**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

|  |  |
| --- | --- |
| **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 CABINET  Toxic 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**