

國立成功大學核設中心微奈米科技組無塵室內實驗用化學藥品使用法守則

Rules for Using Experimental Chemicals in the Cleanroom of Micro/Nano Science and Technology Group, Core Facility Center, NCKU

103.03.19 中心會議修訂

110.03.11 幹部會議修訂

Amended in the center's meeting on March 19, 2014

Amended in the center's caucus on March 11, 2021

1. 實驗用化學藥品分為強酸、強鹼、有機溶劑和氫氟酸 (HF) 等四類。
Experimental chemicals are divided into four categories: strong acids, strong bases, organic solvents, and hydrofluoric acid (HF).
2. 使用化學藥品必須登記使用人的姓名和使用量。
To have access to chemicals, the name of the user and volume involved in the usage shall be recorded.
3. 杯內有強酸、強鹼、有機溶劑和氫氟酸 (HF) 或特殊化學藥品時，必須標明使用者姓名、溶液名稱、日期、聯絡電話，不可沒有標示而隨意置放。
When there are strong acids, strong bases, organic solvents, and HF or special chemicals in the beaker, it is required to show the name of the user, the name of the liquid, date, and contact number. It is disallowed to freely place chemicals that are unlabeled.
4. 抽風櫃分為酸液、鹼液、有機化學及混合型等四種。
Fume hoods are divided into four types, namely for acid liquid, base liquid, organic chemicals, and mixed liquid.
5. 處理或使用酸液、鹼液、氧化劑及有機溶劑等必須在專屬之抽風櫃內為之，且其抽風櫃之玻璃窗高度，應低於人員操作時之呼吸帶高度。
Processing or using acid liquid, base liquid, oxidants, and organic solvents, among others, needs to take place inside the exclusive fume hood and the height of the glass window of the fume hood shall be below the breathing zone of the operators.
6. 抽風櫃內應保持整潔，不可放置與實驗無關之物品。
The interior of the fume hood shall be kept tidy and neat. Do not place items irrelevant to the experiment.
7. 混合酸液時，必須將酸液慢慢倒入水中，絕不可將水倒入酸中，調和後，應使之冷卻之後才能蓋緊存放，否則會因熱膨脹而造成傷害。
To mix acid liquid, it is required to pour the acid liquid slowly into water. Do not pour water into the acid liquid. After it is mixed, it shall be left to cool down before it is covered and stored; otherwise, harm can result due to thermal expansion.
8. 勿將酸液和有機溶劑混合傾倒，以避免爆炸。
Do not dump acid liquid together with organic solvents as explosion might occur.
9. 酸類用完後，若不再用，須待至溫度降至室溫時，加以稀釋後才倒入廢液桶內。
After using the acid, if no longer needed, it is required to wait for the temperature to drop to room temperature, dilute it, and then dump the acid into the waste liquid tank.
10. 稀釋強酸強鹼時，必須戴上抗酸鹼手套並且在專屬抽風櫃內中進行。
Upon dilution of strong acid and strong base liquid, it is required to wear anti-acid or anti-base gloves and perform the process inside an exclusive fume hood.
11. 濺出來的化學藥品必須立即清理；強酸類，可用固體的碳酸氫鈉中和，再用清水清洗；強鹼類，可用清水清洗，再用稀醋酸清洗。
Spilled chemicals shall be cleaned up right away. For strong acids, they may be neutralized with solid sodium bicarbonate before cleaning with water. For strong bases, water may be used for cleaning followed by diluted acetic acid.
12. 氫氟酸 (HF) 的處理應特別小心，勿觸及皮膚，若一旦觸及皮膚，則盡速用水流沖洗，再塗上葡萄糖酸鈣軟膏（在抽風櫃左方櫃子裡）中和，然後立刻送醫【氫氟酸 (HF) 最為危險，會吸收身體內的鈣質，使變成軟骨而死亡】。

Extra caution is recommended in the treatment of HF; do not let it contact your skin. In case of skin exposure, use running water to rinse it immediately, followed by putting on the calcium gluconate gel (inside the cabinet next to the fume hoods) for neutralization, and seek medical attention [HF is the most dangerous as it will absorb calcium inside the body to turn bones soft and result in death].

13. 已倒出之化學藥品不可再倒入原來的容器（即使未曾使用過）。
Do not return poured chemicals into their original containers (even if they are not used).
14. 未倒出使用之剩餘化學藥品，必須歸回原位。
Remaining chemicals in the containers shall be returned to where they were.
15. 化學藥品用完之空瓶應放到空瓶回收處（廢液槽旁）。
Empty bottles after chemicals are used up shall be collected in the empty bottle recycling tank (next to the waste liquid tank).
16. 化學藥品用完之空瓶內，不得放入任何種類的不名液體而留放在工作台上或附近之處。
It is disallowed to place any unknown liquids in empty bottles after chemicals are used up and keep the bottles on the workbenches or in an adjacent area.
17. 使用過的化學藥品，必須依各類化學藥品廢液種類倒入專屬回收桶（回收桶在抽風櫃下方）。
Used chemicals shall be dumped in the exclusive waste liquid tanks (underneath the fume hoods) according to the category they belong.
18. 使用特殊化學藥品和攜帶特殊化學藥品及材料時，必須要事先登記。
Prior registration is required for using special chemicals or bringing special chemicals and materials into the common laboratory.
19. 絕不可用口、鼻去嘗、嗅化學藥品，也不可以口就吸量管吸取藥品。
Never try to taste or smell chemicals with your mouth or nose and do not suck up chemicals through a pipette in contact with your mouth.
20. 加熱器、烘箱等加熱設備旁嚴禁放置易燃性及易爆性化學藥品。
It is strictly prohibited to place inflammable and combustible chemicals next to heating equipment such as heaters and ovens.
21. 從事任何實驗前，應確認做好安全評估，充分了解使用設備之安全狀況及使用藥品之毒性、物性、化性及正確使用方法，並對製程可能發生之中間產物及危害提出預防方法，並採取適當的防護措施。
Before any experiment begins, make sure that safety assessment is completed as well as that you have a sufficient understanding of the safety status of the equipment and the toxicity, physical and chemical property, and correct usage of the chemicals and have preventive measures ready for possible intermediates and hazards during the process and apply proper protection.