**Suggested Shelf Storage Pattern**

A suggested arrangement of compatible chemical families on shelves in a chemical storage room, suggested by the *Flinn Chemical Catalog/Reference Manual*. However, the list of chemicals below does not mean that these chemicals should be used in a high school laboratory.

* First sort chemicals into organic and inorganic classes
* Next, separate into the following compatible families

|  |  |
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| **Inorganics** | **Organics** |
| 1. Metals, Hydrides
 | 1. Acids, Anhydrides, Peracids
 |
| 1. Halides, Halogens, Phosphates, Sulfates, Sulfites, Thiosulfates
 | 1. Alcohols, Amides, Amines, Glycols, Imides, Imines
 |
| 1. Amides, Azides\*, Nitrates\* (except Ammonium nitrate), Nitrites\*, Nitric acid
 | 1. Aldehydes, Esters, Hydrocarbons
 |
| 1. Carbon, Carbonates, Hydroxides, Oxides, Silicates
 | 1. Ethers\*, Ethylene oxide, Halogenated hydrocarbons, Ketenes, Ketones
 |
| 1. Carbides, Nitrides, Phosphides, Selenides, Sulfides
 | 1. Epoxy compounds, Isocyanates
 |
| 1. Chlorates, Chlorites, Hydrogen Peroxide\*, Hypochlorites, Perchlorates\*, Perchloric acid\*, Peroxides
 | 1. Azides\*, Hydroperoxides, Peroxides
 |
| 1. Arsenates, Cyanates, Cyanides
 | 1. Nitriles, Polysulfides, Sulfides, Sulfoxides
 |
| 1. Borates, Chromates, Manganates, Permanganates
 | 1. Cresols, Phenols
 |
| 1. Acids (except Nitric acid)
 |  |
| 1. Arsenic, Phosphorous\*, Phosphorous Pentoxide\*, Sulfur
 |  |

*\*Chemicals deserving special attention because of their potential instability.*

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| **Suggested Shelf Storage Pattern for Inorganics** |
| **Inorganic #10** Arsenic, Phosphorous Phosphorous Pentoxide, Sulfur | **Inorganic #7** Arsenates, Cyanates, Cyanides STORE AWAY FROM WATER |
| **Inorganic #2** Halides, Halogens, Phosphates, Sulfates, Sulfites, Thiosulfate | **Inorganic #5** Carbides, Nitrides, Phosphides, Selenides, Sulfides |
| **Inorganic #3** Amides, Azides, Nitrates, Nitrites EXCEPT Ammonium nitrate - STORE AMMONIUM NITRATE AWAY FROM ALL OTHER SUBSTANCES | **Inorganic #8** Borates, Chromates, Manganates, Permanganates |
| **Inorganic #1** Hydrides, Metals STORE AWAY FROM WATER; STORE ANY FLAMMABLE SOLIDS IN DEDICATED CABINET | **Inorganic #6** Chlorates, Chlorites, Hypochlorites, Hydrogen Peroxide, Perchlorates, Perchloric acid, Peroxides |
| **Inorganic #4** Carbon, Carbonate Hydroxides, Oxides, Silicates | **Miscellaneous** |

**ACID STORAGE CABINET ACID INORGANIC #9**

Acids, EXCEPT Nitric acid – Store Nitric acid away from other acids unless the cabinet provides a separate compartment for nitric acid storage

**Do not store chemicals on the floor**

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| **Suggested Shelf Storage Pattern for Organics** |
| **Organic #2** Alcohols, Amides, Amines, Imides, Imines, Glycols STORE FLAMMABLES IN A DEDICATED CABINET |  | **Organic #8** Cresols, Phenol |  |  |
| POISON STORAGE CABINETToxic substances |
|  |
| **Organic #3** Aldehydes, esters, hydrocarbons STORE FLAMMABLES IN A DEDICATED CABINET |  | **Organic #6** Azides, Hydroperoxides, Peroxides |  | FLAMMABLE STORAGE CABINET FLAMMABLE ORGANIC #2 Alcohols, Glycols, etc. |
| **Organic #4** Ethers, Ethylene oxide, Halogenated Hydrocarbons, Ketenes, Ketones STORE FLAMMABLES IN A DEDICATED CABINE |  | **Organic #1** Acids, Anhydrides, Peracids STORE CERTAIN ORGANIC ACIDS IN ACID CABINET |  | FLAMMABLE ORGANIC #3 Hydrocarbons, Esters, etc. |
| **Organic #5** Epoxy compounds, Isocyanate |  | **Miscellaneous** |  | FLAMMABLE ORGANIC #4 |
| **Organic #7** Nitriles, Polysulfides, Sulfides, Sulfoxides, etc. |  | **Miscellaneous** |  |  |

**Do not store chemicals on the floor**