

Appendix 6a. Hazard Ratings for NFPA Diamonds

This appendix provides hazard-rating information for many chemicals that might be found in a laboratory. If appropriate, the information may be used on labels for storage for when in use. Use this reference to complete the health, fire, reactivity, and special notice (S-N) areas in the diamond. Explanations for the ratings are provided in Appendix 4.

Compound	Health	Fire	Reactivity	S-N
Acetal	2	3	0	
Acetaldehyde	2	4	2	
Acetic Acid (glacial)	2	2	2	
Acetic Anhydride	3	2	2	W
Acetone	1	3	0	
Acetonitrile	2	3	0	
Acetophenone	1	2	0	
Acetyl Chloride	3	3	2	W
Acetylene	1	4	3	
Acetyl Peroxide	1	2	4	
Acrolein	3	3	2	
Acrolein Dimer	1	2	1	
Acrylic Acid (glacial)	3	2	2	
Acrylonitrile	4	3	2	
Adipic Acid	-	1	0	
Adiponitrile	4	2	0	
Aldol	3	2	1	
Allyl Acetate	1	3	0	
Allyl Alcohol	3	3	0	
Allyl Bromide	3	3	1	
Allyl Chloride	3	3	1	
Aluminum (dust or powder)	0	1	1	
3-Aminopropanol	3	2	0	
Ammonia, Anhydrous	3	1	0	
Ammonium Bromide	2	0	0	
Ammonium Chloride	2	0	0	
Ammonium Fluoride	3	0	0	
Ammonium Nitrate	2	0	3	OX
Ammonium Perchlorate	2	0	4	OX
Ammonium Permanganate	2	0	3	OX
Ammonium Sulfate	3	0	0	
Amyl Acetate	1	3	0	
Amyl Alcohol	1	3	0	
Amylamine	3	3	0	
Amylbenzene	1	2	0	
Amyl Chloride	1	3	0	
Amyl Ether	1	2	0	
Amyl Maleate	0	1	0	
Amyl Nitrate	2	2	0	OX
o-Amyl Phenol	2	1	0	
Amyl Propionate	0	2	0	
Amyl Stearate	0	1	0	
Amyl Toluene	2	2	0	

Compound	Health	Fire	Reactivity	S-N
Aniline	3	2	0	
o-Anisidine	2	1	0	
Anisole	1	2	0	
Antimony Pentafluoride	3	0	1	
Antimony Pentasulfide	3	1	1	
Arsenic Chloride	3	0	0	
Arsenic Trisulfide	3	1	0	
Barium Chlorate	1	0	2	OX
Barium Nitrate	1	0	0	OX
Barium Peroxide	1	0	0	OX
Benzaldehyde	2	2	0	
Benzoic Acid	2	1	-	
Benzol (benzene)	2	3	0	
Benzotrifluoride	4	3	0	
Benzoyl Chloride	3	2	1	W
Benzyl Acetate	1	1	0	
Benzyl Alcohol	2	1	0	
Benzyl Cyanide	2	1	0	
Benzyl Salicylate	1	1	0	
Beryllium (dust or powder)	4	1	0	
Biphenyl	2	1	0	
Boron Trifluoride	3	0	1	
Bromine	4	0	0	OX
Bromine Trifluoride	4	0	3	OX, W
Bromobenzene	2	2	0	
o-Bromotoluene	2	2	0	
Butadiene Monoxide	2	3	2	
Butane	1	4	0	
1-Butane	1	4	0	
Butenediol	1	1	0	
Butyl Acetate	1	3	0	
Butyl Acetoacetate	1	2	0	
Butyl Acrylate	2	2	2	
Butyl Alcohol	1	3	0	
Butylamine	2	3	0	
Butylamine Oleate	3	2	0	
Butylbenzene	2	2	0	
Butyl Benzoate	1	1	0	
Butyl Bromide	2	3	0	
Butyl Chloride	2	3	0	
Butylcyclohexane	0	-	0	
Butyldecalin	1	1	0	
Butyl Formate	2	3	0	
N-Butyl Isocyanate	3	2	2	
Butyl Isovalerate	0	-	-	
Butyl Lactate	1	2	0	
Butyl Methacrylate	2	2	0	

Butyl Naphthalene	1	1	0	
Butyl Nitrate	1	3	3	
Butyl Oxalate	0	1	0	
Butyl Propionate	2	3	0	
Butyl Stearate	1	1	0	

Compound	Health	Fire	Reactivity	S-N
Butyl Trichlorosilane	2	2	0	
Butyraldehyde	2	3	0	
Butyraldol	2	2	0	
Butyraldoxime	2	2	0	
Butyric Acid	2	2	0	
Calcium Carbide	1	4	2	W
Calcium Chlorate	2	0	2	OX
Calcium Cyanide	3	0	0	
Calcium Hypochlorite	2	0	2	OX
Calcium Oxide	1	0	1	
Camphor	0	2	0	
Caproic Acid	2	1	0	
Caprylaldehyde	2	2	0	
Caprylyl Chloride	3	2	1	
Carbon Disulfide	2	3	0	
Carbon Monoxide	2	4	0	
Carbon Tetrachloride	3	0	0	
Castor Oil	0	1	0	
Chlorine	3	0	0	OX
Chlorine Monoxide	3	4	3	
Chloroacetic Acid	3	1	0	
Chloroaceto Phenone	2	1	0	
Chlorobenzene	2	3	0	
Chloroform	2	0	0	
Chloropicrin	4	0	3	
Chlorotoluene	2	2	0	
Chromic Acid	3	0	1	OX
Citral	0	2	0	
Cobalt Naphtha	1	2	0	
Coconut Oil	0	1	0	
Cod Liver Oil	0	1	0	
Corn Oil	0	1	0	
Creosote Oil	2	2	0	
o-Cresol	3	2	0	
Crotonaldehyde	3	3	2	
Crotonic Acid	3	2	0	
Crotononitrile	-	1	0	
Cumene	2	3	0	
Cupric Nitrate	1	0	0	OX
Cyanogen	4	4	2	
Cyanogen Bromide	3	0	2	
Cyclobutane	1	4	0	
Cyclohexane	1	3	0	

Cyclohexanol	1	2	0	
Cyclohexanone	1	2	0	
Cyclohexene	1	3	0	
Cyclohexenone	1	3	0	
Cyclohexyl Chloride	2	3	0	
Cyclopentane	1	3	0	
Cyclopentene	1	3	1	
Cyclopentanone	2	3	0	
Cyclopropane	1	4	0	

Compound	Health	Fire	Reactivity	S-N
Decaborane	3	2	1	
Decane	0	2	0	
Decanol	0	2	0	
1-Decene	0	2	0	
Decylamine	2	1	0	
Dehydroacetic Acid	1	1	0	
Denatured Alcohol	0	3	0	
Deuterium	0	4	0	
Diacetone Alcohol	1	2	0	
Diamyl Sulfide	2	2	0	
Dibenzoyl Peroxide	1	4	4	OX
Diborane	3	4	3	W
Dibutylamine	3	2	0	
Dibutyl Ether	2	3	0	
Dibutyl Oxalate	0	1	0	
Dibutyl Phosphite	3	2	0	
Dibutyl Phthalate	0	1	0	
o-Dichlorobenzene	2	2	0	
1,2-Dichlorobutane	2	2	0	
1,1-Dichloroethene	2	4	2	
1,2-Dichloroethylene	2	3	2	
Dichlorosilane	3	4	2	
Didecyl Ether	0	1	0	
Diesel Fuel Oil No. 1	0	2	0	
Diethylamine	2	3	0	
Diethylene Glycol Dimethyl Ether	1	2	1	
Diethylene Triamine	3	1	0	
Diethyl Fumarate	1	1	0	
Diethyl Ketone	1	3	0	
Diethyl Succinate	1	1	0	
Diethyl Sulfate	3	1	1	
Diethylzinc	0	3	3	W
Dihexylamine	2	1	0	
Diisobutylamine	3	3	0	
Diisobutyl Carbinol	1	2	0	
Diisobutyl Ketone	1	2	0	
Diisooctyl Phthalate	0	1	0	
Diisopropylamine	3	3	0	
Diisopropyl Benzene	0	2	0	

Diketene	2	2	2	
Dimethylamine	3	4	0	
N, N-Dimethylaniline	3	2	0	
2,2-Dimethylbutane	1	3	0	
Dimethyldioxane	2	3	0	
N, N-Dimethylformamide	1	2	0	
Dimethyl Maleate	1	1	0	
2,3-Dimethyloctane	0	2	0	
2,3-Dimethylpentane	0	3	0	
Dimethyl Phthalate	0	1	0	
Dimethyl Sulfate	4	2	0	
Dimethyl Sulfide	2	4	0	

Compound	Health	Fire	Reactivity	S-N
Dimethyl Sulfoxide	1	1	0	
Dinitrobenzene (ortho)	3	1	4	
2,4-Dinitrotoluene	3	1	3	
Diocetyl Ether	0	1	0	
p-Dioxane	2	3	1	
Dioxolane	2	3	2	
Dipentene	0	2	0	
Diphenylamine	3	1	0	
Diphenyl Phthalate	0	1	0	
Dipropylamine	3	3	0	
Divinylbenzene	2	2	2	
Divinyl Ether	2	3	2	
Dodecane	0	2	0	
1-Dodecanethiol	2	1	0	
1-Dodecanol	0	1	0	
Endrin (dry)	2	0	0	
Epichlorohydrin	3	2	1	
Ethane	1	4	0	
Ethanolamine	2	2	0	
Ethoxybenzene	0	2	0	
3-Ethoxypropanal	2	2	0	
Ethyl Acetate	1	3	0	
Ethyl Acrylate	2	3	2	
Ethyl Alcohol	0	3	0	
Ethylamine	3	4	0	
Ethylbenzene	2	3	0	
Ethyl Benzoate	1	1	0	
Ethyl Borate	2	3	0	
Ethyl Bromide	2	1	0	
Ethylbutylamine	3	3	0	
Ethyl Butyl Carbonate	2	2	1	
Ethyl Butyl Ketone	1	2	0	
Ethyl Butyrate	0	3	0	
Ethyl Caprylate	2	2	0	
Ethyl Chloride	2	4	0	
Ethyl Crotonate	2	3	0	

Ethylcyclohexane	1	3	0	
Ethylene	1	4	2	
Ethylenediamine	3	2	0	
Ethylene Dichloride	2	3	0	
Ethylene Glycol	1	1	0	
Ethylene Glycol Dibutyl Ether	1	2	0	
Ethylene Glycol Ethylbutyl Ether	1	2	0	
Ethylene Glycol Monobutyl Ether Acetate	1	2	0	
Ethylene Oxide	2	4	3	
Ethyl Ether	2	4	1	
Ethyl Formate	2	3	0	
Ethyl Isobutyrate	0	3	0	
Ethyl Mercaptan	2	4	0	
4-Ethylmorpholine	2	3	0	
Ethyl Nitrate	2	3	4	
Ethyl Oxalate	0	2	0	

Compound	Health	Fire	Reactivity	S-N
Ethyl Propionate	-	3	0	
Ethyl Silicate	2	2	0	
Fluorine	4	0	3	W, OX
Formaldehyde (water solution)	2	2	0	
Formamide	2	1	-	
Formic Acid	3	2	0	
Furan	1	4	1	
Furfuryl Alcohol	1	2	1	
Gas, Natural	1	4	0	
Gasoline, 56-100 Octane	1	3	0	
Glycerine	1	1	0	
Glycidyl Acrylate	0	2	0	
Heptane	1	3	0	
2-Heptanol	0	2	0	
Heptylene	0	3	0	
Hexadecane	0	1	0	
Hexanal	2	3	1	
Hexane	1	3	0	
3-Hexanone	1	3	0	
1-Hexene	1	3	0	
Hexyl Alcohol	1	2	0	
Hexyl Methacrylate	0	2	0	
Hydrazine (Anhydrous)	3	3	2	
Hydrocyanic Acid-96%	4	4	2	
Hydrogen	0	4	0	
Hydrochloric Acid	3	0	0	
Hydrobromic Acid	3	0	0	
Hydrofluoric Acid	4	0	0	
Hydrogen Peroxide (35% to 52% by weight)	2	0	1	OX
Hydrogen Sulfide	3	4	0	
Hydroquinone	2	1	0	

Isoamyl Acetate	1	3	0	
Isoamyl Alcohol	1	2	0	
Isobutane	1	4	0	
Isobutyl Acetate	1	3	0	
Isobutyl Acrylate	1	3	1	
Isobutyl Alcohol	1	3	0	
Isobutylbenzene	2	2	0	
Isobutyl Chloride	2	3	0	
Isobutyl Methyl Ketone	2	3	0	
Isobutyraldehyde	2	3	1	
Isobutyric Acid	1	2	0	
Isobutyric Anhydride	1	2	1	W
Isodecaldehyde	0	2	0	
Isodecanoic Acid	0	1	0	
Isohexane	1	3	0	
Isooctane	0	3	0	
Isooctanoic Acid	0	1	0	
Isooctyl Alcohol	0	2	0	
Isopentane	1	4	0	
Isophorone	2	2	0	

Compound	Health	Fire	Reactivity	S-N
Isoprene	2	4	2	
Isopropyl Acetate	1	3	0	
Isopropyl Alcohol	1	3	0	
Isopropyl Chloride	2	4	0	
Isopropyl Ether	2	3	1	
Jet Fuels (JP-4)	1	3	0	
Jet Fuels (JP-5)	0	2	0	
Lanolin	0	1	0	
Lead Arsenates	2	0	0	
Lead Nitrate	1	0	0	OX
Lead Thiocyanate	1	1	1	
Lithium	1	1	2	W
Lithium Hydride	3	4	2	W
Lubricating Oil, Mineral	0	1	0	
Magnesium (including all alloys)	0	1	2	W
Magnesium Nitrate	1	0	0	OX
Magnesium Perchlorate	1	0	0	OX
Maleic Anhydride	3	1	1	
Mercuric Cyanide	3	0	0	
Mesityl Oxide	3	3	0	
Methacrylic Acid	3	2	2	
Methane	1	4	0	
Methyl Acetate	1	3	0	
Methyl Acrylate	2	3	2	
Methylal	2	3	2	
Methyl Alcohol	1	3	0	
Methylamine	3	4	0	

Methyl Amyl Ketone	1	2	0	
Methyl Benzoate	0	2	0	
Methyl Borate	2	3	1	
Methyl Bromide	3	1	0	
Methyl Butyl Ketone	2	3	0	
Methyl Carbonate	2	3	1	
Methyl Cellosolve Acetate	0	2	0	
Methyl Chloride	2	4	0	
Methyl Chloroacetate	2	2	1	
Methylcyclohexane	2	3	0	
Methylcyclohexanone	-	2	0	
Methylcyclopentane	2	3	0	
Methylene Chloride	3	1	1	
Methylene Diisocyanate	1	2	1	W
Methyl Ether	2	4	1	
Methyl Ethyl Ether	2	4	1	
Methyl Ethyl Ketone	1	3	0	
Methyl Formate	2	4	0	
Methyl Glycol Acetate	1	2	0	
Methyl Hexyl Ketone	0	2	0	
Methylhydrazine	3	3	2	
Methyl Isoamyl Ketone	1	2	0	
Methyl Isobutyl Carbinol	2	2	0	
Methyl Isobutyl Ketone	2	3	0	

Compound	Health	Fire	Reactivity	S-N
Methyl Isocyanate	2	3	3	W
Methyl Lactate	1	2	0	
Methyl Mercaptan	2	4	0	
Methyl Methacrylate	2	3	2	
Methyl Parathion (solid)	4	1	2	
2-Methyl-1-Pentene	1	3	0	
Methyl Phenylacetate	0	2	0	
1-Methyl Piperazine	2	2	0	
Methyl Propionate	1	3	0	
Methyl Propyl Ketone	2	3	0	
2-Methylpyrazine	2	2	0	
Methylpyrrole	2	3	1	
Methylpyrrolidine	2	3	1	
Methyl Salicylate	1	1	0	
Methyl Stearate	0	1	0	
Methyl Toluene Sulfonate	2	1	0	
Methyl Vinyl Ketone	3	3	2	
Mineral Oil	0	1	0	
Mineral Spirits	0	2	0	
Morpholine	2	3	0	
Mustard Oil	3	2	0	
Naptha	1	3	0	
Napthalene	2	2	0	
Nickel Carbonyl	4	3	3	
Nicotine	4	1	0	

Nitric Acid	3	0	0	OX
p-Nitroaniline	3	1	3	
Nitrobenzene	3	2	0	
Nitrobiphenyl	2	1	0	
Nitrochlorobenzene	3	1	1	
Nitroethane	1	3	3	
Nitrogen (liquified)	3	0	0	
Nitrogen Peroxide	3	0	0	OX
Nitrogen Trioxide	3	0	0	OX
Nitroglycerine	2	2	4	
Nitromethane	1	3	3	
1-Nitropropane	1	3	1	
o-Nitrotoluene	2	1	4	
Nonadecane	0	1	0	
Nonane	0	3	0	
Nonene	0	3	0	
Nonylbenzene	0	1	0	
Octadecane	0	1	0	
Octane	0	3	0	
2-Octanol	1	2	0	
1-Octene	1	3	0	
Oleic Acid	0	1	0	
Olive Oil	0	1	0	
Oxalic Acid	2	1	0	
Oxygen (liquid)	3	0	0	OX
Paraffin Oil	0	1	0	
Paraformaldehyde	2	1	0	

Compound	Health	Fire	Reactivity	S-N
Paraldehyde	2	3	1	
Parathion	4	1	2	
Pentaborane	3	3	2	
Pentachlorophenol (dry)	3	0	0	
Pentane	1	4	0	
Pentanoic Acid	2	1	0	
Pentaphen	2	1	0	
1-Pentene	1	4	0	
Perchloric Acid	3	0	3	OX
Perchloroethylene	2	0	0	
Petroleum, Crude	1	3	0	
Petroleum Ether	1	4	0	
Phenol	3	2	0	
Phenylacetaldehyde	1	2	0	
Phenyl Acetate	1	2	0	
Phenylacetic Acid	1	1	0	
o-Phenylenediamine	-	1	0	
Phenylhydrazine	3	2	0	
Phenylpropyl Alcohol	0	1	0	
Phosgene	4	0	0	
Phosphine	3	4	1	
Phosphoric Acid	2	0	0	

Phosphorus Pentasulfide	3	1	2	W
Phosphorus, Red	0	1	1	
Phosphorus Trichloride	3	0	2	W
Phosphorus, White or Yellow	3	3	1	
Phosphoryl Chloride	3	0	2	W
Phthalic Acid	0	1	1	
Phthalic Anhydride	2	1	0	
Picric Acid	2	4	4	
Pine Oil	0	2	0	
Pine Tar	0	2	0	
Piperazine	2	2	0	
Piperidine	2	3	3	
Potassium	3	1	2	W
Potassium Bromate	1	0	0	OX
Potassium Chlorate	2	0	0	OX
Potassium Cyanide	3	0	0	
Potassium Hydroxide (lye)	3	0	1	
Potassium Nitrate	1	0	0	OX
Potassium Permanganate	1	0	0	OX
Potassium Peroxide	3	0	2	OX, W
Potassium Persulfate	1	0	0	OX
Potassium Sulfide	2	1	0	
Propane	1	4	0	
Propionic Acid	2	2	0	
Propionyl Chloride	3	3	1	
Propyl Acetate	1	3	0	
Propyl Alcohol	1	3	0	
Propylamine	3	3	0	
Propyl Chloride	2	3	0	

Compound	Health	Fire	Reactivity	S-N
Propylene	1	4	1	
Propylene Dichloride	2	3	0	
Propylene Glycol	0	1	0	
Propylene Oxide	2	4	2	
n-Propyl Ether	-	3	0	
Propyl Nitrate	2	4	3	OX
Pyridine	2	3	0	
Pyrrole	2	2	0	
Pyrrolidine	2	3	1	
Quinoline	2	1	0	
Resorcinol	-	1	0	
Rhodinol	0	1	0	
Salicylic Acid	0	1	0	
Silane	1	4	2	
Silver Nitrate	1	0	0	OX
Sodium	3	1	2	W
Sodium Chlorate	1	0	2	OX

Sodium Chlorite	1	1	2	OX
Sodium Cyanide	3	0	0	
Sodium Fluoride	2	0	0	
Sodium Hydride	3	3	2	W
Sodium Hydroxide (lye)	3	0	1	
Sodium Nitrate	1	0	0	OX
Sodium Perchlorate	2	0	2	OX
Sodium Peroxide	3	0	2	OX, W
Sodium-Potassium Alloys	3	3	2	W
Sodium Sulfide	2	1	0	
Stannic Chloride	3	0	1	
Stearic Acid	1	1	0	
Stearyl Alcohol	0	-	0	
Stoddard Solvent	0	2	0	
Styrene	2	3	2	
Sulfur	2	1	0	
Sulfur Chloride	2	1	2	W
Sulfur Dioxide	2	0	0	
Sulfuric Acid	3	0	2	W
Tannic Acid	0	1	0	
Terephthaloyl Chloride	3	1	0	
Tetrachlorobenzene	0	10	0	
Tetrachloroethylene	2	0	0	
Tetradecanol	0	1	0	
Tetraethylene Glycol	1	1	0	
Tetraethyl Lead, Compounds	3	2	3	
Tetrafluoroethylene	3	4	3	
Tetrahydrofuran	2	3	1	
Tetramethyl Lead, Compounds	3	3	3	
Thionyl Chloride	3	0	2	W
Thiophene	2	3	0	
Titanium Tetrachloride	3	0	1	
Toluene	2	3	0	

Compound	Health	Fire	Reactivity	S-N
Toluene-2,4-Diisocyanate	3	1	1	
o-Toluidine	3	2	0	
Triamylamine	2	1	0	
Triamylbenzene	0	1	0	
Tributylamine	2	2	0	
Tributyl Phosphate	2	1	0	
Tributylphosphine	0	1	0	
Tributyl Phosphite	2	1	1	
1,1,1-Trichloroethane	2	1	0	
Trichloroethylene	2	1	0	
Trichloroethylsilane	3	3	0	
Trichlorosilane	3	4	2	W

Triethanolamine	2	1	1	
Triethylamine	2	3	0	
Triethyl Phosphate	0	1	1	
Triisobutyl Borate	3	2	1	
Trimethylamine	2	4	0	
Trimethylchlorosilane	3	3	2	W
Trinitrobenzene	2	4	4	
Trinitrotoluene (tnt)	2	4	4	
Trioxane	2	2	0	
Triphenylmethane	0	1	0	
Tripropylene	0	3	0	
Tripropylene Glycol	0	1	0	
Turpentine	1	3	0	
2-Undecanol	1	1	0	
Valeraldehyde	1	3	0	
Vanadium Tetrachloride	3	0	2	W
Vinyl Acetate	2	3	2	
Vinyl Bromide	2	0	1	
Vinyl Butyl Ether	2	3	2	
Vinyl Chloride	2	4	1	
Vinyl Crotonate	2	3	2	
Vinyl Ethyl Alcohol	0	2	0	
Vinyl Ethyl Ether	2	4	2	
Vinyl Fluoride	1	4	2	
Vinylidene Chloride	2	4	2	
Vinylidene Fluoride	1	4	2	
Vinyl Methyl Ether	2	4	2	
Vinyl Propionate	2	3	2	
Vinyl Toluene	2	2	1	
o-Xylene	2	3	0	
o-Xylidine	3	1	0	
Zinc (powder or dust)	0	1	1	
Zinc Chlorate	2	0	2	OX
Zirconium Tetrachloride	3	0	1	