School Hazardous Materials List

This list is a summary of chemicals which a variety of sources have suggested may not be appropriate for use in a high school or middle school setting. The final determination whether these materials may be safely used in your school can only be made after evaluating the following: 1) the health and safety considerations associated with the procedure involving the substance; 2) the training and experience of the staff; 3) the design and layout of the safety features (e.g. fume hoods, eye washes, ventilation) at your school; 4) the personnal protective equipment available at the school; and 5) your ability to respond to spills and manage the waste generated by the materials use. If there are any doubts regarding your ability to address any of these issues then it is probably wisest not to use these materials.

This list should only be used for reference purposes. Additional hazards may be associated with the substances record on this list. The chemical user should consult the material safety data sheet prepared by the manufacturer or additional reference materials before making a final decision.

Explosive/fire hazard

a,a,di-(nitroxy)methyl ether
acetal **(P)**
acetyl peroxide
acetylene silver nitrate
aged & excessive oxidizers
all aliphatic ethers **(P)**
all isocyanates **(P)**
all peroxides **(P)**
alumin picrate
amatol
aminoguanidine nitrate **(P)**
ammonal
ammonium azide
ammonium bromate
ammonium chlorate
ammonium dichromate
ammonium fulminate
ammonium nitrate/fuel oil mixture
ammonium picrate
ANFO
anhydrous aluminum chloride
azaurolic acid
azido dithiocarbonic acid
azido ethyl nitrate
azido guanidinopicrate (dry)
azido propylene glycoldinitrate
azido-1-hydroxy tetrazole
azotetrazole (dry)
barium azide
benzine diazonium chlorate
benzine diazonium nitrate
benzoxidazole
benzoyl azide
benzoyl peroxide
biphenyl triazonide
bis-trinitroethylcarbonate
bis-trinitroethylnitramine
black powder
bromine azide
1-bromo-2-nitrobenzene
bromodinitrobenzene
4-bromo-1,2-dinitrobenzene
bromosilane
butadiene **(P)**
butanetrioltrinitrate
butyl tetryl
calcium carbide
carbazide
carbon disulfide
chlorine azide
chlorine dioxide
chlorobutadiene/chloroprene **(P)**
chlorotrifluorethylene **(P)**
collodion
composition A-3 (91% RDX, 9% wax)
composition B (40% TNT, 605 RDX)
composition C-4 (91% RDX, 9% plastic)
copper acetylide

copper amine azide
copper myxin
copper tetramine nitrate
cumene **(P)**
cyanuric triazide
cyclic 1,3,5,7 tetramethylene tetranitramine
cyclohexane
cyclohexene **(P)**
cyclotetramethylene tetranitramine
cyclotol (75% RDX, 25% TNT)
di-(1-hydroxytetrazole)
di-(1-naphthoyl) peroxide
di-(beta-nitroxyethyl)
di-iodoacetylene
diacetylene **(P)**
diaminonitrobenzene
diaminotrinitromethylene tetranitramine
1,2 diazidoethane
diazoaminotetrazole (dry)
diazodinitrophenol
diazodiphenylmethane
diazomium nitrate (dry)
diazonium perchlorate (dry)
diazopropane
dibromoacetylene
dichloroazidicarbonamide
dichlrooacetylene
dicyclopentadiene **(P)**
diethyl gold bromide
diethyl peroxide
diethylene glycol dinitrate
dihydroxy-2,4,5,7-tetranitroanthroquinone
diiodoacetylene
diisopropyl ether
dimethlyhexane dihyperoxide (dry)
dimethyl dihydroperoxy hexane
dinitrobenzylamide
1,3-dinitro-5,5-dimethyl hydantoum
1,3-dinitro-4,5-dinitrobenzene
dinitroethane
dinitroethyleneurea
dinitroglycerine
dinitroglycoluril
dinitromethane
dinitropentanonitrile
dinitrophenates
dinitrophenoxy starch (dry)
2,2-dinitropropyl acrylate
dinitropropylene glycol
dinitroresorcinol
dinitrosalicylic acid
dinitrosobenzylamide
2,2-dintrostilbene
dinitrotetramethylolnutanetetranitrate
dintro-7-8-dimethylglcoluril
2,4-dinitrophenol
2,4-dinitrophenolhydrazine
2,4-dinitro-l,3,5-trimethylbenzene
1,4-dioxane **(P)**
diphenyl 1-picryl hydrazyl
dipicrylsulfone
divinyl acetylene **(P)**
ethanolamine dinitrate
ethleneglycol dinitrate
ethyl ether **(P)**
ethyl hydroperoxide
ethyl perchlorate
ethyl-4,4-dinitropentanoate
ethylene diamine diperchlorate
ethylene glycol dimethyl ether (glyme) **(P)**
formic acid (aged)
fulminate of mercury (dry)
fulminate of mercury (wet)
fulminate of silver
fulminating gold
fulminating mercury
fulminating platinum
fulminic acid
furan **(P)**
galactsan trinitrate
glycerol 1,3-dinitrate
glycerol monogluconate trinitrate
hexamethylene triperoxidediamine
hexamethylol benzene hexanitrate
hexanite
hexanitro dihydroxazobenzene
hexanitrodiphenyl ether
hexanitrodiphenyl urea
hexanitrodiphenylamine (dry)
hexanitroethane
hexanitrooxanilide
hexanitrostilbene
hexogen
hydrazine azide
hydrazine chlorate
hydrazine dicarbonic acid diazide
hydrazine perchlorate
hydrazine selenate
hydrazinium nitrate
hydrazoic acid
hydroxyl amine iodide
hydroxytetrazole

hyponitrous acid
indene **(P)**
inositohexanitrate (dry)
inulintrinitrate (dry)
iodine azide
iodozy compounds (dry)
iridium nitrate
iridiumnitratopentamine
isoprene **(P)**
isopropyl ether **(P)**
isothiocyanic acid
lauryl peroxide
lead azide
lead mannite
lead mononitroresorcinate (dry)
lead picrate (dry)
lead styphnate (dry)
leaking gas cylinders
lithium metal
low flash point solvents
m-nitrobenzene diazonium perchorate
m-nitrophenyldinitromethane
m-phenylene diamine diperchlorate (dry)
magnesium powder
mannitan tetranitrate
mercurous azide
mercury acetylide
mercury nitride
mercury oxalate
mercury tartrate
methyl acetylene **(P)**
methyl ethyl ketone
methyl i-butyl ketone **(P)**
methyl methacrylate
methyl nitrate
methyl picric acid
methyl trimethylolmethane trinitrate
methyl-4,4-dinitropentanoate
methylamine dinitramine
methylamine nitroform
methylamine perchlorate
methylcyclopentane **(P)**
methylene glycol dinitrate
N,N-hexanitrodiphenyl ethylene dinitramine (dry)
N-nitro-N-methyl-glycolamide nitrate
naphthalene diozonide
nickel picrate
nitrated paper (unstable)
nitrates of diazonium compounds
nitro isobutanetrioltrinitrate
nitro sugars (dry)
nitroethylene polymer
nitroethylnitrate
1-nitrohydantoin
nitrogen trichloride
nitrogen triiodide
nitrogen triiodidemonoamine
nitrogen trioxide
nitroglyceride
nitroglycerin
nitroglycerin (not desensitized)
nitroguanidine (dry)
nitroguanidine nitrate
nitroisobutanetriolnitrate
nitromannite (dry)
nitrourea (dry)
ocatgen
octol (75% HMX, 25% TNT)
p-diazidobenzene
p-xylyl diazide
pentaerythrite tetranitrate (dry)
pentanitroaniline (dry)
pentolite
peracetic acid (not over 43%)
perchloric acid
petroleum ether
phosphorus pentoxide
phosphorus, red
picramic acid (dry)
picramide
picramide **(P)**
picratol
picric acid **(P)**
picric acid (dry)
picryl chloride (dry)
picryl fluoride
picryl sulfonic acid (dry)
PLX (95% nitromethane, 5% ethylenediamine)
potassium carbonyl
potassium chlorate
potassium dinitrobenzoforoxane
potassium metal **(P)**
potassium nitoraminotetrazole
pyradine perchlorate
quebrachitol pentanitrate
selenium nitride
silver azide (dry)
silver chlorate (dry)
silver fulminate (dry)
silver oxalate (dry)
silver picrate (dry)

silver styphnate
silver tetrazene
silver, acetylide (dry)
sodatol
sodium metal
sodium amatol
sodium amide **(P)**
sodium azide
sodium dinitro-ocresolate
sodium picramate (dry)
sodium picrylperoxide
sodium sulfide
sodium tetranitride
styphnic acid
styrene **(P)**
sucrose octanitrate
t-butoxyl carbonyl azide
t-butyl alcohol
tetraazido benzene quinone
tetraethylammonium perchlorate
tetrafluoroethylene **(P)**
tetrahydrofuran **(P)**
tetrahydronaphthalene **(P)**
tetramethylene diperoxide dicarbamide
tetranitrocarbazole
tetranitrodiglycerin
2,4,6-tetranitro-N-methylaniline
2,3,4-tetranitrophenol
2,3,4-tetranitrophenolmethyl nitramine
2,3,4-tetranitrophenolnitramine
tetranitroresorcinol (dry)
2,3,5-tetranitroso-1,4-dinitrobenzene
2,3,5-tetranitroso nitrobenzene (dry)
tetrazene (dry)
tetrazolyl azide (dry)
thermit
TNT
toluene
torpex
tri(b-nitroxethyl)ammonium nitrate
tridite
triethylene glycol dinitrate
triformoxine trinitrate
1,3,5-trimethyl-2,4,6-trinitrobenzene
trimethylene glycol diperchorate
trimethylol nitromethane trinitrate
trimethylolethane trinitrate
trimonite
trinitro-m-cresol
trinitroacetic acid
trinitroacetonitrile
trinitroamine cobalt
trinitroanisole
trinitrobenzene (dry)
trinitrobenzene sulfonic acid
trinitrobenzoic acid
trinitrochlorobenzene
trinitrocresol
2,4,6-trintro-3,5-diazidobenzene (dry)
2,4,6-trinitro-1,3-diazobenzene
trinitroethanol
trinitroethyl formal
trinitroethylnitrate
trinitroethylorthocarbonate
trinitroethylorthoformate
trinitrofluoranone
trinitrofluorenone
trinitromethane
trinitronaphthalene
trinitrophenetol
trinitrophenol
2,4,6-trinitrophenylguanidine (dry)
trinitrophenylmethylnitramine
2,4,6-trinitrophenyl nitramine
trinitroresorcinol (dry)
trinitrotetramine cobalt nitrate (dry)
trinitrotoluene (tnt)
trintiroaniline
tris, bis-bifluoraminepropane
tritonal
vinyl acetate **(P)**
vinyl acetylene **(P)**
vinyl chloride **(P)**
vinyl ethers **(P)**
vinyl pyridine **(P)**
vinylidene chloride **(P)**
xylenes
yellow/white phosphorus
z-minol-2 (40% ammonium nitrate, 40% TNT, 20% Al)
zirconium picramate

Reactives/Corrosive/Irritants

acetal aldehyde
acetic anhydride
aluminum chloride
ammonium dichromate
ammonium oxalate
antimony oxide
antimony pentachloride
antimony trichloride
bismuth trichloride
bromine
calcium carbide
calcium fluoride
calcium oxide
catechol (pyrocatechol)
cupric bromide
diethyl phthalate
ethyl methacrylate
hexachlorophene
hydrochloric acid
hydrofluoric acid
hydrogen peroxide (30%)
hydrogen sulfide
hydroquinone
iodine (crystals)
lead carbonate
lead nitrate
lithium chloride
lithium, metal
methyl ethyl ketone
methyl methacrylate
methyl salicylate
naphthalene
nitric acid
osmium compounds
oxalic acid
p-dichlorobenzene
phosphorus (white)
phosphorus pentoxide
phthalic anhydride
potassium chlorate
potassium chromate
potassium cyanide
potassium fluoride
potassium hydroxide
potassium permanganate
potassium, metal
sodium chlorate
sodium chromate tetrahydrate
sodium cyanide
sodium dichromate
sodium ferrocyanide
sodium hydroxide
sodium nitrite
sodium silicofluoride
sodium sulfide
sodium, metal
stannic chloride
sulfuric acid
sulfuric acid fuming
titanium tetrachloride
titanium trichloride
toluene
trichlorotrifluoroethane
uranyl nitrate

Toxic

adrenaline
ammonium metavanadate
ammonium oxalate
antimony
antimony trioxide
arsenic trichloride
arsenic trioxide
barium chloride
barium hydroxide
brucine sulfate
caffeine
calcium fluoride
chloretone
chlorine
chloroform
chromium oxide
chromium potassium sulfate
cobalt nitrate hexahydrate
colchicine
cyanide salts
cylcohexane
dichloromethane
lead arsenate
lead carbonate
lead chloride
lead compounds
lead nitrate
lithium nitrate
mercuric chloride
mercuric iodide
mercuric nitrate
mercuric oxide
mercuric sulfate
mercury
mercury compounds
methylene chloride
nickel powder
nicotine
o-toluidine
osmium tetraoxide
p-dichlorobenzene
phosphorus (white)
phosphorus pentoxide
potassium cyanide
potassium periodate
selenium
silver cyanide
silver nitrate
sodium arsenate, dibasic
sodium azide
sodium cyanide
sodium fluoride
sodium oxalate
stannic chloride
thioacetamide
thiourea
thorium nitrate
unsealed radioactive sources
uranium tetrachloride
uranyl acetate
uranyl nitrate
wood's metal (lead alloy)

Carcinogens

Acetaldehyde
acetamide
Acetophenetidin
Acetylaminofluorene
Aciflourfen
acridine orange
acrylamide
acrylonitrile
Actinomycin D
Adriamycin
Aflatoxins
Alachlor
Aldrin
Allyl chloride
Allyl isothiocyanate
2-Aminoanthraquinone
Aminoazobenzene
Aminoazotoluene
4-Aminobiphenyl
3-Amino-9-ethylcarbazole
1-Amino-2-methylanthraquinone
4-Amino-2-nitrophenol
3-Amino-1,2,4-triazole
Amitraz
ammonium chromate
ammonium dichromate
aniline
aniline hydrochloride
Anisidines
anthracene
antimony oxide
antimony trioxide
arsenic
arsenic and compounds
Arsenic oxide
arsenic pentoxide
arsenic trichloride
arsenic trioxide
Arsenic trisulfide
Arsenic with inorganic compounds
Arsine
asbestos
Auramine
Azathioprine
Azobenzene
B-Propiolactone
Benz[a]anthracene
Benzal chloride
benzene
benzidine
benzo[a]pyrene
Benzo[b]fluoranthene
Benzotrichloride
Benzyl chloride
beryllium & compounds
beryllium carbonate
Bis(chloromethyl ether)
bromide
Busulfan
1,3-Butadiene
Butyl benzyl phthalate
Cadmium
cadmium & compounds
Cadmium acetate
cadmium chloride
Cadmium oxide
cadmium sulfate
Calcium arsenate
calcium chromate
Cantharidin
Captafol
Captan
carbon black
carbon tetrachloride
Carmustine
Chloramphenicol
Chlordane
Chlordecone
Chlornaphazine
Chlorodifluoromethane
chloroform
Chloromethyl anilines
Chloromethyl methyl ether
4-Chloro-o-phenylenediamine
Chloroprene
Chlorothalonil
Chromic acetate
Chromic acid
chromium & compounds
chromium (VI) oxide
Chromium carbonyl
Chromium trioxide
Chromyl chloride
Chrysene
Cisplatin
Coal tar pitch volatiles

cobalt & oxides
colchicine
Conjugated estrogens
Crotonaldehyde
Cupferron
Cycasin
Cyclophosphamide
2,4-D
Dacarbazine
Daminozide
DDT
Diallate
4,4'-Diaminodiphenylmethane
Deimethyl terephthalate
Di(2-ethylhexyl) phthalate
Di-tert-butyl-p-cresol
2,4-Diaminoanisole
Diazomethane
Dibenz(a,h)anthracene
Dibromochloromethane
Dibromochloropropane
Dichloroacetylene
3,3'-Dichlorobenzidine and salts
1,4-Dichloro-2-butene
1,2-dichloroethane
Dichloroethyl ether
2,4-Dichlorophenol
1,2-Dichloropropane
1,3-Dichloropropene
Dieldrin
Diepoxybutane
Diethyl carbamyl chloride
Diethyl sulfate
Diethystilbestrol
Dihydrosafrole
3,3'-Dimethoxybenzidine
Dimethyl carbamoyl chloride
4-Dimethylaminoaxobenzene
1,1-Dimethylhydrazine
1,2-Dimethylhydrazine
Dimethyl sulfate
Dinitronaphthalenes
2,4-Dinitrotoluene
Dioxane
1,4-dioxane
1,2-Diphenylhydrazine
Direct Blue 6
Epichlorohydrin
Estradiol 17B
Estrone
Ethinylestradiol
Ethyl acrylate
Ethylene dibromide
ethylene dichloride
ethylene oxide
Ethylene thiourea
Ethyleneimine
Fenthion
formaldehyde
Glycidyl aldehyde
Hematite
hematoxylin
Heptachlor
Heptachlor epoxide
Hexachlorobenzene
Hexachlorobutadiene
Hexachlorocyclohexane
Hexachloroethane
Hexamethylphosphoric triamide
Hydrazine
Hydrogen peroxide
hydroquinone
Indeno(1,2,3-cd) pyrene
indigo carmine
Iron oxide fume
Iron-dextran complex
isophorone
lead acetate
lead arsenate
Lead chromate
lead diacetate
lead phosphate
Lindane
Lomustine
Maneb
MCPA
Mechlorethamine
Melamine
Melphalan
mercury alkyl compounds
Methotrexate
Methyl bromide
methyl chloride
Methyl hydrazine
Methyl iodide
4,4-Methylene-bis(2-chloroaniline)
4,4'-Methylene-bis(N,N-dimethyl)aniline
Methylene chloride
Methylthiouracil
Metronidazole
Michler's ketone
Mirex

Mitomycin C
Mustard gas
1-Naphthylamine
2-Naphthylamine
5-Nitro-o-anisidine
N-Nitrosodimethylamine
N-Nitrosodiphenylamine
N-Nitrosodipropylamine
N-Phenyl-B-Naphthylamine
nickel & soluble compounds
nickel (II) acetate
Nickel carbonyl
Nickel hydroxide
Nitrapyrin
Nitrilotriacetic acid
5-Nitroacenaphthene
4-Nitrobiphenyl
Nitrofene
2-Nitropropane
o-toluidine
osmium tetraoxide
4,4-Oxydianiline
9,10-oxydiphenoxarsine
p-Cresidine
p-Nitrochlorobenzene
Pentachloroethane
Pentachloronitrobenzene
Pentachlorophenol
Phenazopyridine and its hydrochloride
Phenyl glycidyl ether
Phenylhydrazine
Phenytoin
Picloram
Polybrominated biphenyls (PBBs)
Polychlorinated biphenyls (PCBs)
Potassium arsenate
Potassium arsenite
Potassium bromate
potassium chromate
potassium permanganate
Procarbazine
procarbazine hydrochloride
Pronamide
Propane sultone
Propuleneimine
Propylene oxide
pyrogallic acid
Reserpine
Saccharin
Safrole
Selenium sulfides
semicarbazide hydrochloride
Silvex
sodium arsenate
sodium arsenite
sodium azide
sodium chromate tetrahydrate
sodium dichromate
sodium nitrate
Sodium selenite
Streptozotocin
Strontium chromate
Styrene
Styrene oxide
sudan IV
Sulfallate
Sulfurous acid 2-(p-tert-butylphenoxy-1-methylethyl-2-chloroethyl ester
2,4,5-T
talc
tannic acid
TDE
Testosterone
Tetrachlorodibenzo-p-dioxin
1,1,1,2-Tetrachloroethane
1,1,2,2-Tetrachloroethane
Tetrachloroethylene
thioacetamide
Thiotepa
Thiourea
thorium & compounds
titanium dioxide
toluene
Toluene 2,4-diisocyanate
Toluene-2,4-diamine
Toxaphene
1,1,2-Trichloroethane
Trichloroethylene
Trichlorophenols
Trinitrotoluene
Tris(2,3-dibromopropyl) phosphate
trypan blue
Urethane
Vinyl bromide
Vinyl chloride
4-Vinyl-1-cyclohexene
Vinyl cyclohexene dioxide
Vinylidene chloride
Vinylidene fluoride
Xylidines
Zinc chromate

(P) - symbolizes a potential generator of shock sensitive peroxides that should be handled with extreme care as a means to avoid accidental detonation.

B = beta

Sources:

"Handbook of Toxic and Hazardous Chemicals and Carcinogens", Third Edition, Marshall Sitig, Editor, Noyes Publications, Park Ridge, New Jersey, 1991.

"School Science Laboratories - A Guide to Some Hazardous Substances", a supplement to the NIOSH Manual of Safety and Health Hazards in the School Science Laboratory, U.S. Consumer Product Safety Commission, Washington, D.C., 1984.