**Chemical Incompatibilities** (Partial List) (this document courtesy of Univ. of Kansas)

These listings were taken from ‘Prudent Practices in the Laboratory, 2nd edition.’
They are not considered to be exhaustive.

<table>
<thead>
<tr>
<th>CHEMICAL</th>
<th>INCOMPATIBLE CHEMICAL(S)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acetic acid</td>
<td>aldehyde, bases, chromic acid, carbonates, hydroxides, metals, oxidizers, nitric acid,</td>
</tr>
<tr>
<td></td>
<td>peroxydes, permanganates, phosphates, xylene</td>
</tr>
<tr>
<td>Acetic anhydride</td>
<td>Hydroxyl-containing compounds such as ethylene glycol, perchloric acid</td>
</tr>
<tr>
<td>Acetylene</td>
<td>halogens (chlorine, fluorine, etc.), mercury, potassium, oxidizers, silver</td>
</tr>
<tr>
<td>Acetone</td>
<td>acids, amines, oxidizers, plastics</td>
</tr>
<tr>
<td>Alkali and alkaline</td>
<td>acids, carbon dioxide, carbon tetrachloride, chlorinated</td>
</tr>
<tr>
<td>earth metals</td>
<td>hydrocarbons, chromium, ethylene, halogens, hydrogen, mercury, nitrogen, oxidizers,</td>
</tr>
<tr>
<td></td>
<td>plastics, sodium chloride, sulfur</td>
</tr>
<tr>
<td>Ammonia (anhydrous)</td>
<td>acids, aldehydes, amides, bromine, calcium hypochlorite, chlorine, halogens, heavy</td>
</tr>
<tr>
<td></td>
<td>metals, hydrogen fluoride, iodine, mercury, oxidizers, plastics, sulfur</td>
</tr>
<tr>
<td>Ammonium nitrate</td>
<td>acids, alkalis, chlorates, combustible materials, metals, organic materials, reducing</td>
</tr>
<tr>
<td></td>
<td>agents, urea</td>
</tr>
<tr>
<td>Aniline</td>
<td>acids, aluminum, dibenzoyl peroxide, oxidizers, plastics</td>
</tr>
<tr>
<td>Azides</td>
<td>acids, heavy metals, oxidizers</td>
</tr>
<tr>
<td>Bromine</td>
<td>ammonia, acetaldehyde, acetylene, alcohols, alkalis, amines, benzene, butadiene,</td>
</tr>
<tr>
<td></td>
<td>butane, combustible materials, ethylene, fluorine, hydrogen, ketones (acetone,</td>
</tr>
<tr>
<td></td>
<td>carbonyls, etc.), metals, sodium carbide, sulfur</td>
</tr>
<tr>
<td>Calcium oxide</td>
<td>acids, ethanol, fluorine, organic materials, water</td>
</tr>
<tr>
<td>Carbon (activated)</td>
<td>alkali metals, calcium hypochlorite, halogens, oxidizers</td>
</tr>
</tbody>
</table>
### Chemical Incompatibilities (Partial List) - continued

<table>
<thead>
<tr>
<th>CHEMICAL</th>
<th>INCOMPATIBLE CHEMICAL(S)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon tetrachloride</td>
<td>benzoyl peroxide, ethylene, fluorine, metals, oxygen, plastics, silanes</td>
</tr>
<tr>
<td>Chlorates</td>
<td>ammonium salts, acids, powdered metals, sulfur, finely divided organic or combustible materials</td>
</tr>
<tr>
<td>Chromates</td>
<td>ammonia, carbon, metals, metal hydrides, nitrites, organic compounds, phosphorous, silicon, sulfur</td>
</tr>
<tr>
<td>Chromic acid and Chromium trioxide</td>
<td>acetic acid, acetone, alcohols, alkalis, ammonia, bases</td>
</tr>
<tr>
<td>Chlorine</td>
<td>alcohols, ammonia, benzene, combustible materials, flammable compounds (hydrazine), hydrocarbons (acetylene, ethylene, etc.), hydrogen peroxide, iodine, metals, nitrogen, oxygen, sodium hydroxide</td>
</tr>
<tr>
<td>Chlorine dioxide</td>
<td>ammonia, hydrogen, mercury, organic materials, phosphorous, potassium hydroxide, sulfur</td>
</tr>
<tr>
<td>Copper</td>
<td>acetylene, calcium, hydrocarbons, oxidizers</td>
</tr>
<tr>
<td>Cyanides</td>
<td>acids, alkaloids, aluminum, iodine, oxidizers, strong bases</td>
</tr>
<tr>
<td>Dichromates</td>
<td>ammonia, carbon, metals, metal hydrides, nitrites, organic compounds, phosphorous, silicon, sulfur</td>
</tr>
<tr>
<td>Flammable liquids</td>
<td>ammonium nitrate, chromic acid, hydrogen peroxide, nitric acid, sodium peroxide, halogens</td>
</tr>
<tr>
<td>Fluorine</td>
<td>Isolate from everything.</td>
</tr>
<tr>
<td>Halogens and Halogenating agents</td>
<td>ammonia, carbon, metals, metal hydrides, nitrites, organic compounds, phosphorous, silicon, sulfur</td>
</tr>
<tr>
<td>Hydrazine</td>
<td>Hydrogen peroxide, nitric acid, other oxidants</td>
</tr>
</tbody>
</table>
## Chemical Incompatibilities (Partial List) - continued

<table>
<thead>
<tr>
<th>CHEMICAL</th>
<th>INCOMPATIBLE CHEMICAL(S)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydrocarbons</td>
<td>acids, bases, halogens, oxidizers, peroxides, plastics</td>
</tr>
<tr>
<td>(Such as butane,</td>
<td></td>
</tr>
<tr>
<td>propane, benzene,</td>
<td></td>
</tr>
<tr>
<td>turpentine, etc.)</td>
<td></td>
</tr>
<tr>
<td>Hydrocyanic acid</td>
<td>Nitric acid, alkalis</td>
</tr>
<tr>
<td>Hydrofluoric acid</td>
<td>ammonia, metals, organic materials, plastics, silica (glass), (anhydrous) sodium</td>
</tr>
<tr>
<td>Hydrogen peroxide</td>
<td>acetaldehyde, acetic acid, acetone, alcohol's carboxylic acid, combustible materials,</td>
</tr>
<tr>
<td></td>
<td>metals, nitric acid, organic compounds, phosphorous, sulfuric acid, sodium, aniline</td>
</tr>
<tr>
<td>Hydrogen sulfide</td>
<td>acetaldehyde, metals, nitric acid, oxidizers, sodium</td>
</tr>
<tr>
<td>Hypochlorites</td>
<td>acids, activated carbon</td>
</tr>
<tr>
<td>Iodine</td>
<td>acetaldehyde, acetylene, ammonia, metals, sodium</td>
</tr>
<tr>
<td>Mercury</td>
<td>acetylene, aluminum, amines, ammonia, calcium, fulminic acid, lithium, oxidizers, sodium</td>
</tr>
<tr>
<td>Nitrates</td>
<td>acids, nitrites, metals, reducing agents, sulfur, sulfuric acid</td>
</tr>
<tr>
<td>Nitric acid</td>
<td>acetic acid, acetonitrile, alcohols, amines, (concentrated) ammonia, aniline, bases,</td>
</tr>
<tr>
<td></td>
<td>benzene, cumene, formic acid, ketones, metals, organic materials, plastics, sodium,</td>
</tr>
<tr>
<td></td>
<td>toluene</td>
</tr>
<tr>
<td>Nitrites</td>
<td>Acids, oxidizing agents</td>
</tr>
<tr>
<td>Nitroparaffins</td>
<td>Inorganic bases, amines</td>
</tr>
<tr>
<td>Organic compounds</td>
<td>Oxidizing agents</td>
</tr>
<tr>
<td>Organic acyl halides</td>
<td>Bases, organic hydroxyl and amino compounds</td>
</tr>
<tr>
<td>Organic anhydrides</td>
<td>Bases, organic hydroxyl and amino compounds</td>
</tr>
<tr>
<td>CHEMICAL</td>
<td>INCOMPATIBLE CHEMICAL(S)</td>
</tr>
<tr>
<td>--------------------------</td>
<td>------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Organic halogen compounds</td>
<td>Group IA and IIA metals, aluminum</td>
</tr>
<tr>
<td>Organic nitro compounds</td>
<td>Strong bases</td>
</tr>
<tr>
<td>Oxidizing agents</td>
<td>reducing agents, organic compounds</td>
</tr>
<tr>
<td>Oxalic acid</td>
<td>mercury and silver and their salts, oxidizers, sodium chlorite</td>
</tr>
<tr>
<td>Oxygen</td>
<td>acetaldehyde, secondary alcohols, alkalis and alkalines, ammonia, carbon monoxide,</td>
</tr>
<tr>
<td></td>
<td>combustible materials, ethers, flammable materials, grease, hydrogen, hydrocarbons,</td>
</tr>
<tr>
<td></td>
<td>metals, oils, phosphorous, polymers</td>
</tr>
<tr>
<td>Perchlorates</td>
<td>ammonia, carbon, metals, metal hydrides, nitrites, organic compounds, phosphorous,</td>
</tr>
<tr>
<td></td>
<td>silicon, sulfur</td>
</tr>
<tr>
<td>Perchloric acid</td>
<td>acetic acid, acetic anhydride, alcohols, aniline, bismuth and its alloys,</td>
</tr>
<tr>
<td></td>
<td>combustible materials, dehydrating agents, ethyl benzene, grease, hydroiodic acid,</td>
</tr>
<tr>
<td></td>
<td>hydrochloric acid, iodides, ketones, organic materials, oils, oxidizers, paper, pyridine,</td>
</tr>
<tr>
<td></td>
<td>wood</td>
</tr>
<tr>
<td>Permanganates</td>
<td>ammonia, carbon, metals, metal hydrides, nitrites, organic compounds, phosphorous,</td>
</tr>
<tr>
<td></td>
<td>silicon, sulfur</td>
</tr>
<tr>
<td>Peroxides</td>
<td>ammonia, carbon, metals, metal hydrides, nitrites, organic compounds, phosphorous,</td>
</tr>
<tr>
<td></td>
<td>silicon, sulfur</td>
</tr>
<tr>
<td>Peroxides, organic</td>
<td>acids (organic or mineral), avoid friction, store cold</td>
</tr>
<tr>
<td>Persulfates</td>
<td>ammonia, carbon, metals, metal hydrides, nitrites, organic compounds, phosphorous,</td>
</tr>
<tr>
<td></td>
<td>silicon, sulfur</td>
</tr>
<tr>
<td>Phosphorus (white)</td>
<td>oxygen (pure and in air), alkalis</td>
</tr>
<tr>
<td>Phosphorous pentoxide</td>
<td>alcohols, strong bases, water</td>
</tr>
<tr>
<td>Potassium</td>
<td>acetylene, acids, alcohols, halogens, hydrazine, mercury, oxidizers, selenium, sulfur,</td>
</tr>
<tr>
<td></td>
<td>water</td>
</tr>
</tbody>
</table>
### Chemical Incompatibilities (Partial List) - continued

<table>
<thead>
<tr>
<th>CHEMICAL</th>
<th>INCOMPATIBLE CHEMICAL(S)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potassium chlorate</td>
<td>acids, ammonia, combustible materials, fluorine, hydrocarbons, metals, organic materials, sugars</td>
</tr>
<tr>
<td>Potassium perchlorate</td>
<td>alcohols, combustible materials, fluorine, hydrazine, metals, organic matter, reducing agents, sulfuric acid (also see chlorates)</td>
</tr>
<tr>
<td>Potassium permanganate</td>
<td>benzaldehyde, ethylene glycol, glycerol, sulfuric acid</td>
</tr>
<tr>
<td>Reducing agents</td>
<td>arsenates, arsenites, oxidizing agents, phosphorous, selenates, selenites, tellerium salts and oxides.</td>
</tr>
<tr>
<td>Silver and salts</td>
<td>acetylene, ammonia, fulminic acid, oxalic acid, oxidizers, ozonides, peroxyformic acid, tartaric acid,</td>
</tr>
<tr>
<td>Sodium</td>
<td>acids, hydrazine, metals, oxidizers, water</td>
</tr>
<tr>
<td>Sodium nitrate</td>
<td>acetic anhydride, acids, metals, organic matter, peroxyformic acid, reducing agents</td>
</tr>
<tr>
<td>Sodium nitrite</td>
<td>Ammonium nitrate and other ammonium salts</td>
</tr>
<tr>
<td>Sodium peroxide</td>
<td>any oxidizable substance; acetic acid, acetic anhydride, alcohols, benzaldehyde, benzene, carbon disulfide, ethyl acetate, ethylene glycol, furfural, glycerol, hydrogen sulfide metals, methyl acetate, oxidizers, peroxyformic acid, phosphorous, reducers, sugars, water</td>
</tr>
<tr>
<td>Sulfides</td>
<td>acids</td>
</tr>
<tr>
<td>Sulfuric acid</td>
<td>potassium chlorates, potassium perchlorate, potassium permanganate</td>
</tr>
</tbody>
</table>
Peroxidizable Compounds

These listings were taken from ‘Prudent Practices in the Laboratory, 2nd edition.”
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<table>
<thead>
<tr>
<th>Types of Compounds Known to Auto-oxidize to Form Peroxides</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aldehydes</td>
</tr>
<tr>
<td>Ethers - especially cyclic ethers and those containing primary and secondary alkyl groups (never distill an ether before it has been shown to be free of peroxide)</td>
</tr>
<tr>
<td>Compounds containing benzylic hydrogens</td>
</tr>
<tr>
<td>Compounds containing allylic hydrogens (C=C-CH), including most alkenes, vinyl and vinylidene compounds</td>
</tr>
<tr>
<td>Compounds containing a tertiary C-H group (e.g., decalin and 2,5-dimethylhexane)</td>
</tr>
</tbody>
</table>
Peroxidizable Compounds - Continued

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Classes of Chemicals that can Form Peroxides upon Aging

Class I: Unsaturated materials, especially those of low molecular weight, may polymerize violently and hazardouslly due to peroxide initiation.

Acrylic acid
Acrylonitrile
Butadiene
Chlorobutadiene (Chloroprene)
Chlorotrifluoroethylene
Methyl methacrylate
Styrene

Acrylonitrile
Vinyl acetate
Vinyl acetylene
Vinyl chloride
Vinyl pyridine
Vinylidene chloride

Class II: The following chemicals are a peroxide hazard upon concentration (distillation and or evaporation). A test for peroxide should be performed if concentration is intended or suspected.

Acetal
Cumene
Cyclohexane
Cyclooctene
Cyclopentane
Diacetylene
Dicyclopentadiene
Dioctyl glycol dimethyl ether (diglyme)
Dietethyl ether

Dioxane (p-dioxane)
Ethylene glycol dimethyl ether (glyme)
Furan
Methyl acetylene
Methyl cyclopentane
Methyl-i-butyl-ketone
Tetrahydrofuran
Tetrahydronaphthalene
Vinyl ethers

Class III: Peroxides derived from the following compounds may explode without concentration

Organic
Inorganic
Divinyl ether
Potassium metal
Divinyl acetylene
Potassium amide
Isopropyl ether
Sodium amide (sodamide)
Vinylidene chloride
Potentially Explosive Compounds

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Potentially Explosive Functional Groups in Some Compounds

<table>
<thead>
<tr>
<th>Structural Feature</th>
<th>Compound</th>
</tr>
</thead>
<tbody>
<tr>
<td>−C≡C−</td>
<td>Acetylenic compound</td>
</tr>
<tr>
<td>−C≡C−M</td>
<td>Metal acetylide or carbide</td>
</tr>
<tr>
<td>−C≡C−X</td>
<td>Haloacetylide</td>
</tr>
<tr>
<td>(\text{CN}_2)</td>
<td>Diazo compounds</td>
</tr>
<tr>
<td>(\text{C-N}=\text{O})</td>
<td>Nitroso compounds</td>
</tr>
<tr>
<td>(\text{C-NO}_2)</td>
<td>Nitroalkanes, C-nitro and polynitroaryl compounds, polynitralkyl compounds, trinitroethyl compounds</td>
</tr>
<tr>
<td>C−O−N=O</td>
<td>Acyl or Alkyl nitrites</td>
</tr>
<tr>
<td>C−O−NO(_2)</td>
<td>Acyl or alkyl nitrates</td>
</tr>
<tr>
<td>C−O−O−C</td>
<td>Alkyl or acyl peroxides</td>
</tr>
<tr>
<td>(\text{C-O-O-H})</td>
<td>Alkyl hydroperoxides</td>
</tr>
<tr>
<td>(\text{C-O-C-O-O-C})</td>
<td>Dialkyl peroxycarbonates</td>
</tr>
<tr>
<td>CNO−M</td>
<td>Metal fulminates or aci-nitro salts, oximates</td>
</tr>
<tr>
<td>−N(_3)</td>
<td>Organic azides, acyl azides, metal azides, metal azide complexes</td>
</tr>
<tr>
<td>M(CO)(_n)</td>
<td>Transition metal-carbonyl compounds</td>
</tr>
<tr>
<td>−C≡N</td>
<td>Metal cyanides, organic nitriles, cyanogen halides</td>
</tr>
</tbody>
</table>
Potentially Explosive Compounds - continued

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Listing of Potentially Explosive Compounds/Classes (many are shock/heat/friction sensitive)

- Acetylenic compounds
- Difluoroamino compounds
- aci-Nitro salts
- Dinitroacetonitrile
- Acyl azides
- Dinitrobenzene (ortho)
- Acyl Nitrates
- 1,2-Epoxides
- Alkylhydroperoxides
- Ethyl methyl ketone peroxide
- Alkyl nitrates
- Ethyl nitrate
- Alkyl and acyl nitrites
- Fluorodinitromethyl compounds
- Alkyl perchlorates
- Fulminates
- Amine perchlorates
- Haloacetylenes and derivatives
- Amininechromiumperoxo complexes
- Halo-Aryl metals
- Ammonium oxosalts
- Halogen azides
- Ammonium perchlorate
- N-Halogen compounds
- Ammonium permanganate
- Halogen oxides
- Arenediazoates
- N-Haloimides
- Arenediazio Aryl sulfides
- Heavy metal acetylenes
- bis-Arenediazo oxides
- Heavy metal picrates
- bis-Arenediazo sulfides
- Hydrazinium salts
- Arenediazoniumolates
- Hydrogen Peroxide >30%
- Azides
- Hydroperoxides
- Azo compounds
- Hydroxylamine
- Butyl hydroperoxide
- Hydroxylammonium salts
- t-Butyl peroxyacetate
- Hypohalites
- Butyl perbenzoate
- Lead picrate
- Chlorite salts of metals
- Mercury chlorite
- 1-Chloro-2,4-dinitrobenzene
- Mercury picrate
- Copper picrate
- Metal acetylides
- Cumene hydroperoxide
- Metal azides
- Cyclic peroxides
- N-Metal derivatives
- Diacetyl peroxide
- Metal fulminates
- Diacyl peroxides
- Metal perchlorates
- Dialkyl peroxides
- Metal peroxides
- Diazirenes
- Nickel picrate
- Diazo compounds
- Nitric oxide
- Diazonium carboxylates and salts
- N-Nitro compounds
- Diazonium salts
- N-nitromethylamine
- Diazonium sulfides
- Nitroalkanes,
- Dibenzooyl peroxide
- Nitrocellulose

II: 8 - 10
**Potentially Explosive Compounds** - continued

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<table>
<thead>
<tr>
<th>Listing of Potentially Explosive Compounds/Classes (many are shock/heat/friction sensitive)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nitroglycerine</td>
</tr>
<tr>
<td>Nitroguanidine</td>
</tr>
<tr>
<td>Nitroso compounds</td>
</tr>
<tr>
<td>Nitrourea</td>
</tr>
<tr>
<td>Nonmetal azides</td>
</tr>
<tr>
<td>Nonmetal perchlorates</td>
</tr>
<tr>
<td>Organic azides</td>
</tr>
<tr>
<td>Oxo salts of nitrogenous bases</td>
</tr>
<tr>
<td>Ozonides</td>
</tr>
<tr>
<td>Perchlorate salts</td>
</tr>
<tr>
<td>Perchloric acid (anhydrous)</td>
</tr>
<tr>
<td>Perchloryl compounds</td>
</tr>
<tr>
<td>Peroxides and hydroperoxides</td>
</tr>
<tr>
<td>Peroxides - transition metal salts</td>
</tr>
<tr>
<td>Peroxoacids and salts</td>
</tr>
<tr>
<td>Peroxyacetic acid</td>
</tr>
<tr>
<td>Peroxy acids</td>
</tr>
<tr>
<td>Peroxy esters</td>
</tr>
<tr>
<td>Picrates</td>
</tr>
</tbody>
</table>
ATF & DOT Identified Explosives

Acetylide of heavy metals (ATF)
Aluminum ophorite explosive (ATF)
Amatol (ATF)
Ammonium nitrate
Ammonium perchlorate
Ammonium salt lattice with isomorphously substituted inorganic salts (ATF)
Ammunition Articles, explosive
Baratol (ATF)
Barium Styphnate
BEAF [1, 2-bis (2, 2-difluoro-2-nitroacetoxethane)] (ATF)
Black powder (ATF)
Blasting caps (ATF)
Blasting powder (ATF)
Bulk salutes (ATF)
BTNN [1,2,4 butanetriol trinitrate] (ATF)
Calcium nitrate explosive mixture (ATF)
Cellulose hexanitrate explosive mixture (ATF)
Chlorate explosive mixtures (ATF)
Composition A and variations (ATF)
Composition C and variations (ATF)
Cyanuric triazide (ATF)
Cyclotetramethylene tetranitramine [HMX] (ATF)
Cyclonite [RDX] (ATF)
DATB [diaminotrinitrobenzene] (ATF)
Deflagrating metal salts of aromatic nitro derivatives
DEGDN [diethylene glycol dinitrate] (ATF)
Detonators (ATF)
Dimethylol dimethyl methane dinitrate composition
Dinitroethylenetricarboxylic acid (ATF)
Dinitroglycoluril
Dinitrophenolates (ATF)
Dinitroresorcinol (ATF)
Dinitrotoluene-sodium nitrate explosive mixtures (ATF)
DIPAM (ATF)
Dipicryl sulfide (ATF)
Display fireworks (ATF)
DNPA [2,2-dinitropropyl acrylate] (ATF)
EDDN [ethylene diamine dinitrate] (ATF)
Ednatol (ATF)
Erythritol tetranitrate explosives (ATF)
Aluminum containing polymeric propellant (ATF)
Amatex (ATF)
Ammonal (ATF)
Ammonium nitrate-fuel oil mixture (ATF)
Ammonium picrate
Articles, explosive
Barium Azide
Baronol (ATF)
Blasting agents, nitro-carbo-nitrates (ATF)
Blasting gelatin (ATF)
BTNEC [bis (trinitroethyl) carbonate] (ATF)
BTNEN [bis (trinitroethyl) nitramine] (ATF)
Butyl tetryl (ATF)
Charges
Components, explosive
Composition B and variations (ATF)
Copper acetylide (ATF)
Cyclotetramethylene trinitramine (ATF)
Cyclotrimethylene trinitramine [RDX] (ATF)
Cyclotol (ATF)
DDNP [diazodinitrophenol] (ATF)
Detonating cord (ATF)
Diazodinitrophenol (ATF)
Dinitroglycerine [glycerol dinitrate] (ATF)
Dinitropentane (ATF)
Dinitrophenyl hydrazine (ATF)
Dinitrosobenzene
Dipicryl sulfide
Dipicrylamine (ATF)
DNPA [dinitropenta nitrile] (ATF)
Dynamite (ATF)
EDNA (ATF)
EDNP [ethyl 4,4-dinitropentanoate] (ATF)
Esters of nitro-substituted alcohols (ATF)
EGDN [ethylene glycol dinitrate] (ATF)  Ethyl-tetryl (ATF)
Explosive conitratess (ATF)  Explosive gelatins (ATF)
Explosive mixtures containing oxygen releasing inorganic salts and hydrocarbons (ATF)
Explosive mixtures containing oxygen releasing inorganic salts and nitro bodies (ATF)
Explosive mixtures containing oxygen releasing inorganic salts and water insoluble fuels (ATF)
Explosive mixtures containing oxygen releasing inorganic salts and water soluble fuels (ATF)
Explosive mixtures containing sensitized nitromethane (ATF)
Explosive mixtures containing tetranitromethane (nitroform) (ATF)
Explosive nitro compounds of aromatic hydrocarbons (ATF)
Explosive organic nitrate mixtures (ATF)  Explosive liquids (ATF)
Explosive powders (ATF)  Explosives (ATF)
Flash powders (ATF)  Flares (ATF)
Fulminate of silver (ATF)  Fulminating gold (ATF)
Fulminating mercury (ATF)  Fulminating platinum (ATF)
Fulminating silver (ATF)  Fuse (ATF)
Gelatinized nitrocellulose (ATF)  Gem-dinitro aliphatic explosive mixtures (ATF)
Grenades (ATF)  Guanyl nitrosaminoguanylidene hydrazine (ATF)
Guanyl nitrosaminoguanyltetrazene (ATF)  Guncotton (ATF)
Heavy metal azides (ATF)  Hexanite (ATF)
Hexanitrodiphenylamine (ATF)  Hexanitrostilbene (ATF)
Hexogen (RDX) (ATF)  Hexoxite (ATF)
Hexogene or octogen and a nitrated N-methylaniline (ATF)
Hexolites (ATF)  HMX [cyclo-1,3,5,7-tetramethylene 2,4,6,8-tetranitramine; Octogen] (ATF)
Hydrazinium nitrate/hydrazine/aluminum explosive system (ATF)
Hydrazoic acid (ATF)  Igniter cord (ATF)
Igniters (ATF)  Initiating tube systems (ATF)
KDNBF [potassium dinitrobenzofuroxane] (ATF)  Lead azide (ATF)
Lead mandnate (ATF)  Lead mononitroresorcinolate (ATF)
Lead picrate (ATF)  Lead salts, explosive (ATF)
Lead styphnate [styphnate of lead, lead trinitroresorcinolate] (ATF)
Liquid nitrated polyol and trimethylolmethane (ATF)  Liquid oxygen explosives (ATF)
Magnesium ophorite explosives (ATF)  Mannitol hexanitrate (ATF)
MDNP [methyl 4,4-dinitropentanoate] (ATF)  MEAN [monoethanolamine nitrate] (ATF)
5-Mercaptotetrazol-1-acetic acid (ATF)  Mercuric fulminate (ATF)
Mercury oxalate (ATF)  Mercury tartrate (ATF)
Metriol trinitrate (ATF)  Mines (ATF)
Minol-2 [40% TNT, 40% ammonium nitrate, 20% aluminum] (ATF)
MMAN [monomethylamine nitrate]; methylamine nitrate (ATF)
Mononitrotoluene-nitroglycerin mixture (ATF)  
NITBTN [nitroisobutametriol trinitrate] (ATF)  
Nitrate unsaturated with gelled nitroparaffin (ATF)  
Nitrate sensitizer explosive (ATF)  
Nitratized carbohydrate explosive (ATF)  
Nitratized polyhydric alcohol explosives (ATF)  
Nitrates of soda explosive mixtures (ATF)  
Nitric acid and a nitro aromatic compound explosive (ATF)  
Nitric acid and carboxylic fuel explosive (ATF)  
Nitric acid explosive mixtures (ATF)  
Nitration compounds of furan explosive mixtures (ATF)  
Nitrocellulose (ATF)  
Nitrogelatin explosive (ATF)  
Nitrogen tri-iodide (ATF)  
Nitroguanidine (ATF)  
Nitroglycerine [NG, RNG, nitro, glyceryltrinitrate, trinitroglycerine] (ATF)  
Nitroglycerine explosive (ATF)  
Nitroglycol (ethylene glycol dinitrate, EGDN) (ATF)  
Nitroparaffins Explosive Grade and ammonium nitrate mixtures (ATF)  
Nitronium perchlorate propellant mixtures (ATF)  
Nitro-substituted carboxylic acids (ATF)  
Octogen [HMX] (ATF)  
Octolite (ATF)  
Organic amine nitrates (ATF)  
Pentaerythrite tetrinitrate (ATF)  
Pentaerythritol tetranitrate (ATF)  
Picramide (ATF)  
Picratol (ATF)  
Picric Acid (other uses) (ATF)  
Picryl chloride (ATF)  
Picryl fluoride (ATF)  
Polynitro aliphatic compounds (ATF)  
Polyolpolyamine-nitrocellulose explosive gels (ATF)  
Potassium chlorate and lead sulfocyanate explosive (ATF)  
Potassium nitrate explosive mixtures (ATF)  
Potassium salts of aromatic nitro derivatives (ATF)  
Primer Cake (ATF)  
Propellent, (liquid or solid) (ATF)  
Pyrotechnic compositions (ATF)  
PYX (2,6-bis(picrylamino))-3,5- dinitropyridine (ATF)  
RDX [cyclonite, hexogen, T4, cyclo-1,3,5,-trimethylene-2,4,6,-trinitramine; hexahydro-1,3,5-trinitro-S-triazine] (ATF)  
Rockets (ATF)  
Rocket motors (ATF)
Safety fuse (ATF)
Salts of organic amino sulfonic acid explosive mixture (ATF)
Silver acetylide (ATF)
Silver fulminate (ATF)
Silver styphnate (ATF)
Silver tetrazene (ATF)

Slurried explosive mixtures of water, inorganic oxidizing salt, gelling agent, fuel and sensitizers (ATF) (cap sensitive)
Smokeless powder (ATF)
Sodatol (ATF)
Sodium azide explosive mixture (ATF)
Sodium nitrate-potassium nitrate explosive mixture (ATF)
Sodium picramate (ATF)
Sounding devices, explosive
Squibs (ATF)
Tacot [tetranitro-2,3,5,6-dibenzo-1,3a,4,6a tetrazapentalene] (ATF)
TATB [triaminotrinitrobenzene] (ATF)
Tetrazene [tetracene, tetrazine, 1(5-tetrazolyl)-4-guanyl tetrazene hydrate] (ATF)
Tetranitrocarbazole (ATF)
Tetrazol-1-acetic acid
Tetrytol (ATF)
TNEF [trinitroethyl formal] (ATF)
TNEOF [trinitroethyloorthoformate] (ATF)
Torpedoes
Tracers for ammunition
Trimethylol ethyl methane trinitrate composition (ATF)
Trimethylolthane trinitrate-nitrocellulose (ATF)
Trinitroaniline
Trinitrobenzene (ATF)
Trinitrobenzoic acid (ATF)
Trinitrocresol (ATF)
Trinitrofluorenone
Trinitrophenetol (ATF)
Trinitrophenylmethyl nitramine
Trinitroresorcinol (ATF)
Trional (ATF)

Water-in-oil emulsion explosive compositions (ATF)
Xanthomonas hydrophilic colloid explosive mixture (ATF)
Zirconium picramate

Salutes, (bulk) (ATF)
Silver azide (ATF)
Silver oxalate explosive mixtures (ATF)
Silver tartrate explosive mixtures (ATF)
Smoke Signals
Sodium amatol (ATF)
Sodium dinitro-ortho-cresolate (ATF)
Sodium salts of aromatic nitro derivatives
Special fireworks (ATF)
Styphnic acid explosives (ATF)
TEGDN [triethylene glycol dinitrate] (ATF)
Tetryl [2,4,6 tetranitro-N-methylaniline] (ATF)
TMETN [trimethylolethane trinitrate] (ATF)
TNEOC [trinitroethyloorthocarbonate] (ATF)
TNT [trinitrotoluene, trotyl, trilite, triton] (ATF)
Torpex (ATF)
Tridite (ATF)
Trigonite (ATF)
Trinitroanisole (ATF)
Trinitrobenzenesulfonic acid
Trinitrobenzene
Trinitrochlorobenzene
Trinitro-meta-cresol (ATF)
Trinitronaphthalene (ATF)
Trinitrophenol
Trinitrochloroglucinol (ATF)
Trinitrotoluene (ATF)
Urea nitrate (ATF)