

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.

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

Chemical Incompatibilities (Partial List) - continued

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

Chemical Incompatibilities (Partial List) - continued

CHEMICAL	INCOMPATIBLE CHEMICAL(S)
Hydrocarbons (Such as butane, propane, benzene, turpentine, etc.)	acids, bases, halogens, oxidizers, peroxides, plastics
Hydrocyanic acid	Nitric acid, alkalis
Hydrofluoric acid	ammonia, metals, organic materials, plastics, silica (glass), (anhydrous) sodium
Hydrogen peroxide	acetaldehyde, acetic acid, acetone, alcohol's carboxylic acid, combustible materials, metals, nitric acid, organic compounds, phosphorous, sulfuric acid, sodium, aniline
Hydrogen sulfide	acetaldehyde, metals, nitric acid, oxidizers, sodium
Hypochlorites	acids, activated carbon
Iodine	acetaldehyde, acetylene, ammonia, metals, sodium
Mercury	acetylene, aluminum, amines, ammonia, calcium, fulminic acid, lithium, oxidizers, sodium
Nitrates	acids, nitrites, metals, reducing agents, sulfur, sulfuric acid
Nitric acid	acetic acid, acetonitrile, alcohols, amines, (concentrated) ammonia, aniline, bases, benzene, cumene, formic acid, ketones, metals, organic materials, plastics, sodium, toluene
Nitrites	Acids, oxidizing agents
Nitroparaffins	Inorganic bases, amines
Organic compounds	Oxidizing agents
Organic acyl halides	Bases, organic hydroxyl and amino compounds
Organic anhydrides	Bases, organic hydroxyl and amino compounds

Chemical Incompatibilities (Partial List) - continued

CHEMICAL	INCOMPATIBLE CHEMICAL(S)
Organic halogen compounds	Group IA and IIA metals, aluminum
Organic nitro compounds	Strong bases
Oxidizing agents	reducing agents, organic compounds
Oxalic acid	mercury and silver and their salts, oxidizers, sodium chlorite
Oxygen	acetaldehyde, secondary alcohols, alkalis and alkalines, ammonia, carbon monoxide, combustible materials, ethers, flammable materials, grease, hydrogen, hydrocarbons, metals, oils, phosphorous, polymers
Perchlorates	ammonia, carbon, metals, metal hydrides, nitrites, organic compounds, phosphorous, silicon, sulfur
Perchloric acid	acetic acid, acetic anhydride, alcohols, aniline, bismuth and its alloys, combustible materials, dehydrating agents, ethyl benzene, grease, hydriodic acid, hydrochloric acid, iodides, ketones, organic materials, oils, oxidizers, paper, pyridine, wood
Permanganates	ammonia, carbon, metals, metal hydrides, nitrites, organic compounds, phosphorous, silicon, sulfur
Peroxides	ammonia, carbon, metals, metal hydrides, nitrites, organic compounds, phosphorous, silicon, sulfur
Peroxides, organic	acids (organic or mineral), avoid friction, store cold
Persulfates	ammonia, carbon, metals, metal hydrides, nitrites, organic compounds, phosphorous, silicon, sulfur
Phosphorus (white)	oxygen (pure and in air), alkalis
Phosphorous pentoxide	alcohols, strong bases, water
Potassium	acetylene, acids, alcohols, halogens, hydrazine, mercury, oxidizers, selenium, sulfur, water

Chemical Incompatibilities (Partial List) - continued

CHEMICAL	INCOMPATIBLE CHEMICAL(S)
Potassium chlorate	acids, ammonia, combustible materials, fluorine, hydrocarbons, metals, organic materials, sugars
Potassium perchlorate (also see chlorates)	alcohols, combustible materials, fluorine, hydrazine, metals, organic matter, reducing agents, sulfuric acid
Potassium permanganate	benzaldehyde, ethylene glycol, glycerol, sulfuric acid
Reducing agents	arsenates, arsenites, oxidizing agents, phosphorous, selenates, selenites, tellerium salts and oxides.
Silver and salts	acetylene, ammonia, fulminic acid, oxalic acid, oxidizers, ozonides, peroxyformic acid, tartaric acid,
Sodium	acids, hydrazine, metals, oxidizers, water
Sodium nitrate	acetic anhydride, acids, metals, organic matter, peroxyformic acid, reducing agents
Sodium nitrite	Ammonium nitrate and other ammonium salts
Sodium peroxide	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
Sulfides	acids
Sulfuric acid	potassium chlorates, potassium perchlorate, potassium permanganate

Peroxidizable Compounds

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Types of Compounds Known to Auto-oxidize to Form Peroxides

Aldehydes

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)

Compounds containing benzylic hydrogens

Compounds containing allylic hydrogens (C=C-CH), including most alkenes, vinyl and vinylidene compounds

Compounds containing a tertiary C-H group (e.g., decalin and 2,5-dimethylhexane)

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 hazardously due to peroxide initiation.

Acrylic acid	Tetrafluoroethylene
Acrylonitrile	Vinyl acetate
Butadiene	Vinyl acetylene
Chlorobutadiene (Chloroprene)	Vinyl chloride
Chlorotrifluoroethylene	Vinyl pyridine
Methyl methacrylate	Vinylidene chloride
Styrene	

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	Dioxane (p-dioxane)
Cumene	Ethylene glycol dimethyl ether (glyme)
Cyclohexane	Furan
Cyclooctene	Methyl acetylene
Cyclopentane	Methyl cyclopentane
Diacetylene	Methyl-i-butyl-ketone
Dicyclopentadiene	Tetrahydrofuran
Diehtylene glycol dimethyl ether (diglyme)	Tetrahydronaphthalene
Diethyl ether	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

Structural Feature	Compound
$-\text{C} \equiv \text{C}-$	Acetylenic compound
$-\text{C} \equiv \text{C}-\text{M}$	Metal acetylide or carbide
$-\text{C} \equiv \text{C}-\text{X}$	Haloacetylide
$\diagup \text{CN}_2$	Diazo compounds
$\diagup \text{C}-\text{N}=\text{O}$	Nitroso compounds
$\diagup \text{C}-\text{NO}_2$	Nitroalkanes, C-nitro and polynitroaryl compounds, polynitroalkyl compounds, trinitroethyl compounds
$\text{C}-\text{O}-\text{N}=\text{O}$	Acyl or Alkyl nitrites
$\text{C}-\text{O}-\text{NO}_2$	Acyl or alkyl nitrates
$\text{C}-\text{O}-\text{O}-\text{C}$	Alkyl or acyl peroxides
$\diagup \text{C}-\text{O}-\text{O}-\text{H}$	Alkyl hydroperoxides
$\diagup \text{C}-\overset{\text{O}}{\parallel}{\text{C}}-\text{O}-\text{O}-\text{C} \diagdown$	Dialkyl peroxy carbonates
$\text{CNO}-\text{M}$	Metal fulminates or aci-nitro salts, oximates
$-\text{N}_3$	Organic azides, acyl azides, metal azides, metal azide complexes
$\text{M}(\text{CO})_n$	Transition metal-carbonyl compounds
$-\text{C} \equiv \text{N}$	Metal cyanides, organic nitriles, cyanogen halides

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	Fluorodintromethyl compounds
Alkyl perchlorates	Fulminates
Amine perchlorates	Haloacetylenes and derivatives
Amminechromiumperoxo complexes	Halo-Aryl metals
Amminemetal oxosalts	Halogen azides
Ammonium perchlorate	N-Halogen compounds
Ammonium permanganate	Halogen oxides
Arenediazoates	N-Haloimides
Arenediazo 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 amide
Diazonium carboxylates and salts	N-Nitro compounds
Diazonium salts	N-nitromethylamine
Diazonium sulfides	Nitroalkanes,
Dibenzoyl peroxide	Nitrocellulose

Potentially Explosive Compounds - continued

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

Nitroglycerine	Picric acid
Nitroguanidine	Polyacetylenes
Nitroso compounds	Polyol nitrates
Nitrourea	Polynitroalkyl compounds
Nonmetal azides	Polynitro amines
Nonmetal perchlorates	Polynitroaromatic compounds
Organic azides	Polynitroaryl compounds
Oxo salts of nitrogenous bases	Polynitro hydrocarbons
Ozonides	Polynitro phenols
Perchlorate salts	Silver chlorite
Perchloric acid (anhydrous)	Silver fulminate
Perchloryl compounds	Tetranitromethane
Peroxides and hydroperoxides	Tetrazoles
Peroxides - transition metal salts	Transition metal picrates
Peroxoacids and salts	Triazenes
Peroxyacetic acid	N,N,N-trifluoroalkylamidines
Peroxy acids	Trinitrobenzene
Peroxy esters	Trinitrotoluene
Picrates	Zinc picrate

ATF & DOT Identified Explosives

Acetylides of heavy metals ^(ATF)
 Aluminum ophorite explosive ^(ATF)
 Amatol ^(ATF)
 Ammonium nitrate
 Ammonium perchlorate
 Ammonium salt lattice with isomorphously substituted inorganic salts ^(ATF)
 Ammunition
 Baratol ^(ATF)
 Barium Styphnate
 BEAF [1, 2-bis (2, 2-difluoro-2-nitroacetoxyethane)] ^(ATF)
 Black powder ^(ATF)
 Blasting caps ^(ATF)
 Blasting powder ^(ATF)
 Bulk salutes ^(ATF)
 BTTN [1,2,4 butanetriol trinitrate] ^(ATF)
 Calcium nitrate explosive mixture ^(ATF) Cartridges (Ammunition)
 Cellulose hexanitrate explosive mixture ^(ATF)
 Chlorate explosive mixtures ^(ATF)
 Composition A and variations ^(ATF)
 Composition C and variations ^(ATF)
 Cyanuric triazide ^(ATF)
 Cyclotetramethylenetranitramine [HMX] ^(ATF)
 Cyclonite [RDX] ^(ATF)
 DATB [diaminotrinitrobenzene] ^(ATF)
 Deflagrating metal salts of aromatic nitro derivatives
 DEGDN [diethyleneglycol dinitrate] ^(ATF)
 Detonators ^(ATF)
 Dimethylol dimethyl methane dinitrate composition ^(ATF)
 Dinitroethyleneurea ^(ATF)
 Dinitroglycoluril
 Dinitrophenolates ^(ATF)
 Dinitroresorcinol ^(ATF)
 Dinitrotoluene-sodium nitrate explosive mixtures ^(ATF)
 DIPAM ^(ATF)
 Dipicryl sulfone ^(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)
 Cyclotetramethylenetrinitramine ^(ATF)
 Cyclotrimethylenetrinitramine [RDX] ^(ATF)
 Cyclotol ^(ATF)
 DDNP [diazodinitrophenol] ^(ATF)
 Detonating cord ^(ATF)
 Diazodinitrophenol
 Dinitrolycerine [glycerol dinitrate] ^(ATF)
 Dinitrophenols ^(ATF)
 Dinitrophenyl hydrazine ^(ATF)
 Dinitrosobenzene
 Dipicryl sulfide
 Dipicrylamine ^(ATF)
 DNPD [dinitropentano nitrile] ^(ATF)
 Dynamite ^(ATF)
 EDNA ^(ATF)
 EDNP [ethyl 4,4-dinitropentanoate] ^(ATF)
 Esters of nitro-substituted alcohols ^(ATF)

ATF & DOT Identified Explosives - continued

EGDN [ethylene glycol dinitrate] ^(ATF) Ethyl-tetryl ^(ATF)
Explosive conitrates ^(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
Fireworks Flares
Flash powder ^(ATF) Fulminate of mercury ^(ATF)
Fulminate of silver ^(ATF) Fulminating gold ^(ATF)
Fulminating mercury ^(ATF) Fulminating platinum ^(ATF)
Fulminating silver ^(ATF) Fuse
Gelatinized nitrocellulose ^(ATF) Gem-dinitro aliphatic explosive mixtures ^(ATF)
Grenades Guanyl nitrosaminoguanilydene hydrazine ^(ATF)
Guanyl nitrosaminoguanilytetrazene ^(ATF) Guncotton ^(ATF)
Heavy metal azides ^(ATF) Hexanite ^(ATF)
Hexanitrodiphenylamine ^(ATF) Hexanitrostilbene ^(ATF)
Hexogen (RDX) ^(ATF)
Hexogene or octogene and a nitrated N-methylaniline ^(ATF)
Hexolites ^(ATF) Hexotonal
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 mannite ^(ATF) Lead mononitroresorcinate ^(ATF)
Lead picrate ^(ATF) Lead salts, explosive ^(ATF)
Lead styphnate [styphnate of lead, lead trinitroresorcinate] ^(ATF)
Liquid nitrated polyol and trimethylolethane ^(ATF) Liquid oxygen explosives ^(ATF)
Magnesium ophorite explosives ^(ATF) Mannitol hexanitate ^(ATF)
MDNP [methyl 4,4-dinitropentanoate] ^(ATF) MEAN [monoethanolamine nitrate] ^(ATF)
5-Mercaptotetrazol-1-acetic acid Mercuric fulminate ^(ATF)
Mercury oxalate ^(ATF) Mercury tartrate ^(ATF)
Metriol trinitrate ^(ATF) Mines
Minol-2 [40% TNT, 40% ammonium nitrate, 20% aluminum] ^(ATF)
MMAN [monomethylamine nitrate]; methylamine nitrate ^(ATF)

ATF & DOT Identified Explosives - continued

Mononitrotoluene-nitroglycerin mixture ^(ATF)	Monopropellants ^(ATF)
NIBTN [nitroisobutametrial trinitrate] ^(ATF)	Nitrate sensitized with gelled nitroparaffin ^(ATF)
Nitrated carbohydrate explosive ^(ATF)	Nitrated glucoside explosive ^(ATF)
Nitrated polyhydric alcohol explosives ^(ATF)	Nitrates of soda explosive mixtures ^(ATF)
Nitric acid and a nitro aromatic compound explosive ^(ATF)	Nitric acid explosive mixtures ^(ATF)
Nitric acid and carboxylic fuel explosive ^(ATF)	5-Nitrobenzotriazol
Nitro aromatic explosive mixtures ^(ATF)	Nitroderivative of urea explosive mixture ^(ATF)
Nitro compounds of furane explosive mixtures ^(ATF)	Nitrogen trichloride ^(ATF)
Nitrocellulose ^(ATF)	Nitrourea ^(ATF)
Nitrogelatin explosive ^(ATF)	Nitroguanidine ^(ATF)
Nitrogen tri-iodide ^(ATF)	
Nitroglycerine [NG, RNG, nitro, glyceryltrinitrate, trinitroglycerine] ^(ATF)	
Nitroglycide ^(ATF)	
Nitroglycol (ethylene glycol dinitrate, EGDN) ^(ATF)	
Nitroparaffins Explosive Grade and ammonium nitrate mixtures ^(ATF)	
Nitronium perchlorate propellant mixtures ^(ATF)	Nitrostarch ^(ATF)
Nitro-substituted carboxylic acids ^(ATF)	Nitrotriazolone
Octogen [HMX] ^(ATF)	Octol [75 percent HMX, 25 percent TNT] ^(ATF)
Octolite	Octonal
Organic amine nitrates ^(ATF)	Organic nitramines ^(ATF)
PBX [RDX and plasticizer] ^(ATF)	Pellet powder ^(ATF)
Penthrinite composition ^(ATF)	Pentolite ^(ATF)
Perchlorate explosive mixtures ^(ATF)	Peroxide based explosive mixtures ^(ATF)
PETN [nitropentaerythrite, pentaerythrite tetranitrate, pentaerythritol tetranitrate] ^(ATF)	Picramide ^(ATF)
Picramic acid and its salts ^(ATF)	Picratol ^(ATF)
Picrate of potassium explosive mixtures ^(ATF)	Picric Acid (other uses)
Picric acid (manufactured as an explosive) ^(ATF)	Picryl fluoride ^(ATF)
Picryl chloride ^(ATF)	
PLX [95% nitromethane, 5% ethylenediamine] ^(ATF)	
Polynitro aliphatic compounds ^(ATF)	
Polyolpolynitrate-nitrocellulose explosive gels ^(ATF)	
Potassium chlorate and lead sulfocyanate explosive ^(ATF)	
Potassium nitrate explosive mixtures ^(ATF)	Potassium nitroaminotetrazole ^(ATF)
Potassium salts of aromatic nitro derivatives	Powder Cake
Primers	Projectiles
Propellant, (liquid or solid)	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	Rocket motors

ATF & DOT Identified Explosives - continued

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 sensitizer ^(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
 Tetryol ^(ATF)
 TNEF [trinitroethyl formal] ^(ATF)
 TNEOF [trinitroethylorthoformate] ^(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)
 Trinitrophenylmethylnitramine
 Trinitroresorcinol ^(ATF)
 Tritonal ^(ATF)
 Water-in-oil emulsion explosive compositions ^(ATF)
 Xanthamonas 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)
 Tetranitroaniline
 Tetryl [2,4,6 tetranitro-N-methylaniline] ^(ATF)
 TMETN [trimethylolethane trinitrate] ^(ATF)
 TNEOC [trinitroethylorthoformate] ^(ATF)
 TNT [trinitrotoluene, trotyl, trilitite, triton] ^(ATF)
 Torpex ^(ATF)
 Tridite ^(ATF)
 Trimonite ^(ATF)
 Trinitroanisole ^(ATF)
 Trinitrobenzenesulfonic acid
 Trinitrochlorobenzene
 Trinitro-meta-cresol ^(ATF)
 Trinitronaphthalene ^(ATF)
 Trinitrophenol
 Trinitrophenylglucitol ^(ATF)
 Trinitrotoluene ^(ATF)
 Urea nitrate ^(ATF)