DS Fact Sheet on **Compatible Chemical Storage**

National Institutes of Health (NIH) • Office of Research Services (ORS) • Division of Safety (DS)

Chemical Storage

Chemicals should be separated by hazard class and stored in appropriate chemical storage cabinets. Consult NIH Chemical Hygiene Plan (CHP) and NIH Chemical Safety Guide. Secondary containment should be used for all hazardous liquids to avoid accidental mixing of incompatible chemicals. Secondary containment must have sufficient capacity to contain 10% of the volume of containers or the volume of the largest container stored within, whichever is greater. All secondary containers should be made of Nalgene trays or an equivalent non-reactive plastic such as polypropylene or polyethylene. Chemicals should never be alphabetized until they are segregated by hazard class first.
For all chemicals, please refer to the manufacturer's Safety Data Sheet (SDS) (Section 7: Handling and Storage, Section 10: Stability and Reactivity) for specific storage requirements. Label all storage areas for the hazard present.

If your lab works with small quantities of chemicals and space does not allow for separate Storage Groups, the following scheme can be used with extra care taken to provide stable, uncrowded, and carefully monitored storage conditions.

Storage Groups

Storage Code	Chemical Storage Groups	Examples
A	Compatible Organic Bases	Methylamine, Phenylamine, Amines
B*	Compatible Pyrophoric & Water-Reactive Materials	Lithium, Sodium borohydride
C	Compatible Inorganic Bases	Sodium hydroxide, Potassium hydroxide, Ammonium hydroxide
D	Compatible Organic Acids	Acetic acid, Trichloroacetic acid, Lactic acid
E	Compatible Oxidizers including Peroxides	Nitrates, Hydrogen Peroxide
F	Compatible Inorganic Acids (not including Oxidizers or Combustible)	Hydrochloric acid, Hydrofluoric acid
G	Not Intrinsically Reactive or Flammable or Combustible (Compatible with Anything)	Agars, Buffers, Sodium chloride etc.
OA*	Compatible Strong, Oxidizing Acids	Nitric acid, Perchloric acid, Sulfuric acid
J*	Toxic/flammable/oxidizer/corrosive Compressed Gas	Carbon monoxide, Hydrogen sulfide, Nitrogen Dioxide
K*	Compatible Explosive or other highly Unstable Material	Picric acid, Urea nitrate, Tetrazole
L	Non-Reactive Flammable and Combustible, including solvents	Ethanol, Methanol, Hexane, Acetonitrile
X*	Incompatible with ALL other Chemical Storage Groups (including other chemicals within X)	Benzol peroxide, Methyl Ethyl Ketone peroxide, Acetyl peroxide

***** *These materials require special handling & storage conditions. Use extreme caution. For specific storage, consult the manufacturer's SDS. Storage Groups B, J, K and X: Consultation is required with the NIH Division of Safety (DS).*

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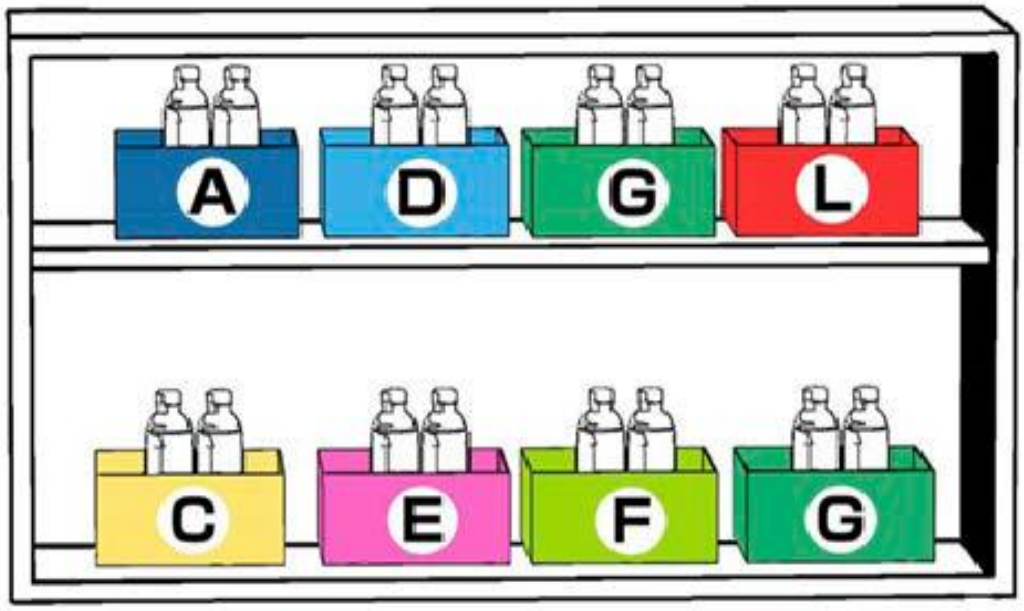
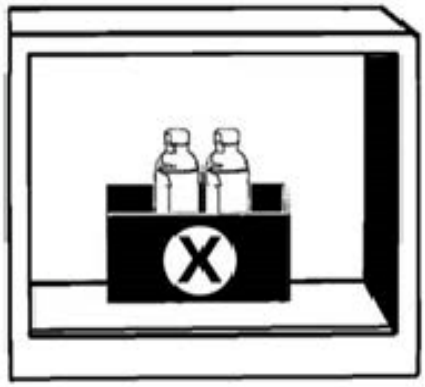
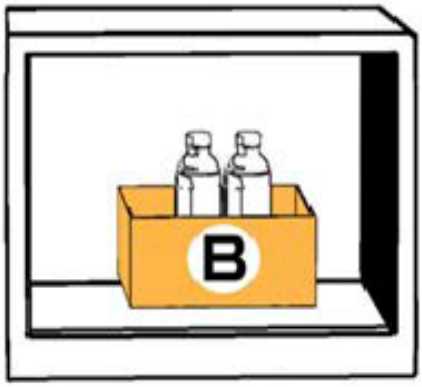
Storage Groups (Continued)



- Group X must be segregated from all other chemicals.
- Chemicals within Group X must be segregated from each other.
- Group B must be segregated from all other chemicals.
- Flammables above 500ml/g must be stored in flammable cabinets.





References:

1. https://ehs.stanford.edu/wp-content/uploads/Storage-Group-Poster.pdf?1719494991
2. https://www.ncbi.nlm.nih.gov/books/NBK55878/pdf/Bookshelf_NBK55878.pdf