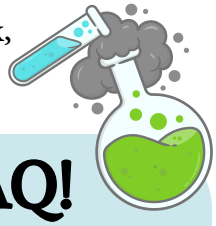
COLUMBIA UNIVERSITY
IN THE CITY OF NEW YORK

Chemical Storage

FAQ Sheet

Proper chemical storage and segregation is one of the most important foundations of laboratory and facility safety. Whether in research labs, hospitals, industrial plants, or schools, chemicals must be stored based on hazard class and compatibility, not convenience. When incompatible chemicals mix, intentionally or accidentally, the result can be fires, toxic gas releases, or even explosions.



Regulatory Compliance

The Fire Department of the City of New York (FDNY) strictly regulates chemical storage under the NYC Fire Code to reduce fire hazards and protect first responders. Storing chemicals correctly mitigates fire risks, prevents dangerous reactions, and maintains regulatory standards.

Fun FAQ!

Acids are not one happy family. Oxidizing acids (like nitric acid) must be isolated from organic acids and many other materials.

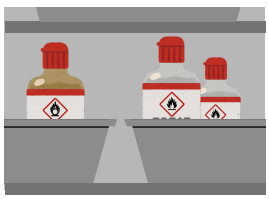
Common Chemical Incompatibilities

Understanding incompatibilities is key to segregation. Below are common examples:

Incompatible Pair	Example	The Risk
Oxidizers + Flammables	Hydrogen Peroxide + Ethanol	Oxidizers provide concentrated oxygen, turning a small flame into an uncontrollable inferno.
Acids + Bases	Sulfuric Acid + Sodium Hydroxide	Neutralization reactions are highly exothermic, causing violent splashing or container failure.
Inorganic + Organic Acids	Sulfuric Acid + Acetic Acid	Mixing oxidizing mineral acids with organic acids can trigger violent decomposition.
Cyanides + Acids	Sodium Cyanide + Hydrochloric Acid	Contact produces Hydrogen Cyanide (HCN), a lethal, colorless gas.

Improving Chemical Storage Practices

1. Store by hazard class. Alphabetical storage can place nitric acid next to naphthalene, an example of a dangerous pairing. Instead, organize by hazard class.
2. Separate incompatible materials physically. If separate cabinets aren't available, use different shelves, and utilize secondary containment.
3. Ensure all containers are clearly labeled, and promptly remove any expired or unknown chemicals to prevent hazardous degradation.



Chemical storage and segregation are not just regulatory requirements—they are life safety measures. By following best practices, personnel can prevent accidents before they happen. For more information on proper chemical storage and segregation practices, please complete TC2100: Chemical Storage and Segregation 101, available in RASCAL.

Have more questions? Reach out to EH&S at Labsafety@columbia.edu or give us a call

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< TC2100: Chemical Storage and Segregation 101

Chemical Segregation and Storage Chart. >