(✓ : popped X : didn't pop)
	2. X	7. X	
	3. ✓ loud	8. X	
	4. X	9. ✓ subtle	
	5. ✓ loud	10. X	



Final Report (Brief Version)

- Record the raw data with units and observations on the reserved blank space in the prelab exercise.
- Complete the data analysis, give **the results and conclusion** in the lab manual ('Questions and Discussion' does not need to be answered).

Experiment 2

DETERMINATION OF THE CHEMICAL FORMULA OF A COMPOUND

I. Experimental Data and Results (show all calculations)

- Weight of empty large test tube (W_1) _____
- Weight of test tube and copper oxide (W_2) _____
- Weight of copper oxide ($W_2 - W_1$) _____
- Weight of test tube and copper (W_3) _____
- Weight of copper ($W_3 - W_1$) _____
- Weight of oxygen ($W_2 - W_3$) _____
- Empirical formula of copper oxide _____

II. Conclusion

- Hand in the report at the end of the class together with the prelab and lab record
- 35 points per report
- 5 pts deduction for late submission within one week
- 0 points for reports handed in more than one week late



Final Report (Brief Version)

15 pts +

I. Prelab exercise

- ✓ Objectives
- ✓ Principles
- ✓ Chemicals
- ✓ Procedures

10 pts +

II. Lab Notes

- ✓ Observation
- ✓ Operation
- ✓ Reaction condition
- ✓ Data and results

10 pts

III. Final report

- ✓ Data analysis
 - Calculations
 - Significant figures
 - Units
- ✓ Conclusion
- ~~✓ Questions and discussion~~



Final Report (Full Version)

- Complete the data analysis and calculation part in the lab manual
- Plot data correctly, discuss sources of errors, and give the conclusion
- Hand in the report in the next week, together with the prelab and lab notes.
- 50 points per report (5 pts/day deduction for late submission < 1 week).

15 pts + **I. Prelab exercise**

- ✓ Objectives
- ✓ Principles
- ✓ Chemicals
- ✓ Procedures

10 pts + **II. Lab Notes**

- ✓ Observation
- ✓ Operation
- ✓ Reaction condition
- ✓ Data and results

- ## **25 pts** **III. Final report**
- ✓ Data analysis and plots
 - Calculations
 - Significant figures
 - Units
 - ✓ Elaborate results
 - ✓ Error analysis
 - ✓ Conclusion
 - ~~✓ Questions and discussion~~



Laboratory Reports

Three parts are required for each experiment:

1. Prelab exercises (to be completed before class)

Place your prelab on the bench at the beginning of the class. The associate TAs will check and sign your prelab, and unsigned prelab will be considered as late submission.

2. Lab notes

Write down the experiment data and observations. The TA will check and sign after you finish the experiment.

3. Final reports

Brief version: Hand in the report at the end of the class.

Full version: Hand in the report in the following week.

Staple the prelab, lab note, and final report together. (5 pts/day deduction for late submission within one week. 0 points for reports handed in more than one week late.)



Lab Report Grading Rubrics

Category	Guidelines	Pts
I. Prelab exercise	1. Briefly summarize main principles and relevant equations	5
	2. List the chemicals' toxicity and physical and chemical properties	5
	3. Use flow chart to explain the experimental procedures	5
II. Lab notes	4. Record data with correct significant figures and units	5
	5. Record observations, operations, and reaction conditions in details	5
III. Final report	6. Process data correctly (calculation included)	5
	7. Present final results with correct significant figures, units, and conclusion sentences	5
	8. Plot the results with correct XY axes and labeling*	5
	9. Analyze the results with appropriate error discussions*	5
	10. Elaborate findings and provide constructive suggestions*	5

*Only for full reports

Note: A full score for the lab report (35 pts for brief report; 50 pts for full report) means that the expected goals have been achieved, equivalent to grade A.



Academic Writing ABC

- No matter which language you use for writing lab reports, you are expected to write in a more formal academic style.

*People have been interested in this **thing** for **a long time**.*



*Researchers have been interested in this **phenomenon** for **at least 10 years**.*

*When **acid** was added to the test tubes, **many** changed color **quickly**.*



*When **2 drops of 6 M HCl** were added to the test tubes, **3 out of 6** changed color **in three seconds**.*

Be Accurate, be Brief, be Clear

- Write objectively and keep a logical structure
- Improving your writing takes time (years), but everyone must start somewhere.



Online Resources

- NTU COOL (announcement, discussion, score-keeping)
- [General Chemistry Lab course website](#)



General Chemistry Laboratory

Home CHEMISTRY DEPT. NTU 中文

NEWS LECTURE SLIDES VIDEO DEMONSTRATION HANDBOOKS LAB MANUAL CONTACT

News

- 2025-02-05 Lab Safety Certification and Identification
- 2025-02-11 Leave of Absence Application for Chemistry Lab
- 2025-02-11 113-2 General Chemistry Lab Schedule

Lecture Slides

- Laboratory policy and safety rule
- Significant figures and laboratory report
- General chemistry laboratory techniques
- Molar volume of nitrogen gas

- ✓ News
- ✓ Lecture slides
- ✓ Demo videos
- ✓ SDS
- ✓ Lab manual

✓ Available in both Mandarin and English



Online Resources – Video



ntuchemistrylab
6.03K subscribers

English subtitles available

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基礎化學實驗技能

▶ PLAY ALL



基礎化學實驗技能 (1) : 酒精燈

ntuchemistrylab
39K views • 11 years ago
CC



基礎化學實驗技能 (2) : 電磁加熱攪拌器

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基礎化學實驗技能 (3) : 水銀氣壓計

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基礎化學實驗技能 (4) : 排水集氣法

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基礎化學實驗技能 (5) : 傾析

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普通化學實驗

▶ PLAY ALL



普通化學實驗 (1) : 氮氣之莫耳體積

ntuchemistrylab
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普通化學實驗 (2) : 化合物化學式的決定

ntuchemistrylab
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普通化學實驗 (3) : 太陽能電池

ntuchemistrylab
111K views • 11 years ago



普通化學實驗 (4) : 直接甲醇燃料電池

ntuchemistrylab
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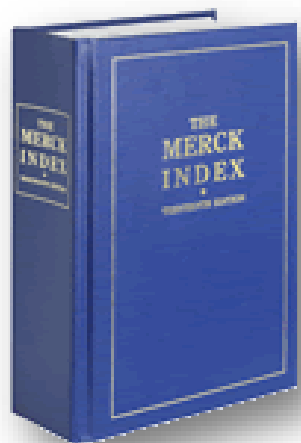
普通化學實驗 (5) : 導電塑膠聚苯胺

ntuchemistrylab
8.3K views • 10 years ago



The Merck Index

An encyclopedia of chemicals, drugs, and biologicals



(1) No. Monograph number → **9571**

(2) Name Title → **α -Tocopherol.**

(3) CAS No. Chemical Abstracts Registry Number → [59-02-9]

(4) Name in CAS Chemical Abstracts Name → (2R)-3,4-Dihydro-2,5,7,8-tetramethyl-2-[(4R,8R)-4,8,12-trimethyltridecyl]-2H-1-benzopyran-6-ol; (+)-2,5,7,8-tetramethyl-2-(4',8',12'-trimethyltridecyl)-6-chroman-6-ol; *R,R*- α -tocopherol; *d*- α -tocopherol; 5,7,8-trimethyltolcol; Optovit; Tocovital. C29H50O2; mol wt 430.70.

(5) Alternate names Alternate names and/or trademarks (capitalized) of title compound

(6) Molecular weight Molecular weight

(7) Molecular formula Molecular formula

(8) Composition Percentage composition → 80.87%, H 11.70%, O 7.43%. Most bioactive of the naturally occurring forms of vitamin E, *a.v.* Richest sources are green vegetables, grains, and oils, particularly palm, safflower and sunflower oils. Isolated from wheat germ: H. M. Evans *et al.*, *J. Biol. Chem.* **113**, 319 (1936). Structure: E. Fernholz, *J. Am. Chem. Soc.* **59**, 1154 (1937); **60**, 700 (1938). Synthesis of *dl*-form: P. Karrer *et al.*, *Helv. Chim. Acta* **21**, 520, 820 (1938); F. Bergel *et al.*, *J. Chem. Soc.* **1938**, 1382. Total synthesis of all 8 stereoisomers: N. Cohen *et al.*, *Helv. Chim. Acta* **64**, 1158 (1981). Clinical trial in Alzheimer's disease: M. Sano *et al.*, *N. Engl. J. Med.* **336**, 1216 (1997); to improve immune function in healthy elderly: S. N. Meydani *et al.*, *J. Am. Med. Assoc.* **277**, 1380 (1997). Review of bioavailability from vitamin E supplements: M. G. Traber, *BioFactors* **10**, 115-120 (1999). Review of clinical trials in heart disease: W. A. Pryor, *Free Radical Biol. Med.* **28**, 141-164 (2000).

(9) Reference Literature references

(10) Chemical information Chemical information

(11) Other information Biological, pharmacological, etc. information



The Merck Index Online

- Available in NTU Main Library and Chemistry Library.
- Available online: <https://www.rsc.org/merck-index> (within NTU domain)

merckindex.rsc.org

ROYAL SOCIETY OF CHEMISTRY

THE MERCK INDEX[®] Online

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Home Browse monographs Advanced search Reference tables

Basic search

sulfamic acid

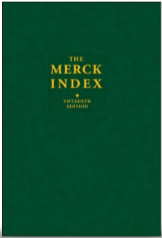
Last updated: 11th February 2025

Enter a Name, CAS Registry Number or Molecular Formula.

The Merck Index[®] Online

For over 130 years The Merck Index has been regarded as the most authoritative and reliable source of key physical, pharmacological and historical information on chemicals, drugs and biologicals. Since 2013, it has been updated by the Royal Society of Chemistry.

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SDS (Safety Data Sheet)

- When writing prelab exercises, use **The Merck index** for formula/formula weights and physical properties (density, etc.).
- Refer to **SDS** for toxicity information and potential hazards.
- *Information on Wikipedia may not always be correct.*

Google

SDS sulfamic acid

🔍 All 🖼 Images 🛒 Shopping ➦

About 29,100 results (0.40 seconds)

<https://www.carlroth.com> > SDB-4714-MT-EN

Safety Data Sheet: Sulphamic acid

Jun 17, 2015 — **Safety data sheet** according

Sulphamic acid ≥99 %, crystalline article num

You've visited this page 2 times. Last visit: 8/2

<https://beta-static.fishersci.com> > sds > chemicals-s PDF

Safety Data Sheet - Fisher Scientific

Mar 25, 2015 — **Sulfamic Acid**, ACS ... Provide **SDS** document t

Sulfamic Acid, Contains no substances with occupational.

6 pages

Safety data sheet

according to Regulation (EC) No. 1907/2006 (REACH)



Sulphamic acid ≥99 %, crystalline

article number: **4714**

Version: **3.0 en**

Replaces version of: 02.01.2017

Version: (2)

date of compilation: 17.06.2015

Revision: 17.12.2021

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Identification

Article number

Registration

Index number

EC number

CAS number

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008 (CLP)

Section	Hazard class	Cat-egory	Hazard class and category	Hazard statement
3.2	Skin corrosion/irritation	2	Skin Irrit. 2	H315
3.3	Serious eye damage/eye irritation	2	Eye Irrit. 2	H319
4.1C	Hazardous to the aquatic environment - chronic hazard	3	Aquatic Chronic 3	H412

For full text of abbreviations: see SECTION 16

The most important adverse physicochemical, human health and environmental effects

Malta (en)

Page 1 / 17



Online Resources – SDS

General Chemistry Laboratory [Home](#) [CHEMISTRY DEPT.](#) [NTU](#) [中文](#)

[NEWS](#) [LECTURE SLIDES](#) [VIDEO DEMONSTRATION](#) [HANDBOOKS](#) [LAB MANUAL](#) [CONTACT](#) [Q](#)

News

2025-02-05
Lab Safety Certification and Identification

2025-02-11
Leave of Absence Application for C

Lecture Slides

LECTURE SLIDES

LECTURE SLIDES

LECTURE SLIDES

LECTURE SLIDES

Laboratory policy and safety rule

Significant figures and laboratory report

General chemistry laboratory techniques

Molar volume of nitrogen gas

Handbooks

- Merck index online (NTU Campus)
- Safety Data Sheets (SDS)**
- Significant Figures
- Selected Fundamental Constants and Conversion Factors
- Standard Reduction Potentials
- Acid Dissociation Constants
- Base Dissociation Constants
- Solubility Product Constants
- Formation Constants of Complexes
- Vapor Pressure of Water
- Periodic Table of the Elements

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NTU-CH SDS

General Chemistry Laboratory

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10 entries per page

CAS No.	Name	中文名稱
7632-00-0	sodium nitrite	亞硝酸鈉
1303-96-4	sodium tetraborate decahydrate	十水合四硼酸鈉
10102-17-7	sodium thiosulfate pentahydrate	五水合硫代硫酸鈉
9005-84-9	soluble starch	可溶性澱粉
5329-14-6	sulfamic acid	胺基磺酸
7664-93-9	sulfuric acid	濃硫酸
62-55-5	thioacetamide	硫乙醯胺
10025-69-1	tin(II) chloride dihydrate	二水合氯化亞錫
10026-06-9	tin(IV) chloride pentahydrate	五水合氯化錫
50-81-7	vitamin C	維生素C

Showing 51 to 60 of 62 entries

SDS參考主要來源為『勞動部職業安全衛生署 GHS』及其他藥

Safety data sheet Safety data sheet

acc. to Safe Work Australia - Code of Practice

**Sulphamic acid ≥99,3 %, p.a., ACS**article number: **P725**
Version: **GHS 3.1 en**
Replaces version of: 2024-03-02
Version: (GHS 3)date of compilation: 2017-01-02
Revision: 2024-09-18

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1 Product identifier

Identification of the substance	Sulphamic acid ≥99,3 %, p.a., ACS
Article number	P725
CAS number	5329-14-6

1.2 Relevant identified uses of the substance or mixture and uses advised against

Relevant identified uses:	Laboratory chemical Laboratory and analytical use
Uses advised against:	Do not use for private purposes (household). Food, drink and animal feedingstuffs.

1.3 Details of the supplier of the safety data sheet

Carl Roth GmbH + Co. KG
Schoemperlenstr. 3-5
D-76185 Karlsruhe
GermanyTelephone: +49 (0) 721 - 56 06 0
Telefax: +49 (0) 721 - 56 06 149
e-mail: sicherheit@carlroth.de
Website: www.carlroth.de

Competent person responsible for the safety data sheet: Department Health, Safety and Environment

e-mail (competent person): sicherheit@carlroth.de

1.4 Emergency telephone number

Name	Street	Postal code/city	Telephone	Website
NSW Poisons Information Centre Childrens Hospital	Hawkesbury Road	2145 Westmead, NSW	131126	

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification acc. to GHS



GHS

The Globally Harmonized System of Classification & Labelling of Chemicals, GHS

GHS pictogram	 Health Hazard	 Flammable	 Serious Health hazard	 Corrosive	 Hazardous to the Environment
GHS pictogram	 Toxic	 Oxidizing	 Explosive	 Compressed Gas	

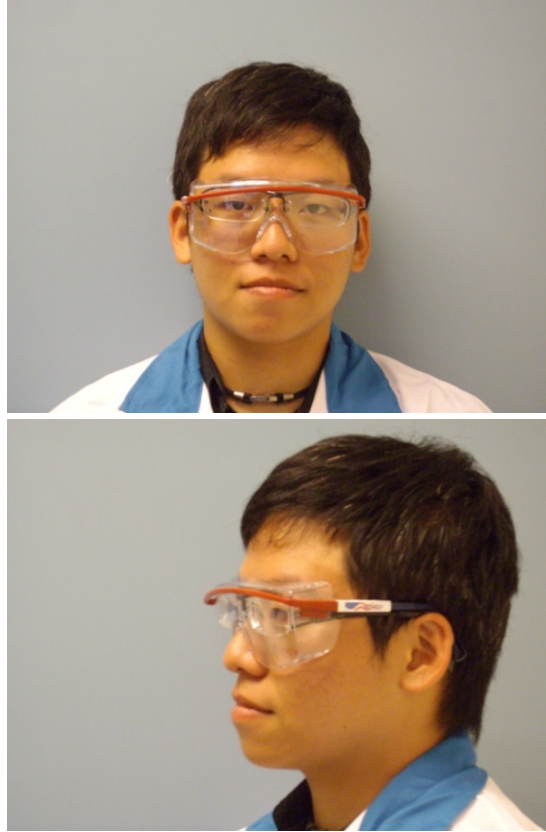


Safety Guidelines I

1. Safety goggle and lab coat must be worn at all times in the laboratory (put them on before entering the lab door).
2. Contact lenses and sunglasses are forbidden.
3. Long hair should be tied back.
4. No hair spray.
5. Long pants and closed-toe shoes are required (no flip-flops or sandals).
6. You may borrow safety goggles and lab coats from your TA (incurs grade deduction starting from the 2nd time).
7. Bring your National Health Insurance ID card (健保卡) to the lab class.



Personal Protection Equipment



- Wear appropriate personal protection equipment (long pants, closed-toe shoes, lab coat, and goggles)
- Long hair should be tied back



Personal Protection Equipment (Goggle)

- Available in university shops or online.
- Must have side shields to protect from sprayed chemicals.
- Try out which design fits you the best (especially if you wear glasses).
- Contact lenses are forbidden in the laboratory.
- Do not use sunglasses as safety goggles.





Personal Protection Equipment (Lab Coat)

- Available in university shops or online.
- Preferably made of 100% cotton.

Cotton



Synthetic Fiber





Safety Guidelines II

8. If any accident occurs, deal with the situation calmly and report to the TA as soon as possible.
9. No food and drink is allowed in the lab.*
10. Cell phones should be turned off.*
If your phone goes off or you are found using the phone, 5 pts will be deducted from your semester grade. (Have your family call the stockroom at 3366-4195 or 3366-4196 in an emergency.)
11. Wash your hands thoroughly before leaving the lab.
12. Take your lab coat and goggles off after leaving the lab.

*** Violators will be assigned additional duties.**



Safety Guidelines III

13. No pranking or unauthorized experiments.
14. Park your bikes only in the designated parking area. Avoid obstructing any emergency exit.
15. Place your backpack and coat in the drawer or the designated cabinet. Do not put them on the lab floor and block the evacuation routes.
16. Clean your lab bench and personal equipment after each experiment. Replenish the inventory if anything is missing, then have the check list signed by an associate TA.
17. Hand in "**Lab Safety Certification and Identification**" (page *vii* of the lab manual) in the next class.



Safety Guidelines

Lab Safety Certification and Identification

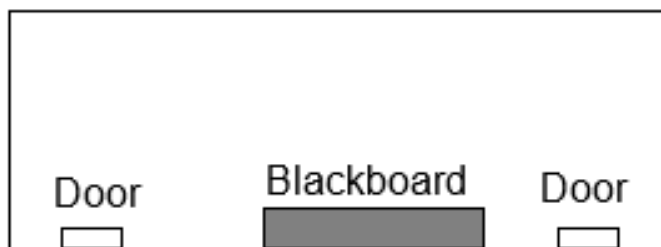
Photo

1. During the lab session, I will wear safety goggles to protect my eyes and will not wear contact lenses.
2. During the lab session, I will wear a laboratory coat and trousers. I will wear shoes that protect the entire foot and will not wear slippers or sandals.
3. I shall follow the safety rules and regulations in the lab.

I have read and understood the rules listed above.

Indicate the locations of the following items in the lab:

(A) Fire extinguisher; (B) Fire blanket; (C) Eye wash fountain; (D) Safety shower;
(E) First aid kit; (F) Chemical absorbent; (G) Fume hood



Signature: _____ Cell: _____
Student ID: _____ Group No.: _____
Dept: _____ Date: _____
Emergency Contact: _____
Contact cell: _____



Safety Guidelines (Lab Waste)

- **Contaminated waste** (weighing paper, used gloves, *etc.*) goes to the trash bins in the laboratory.
- **Shattered glass** goes to the designated glassware disposal box on either side of the laboratory.
- **A solution containing heavy metals or organic solvent** should be collected and poured into the designated chemical waste container. (Do NOT pour them into the sink).
- **Recyclable waste** (aluminum cans, papers, *etc.*) goes to the recycling bins.
- **Do NOT dispose of lunch boxes or drink cups** in trash bins in the laboratories or the restrooms. Neither should they be left in the hallway (students on duty will have to clean them).



Fume Hood

- Use a fume hood when operating organic solvents and volatile chemicals.
- Turn on the fan motor and lights before use.
- Maintain the slash window no higher than $\frac{1}{2}$ from the bottom.
- Do NOT put your head inside the fume hood.

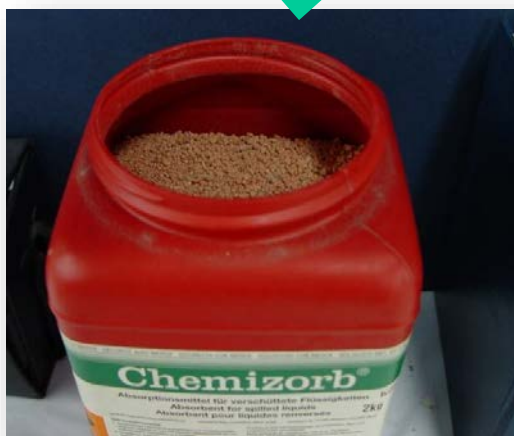




Safety Equipment in the Lab



First aid kits



Chemical
absorbent



Safety Data Sheet



Safety Equipment in the Lab



Emergency shower

(Remove contaminated clothes first)



Emergency eye wash

(Force eyes opened with fingers and rinse for at least 20 minutes)



Safety Equipment in the Lab



Fire extinguisher



Fire blanket



Fire sand



Using Fire Extinguishers (PASS)



1. **Pull** the pin.
2. **Aim** low, pointing the extinguisher nozzle (or its horn/hose) at the base of the fire.
3. **Squeeze** the handle to release the extinguishing agent.
4. **Sweep** from side to side at the base of the fire until it appears to be out.



Essential Lab Facilities



Drying oven



**Chemical waste
container**



Ice machine



Essential Lab Facilities



Fire sand & recycling bins



Glassware & lab waste disposal



Essential Lab Facilities (AED)

AED (automatic external defibrillator)
is located at the 1F foyer of Shi-Liang Hall



Cabinet for
your backpack
and
belongings

Shared shelf

Folded washcloth on the faucet
rack

Shared shelf

Hot plate

Sink

Lab bench

Your belongings

Stools tucked underneath the benchtop

Do not put your bag on the chairs / benchtop / ground.

*** Do not take the three-prong clamp off the stand on your lab bench.**

B30

Group 30 in Lab B

110-1 實驗清單及檢核表

日期	姓名	第一組	第二組	第三組	第四組	第五組	第六組	第七組	第八組	第九組	第十組	第十一組	第十二組	第十三組	第十四組	第十五組	第十六組	第十七組	第十八組	第十九組	第二十組	第二十一組	第二十二組	第二十三組	第二十四組	第二十五組	第二十六組	第二十七組	第二十八組	第二十九組	第三十組
9/1	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9/2	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9/3	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9/4	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9/5	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9/6	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9/7	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9/8	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9/9	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9/10	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9/11	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9/12	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
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9/14	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9/15	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9/16	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9/17	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9/18	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9/19	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9/20	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9/21	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
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9/23	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
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9/25	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9/26	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9/27	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9/28	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9/29	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
9/30	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...

Check list in the drawer

Personal equipment inventory in the plastic basin in the cabinet

Your belongings



Check List and Personal Equipment

品名 Item	規格 Specification	數量 Quantity
燒杯 Beaker	400 mL	1
燒杯 Beaker	250 mL	1
燒杯 Beaker	100 mL	4
量筒 Graduated cylinder	50 mL	1
量筒 Graduated cylinder	10 mL	1
試管 Test tube	$\phi 16 \times 100$ mm	10
試管架 Test tube rack	鐵製 stainless	1
玻璃棒 Glass rod	$\phi 6$ mm	1
藥匙 Spatula	塑膠製或鐵製 plastic or stainless	1
鑷子 Tweezer	鐵製或塑膠製 plastic or stainless	1
塑膠燒杯 Plastic beaker	1000 mL	1
洗滌瓶 Wash bottle	500 mL	1

Equipment should be clean and free of sticky labels





Inventory Check Out List

113-1 器材清點及補齊後簽名表

簽名 日期	週一上午		週一下午		週二上午		週二下午		週三下午		週四下午		週五下午	
	學生 簽名	助理 助教	學生 簽名	助理 助教	學生 簽名	助理 助教	學生 簽名	助理 助教	學生 簽名	助理 助教	學生 簽名	助理 助教	學生 簽名	助理 助教
8/26~8/30														
9/2~9/6														
9/9~9/13	Student sign here	ATA sign here												
9/16~9/20														
9/23~9/27														
9/30~10/4														
10/7~10/11														
10/14~10/18														
10/21~10/25														
10/28~11/1														
11/4~11/8														
11/11~11/15														
11/18~11/22														
11/25~11/29														
12/2~12/6														
12/9~12/13														
12/16~12/20														

品名、規格及數量請看背頁

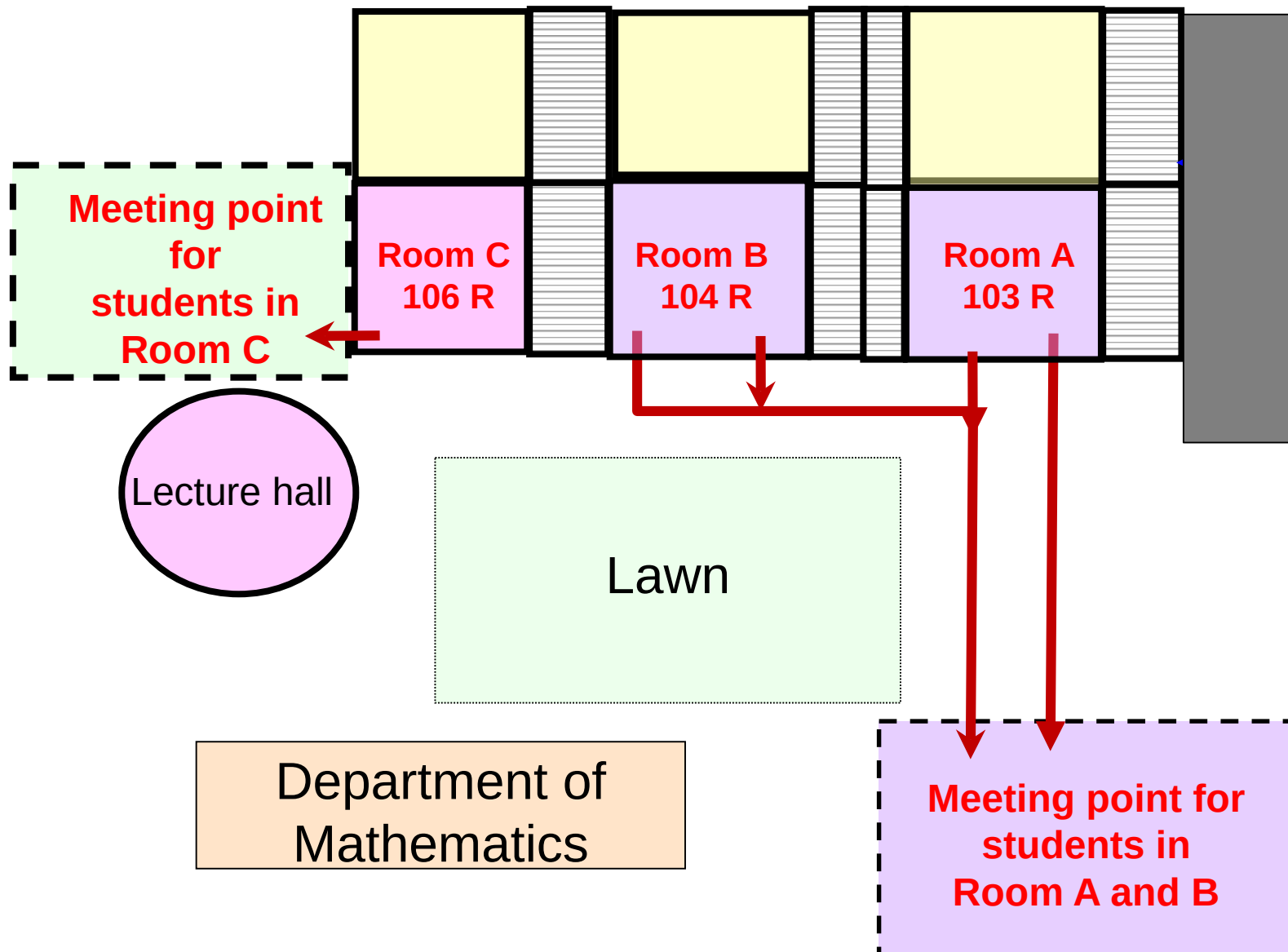


Students on Duty

- **All students will take turns.**
- **The associate TAs will assign and inspect your works, which include:**
 - ✓ Clean the blackboard and erasers
 - ✓ Organize chemicals and clean analytical balances
 - ✓ Clean the fume hoods and the common area
 - ✓ Put all stools under the lab bench
 - ✓ Sort out trash bins and recycling bins
 - ✓ Sweep and mop lab floor and the aisle outside the lab
 - ✓ Unplug instruments and turn off the water supply



Evacuation Route





Before Next Lab

- Write your prelab exercise (lab manual, *The Merck Index*, *SDS*).
- View
 - [Guidelines on writing lab reports and using significant figures](#)
 - [Lab technique videos](#)
 - [Demo video](#) (E1/E2/E11)

