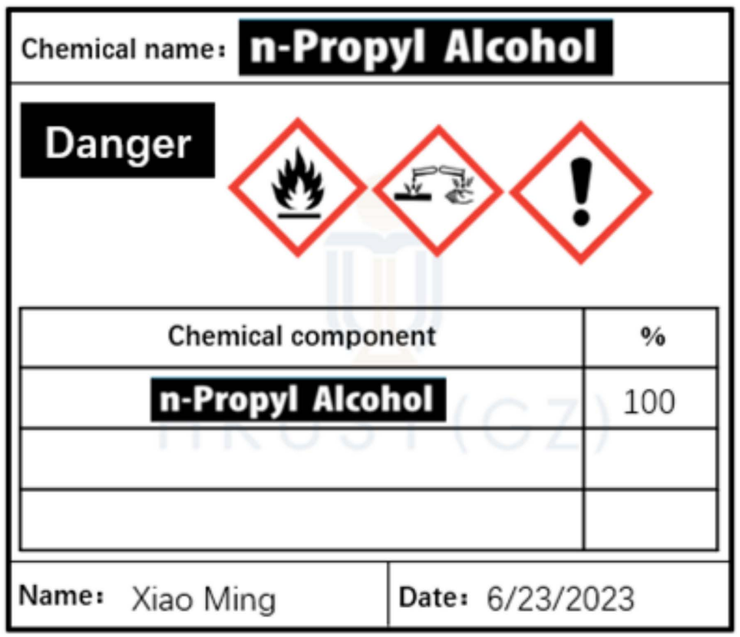
安全时刻

NO. 010
2024年3月15日

实验室化学品储存良好做法（ I ）

1. 化学品储存在盖子紧闭的良好状态的兼容容器中，尽量保持化学品容器上原始标签完整。 如果标签不清晰则更换，确保所有容器（含自配化学品的容器）都贴有适当的标签（请参照图一），标签张贴位置易于查看。



图一：化学品容器标签（危险品）

2. 储存化学品最常见和最有效的策略之一是利用简单的三步法[1]。

首先，化学品按照物态（固体、液体和气体）进行分类。如果危险气体存放在气体柜或经批准的排气设施之外，它们有特定的储存要求。

其次，存放化学品时应尽量将不相容的化学品分开或隔离。化学品按照与其他化学品不相容性进行分组。请参考“化学不相容性表[3]”，了解一些特定化学品的储存不相容性。对于具体咨询，CAMEO Chemicals | NOAA[4]也是很好的参考资源。通常将具有相同化学反应性的化学品放在一起（相容化学品储存组）来实现此目的。如果不相容的化学品必须存放在同一个柜子中，需提供二次防护容器和隔离措施。

图二：化学品分隔、分类、隔离的规则[2]

最后，同一化学品储存组内的相容化学品建议按化学品名称的字母顺序、分子式的碳链长度和金属/配位离子等常见且有效的方法进行分类，以便容易找到和放回。

[1] Storage | Office of Environmental Health and Safety (princeton.edu)
[2] Olga Kuzmina. ACS Chem. Health Saf. 2022, 29, 62-71
[3] https://ehs.princeton.edu/sites/g/files/toruqf5671/files/Chemical%20Compatibility%20Storage%20Codes%20-%20redacted.pdf
[4] https://cameochemicals.noaa.gov/

Safety Moment

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Good Practices for Chemical Storage in Labs (I)

1. Store in compatible containers that are in good condition with lids tightly closed. Do not remove original labels from containers. Replace labels if they are not legible, make sure all containers are labeled (see Figure 1) with contents and are oriented so label is visible.

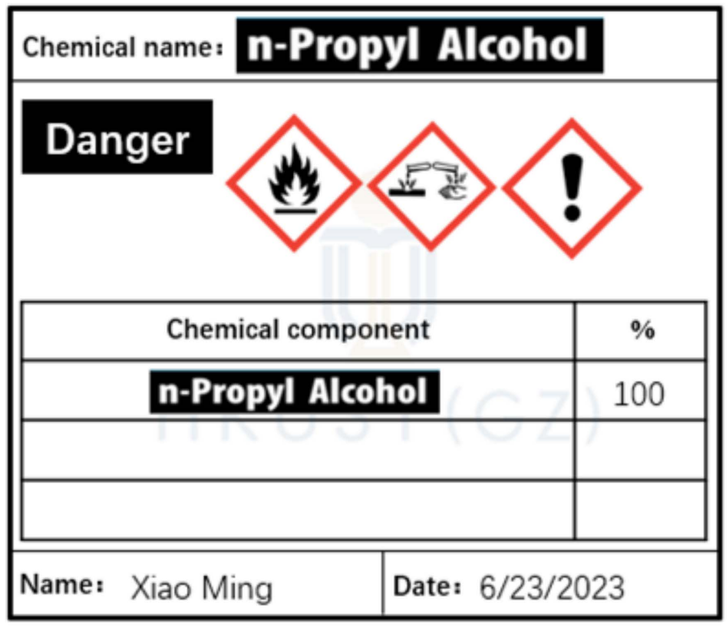

Figure 1. Chemical Container Label (Danger)

2. One of the most common and effective strategy for storing chemicals is utilizes a simple three-step approach [1].

First, materials are sorted by physical state (solids, liquids, and gases). Hazardous gases have particular storage requirements if they are stored outside of a gas cabinet or approved exhausted enclosure.
Next, segregate materials from other incompatible materials (see Figure 2). This is typically accomplished by grouping materials together with the same chemical reactivities (Chemical Storage Groups). Please see the "Chemical Incompatibility Chart[3]" for additional specific chemical storage incompatibilities. For specific inquiries, CAMEO Chemicals | NOAA[4] is also a great resource. If incompatible materials must be stored in the same cabinet, should provide secondary containment and segregation.

Figure 2. Principles of chemical separation (a), segregation (b), and isolation (c)[2].

Finally, the compatible materials within a Chemical Storage Group should be organized so that it will be easy to find and return containers. Organization approaches such as alphabetical (by name), carbon-length, and metal/counter-ion are commonly and effectively used.

[1] Storage | Office of Environmental Health and Safety (princeton.edu)
[2] Olga Kuzmina. ACS Chem. Health Saf. 2022, 29, 62-71
[3] https://ehs.princeton.edu/sites/g/files/toruqf5671/files/Chemical%20Compatibility%20Storage%20Codes%20-%20redacted.pdf
[4] https://cameochemicals.noaa.gov/