

Appendix 13: Chemicals of Interest (COI)

The Department of Homeland Security has issued a regulation entitled "Chemical Facilities Anti Terrorism Standards" (CFATS). The following list is adapted from 6 CFR Part 27 Appendix to Chemical Facility Anti-Terrorism Standards; Final Rule.

Chemicals of Interest (COI)	Synonym	Chemical Abstract Service (CAS) #
Acetaldehyde		75-07-0
Acetone cyanohydrin, stabilized		75-86-5
Acetyl bromide		506-96-7
Acetyl chloride		75-36-5
Acetyl iodide		507-02-8
Acetylene	[Ethyne]	74-86-2
Acrolein	[2-Propenal] or Acrylaldehyde	107-02-8
Acrylonitrile	[2-Propenenitrile]	107-13-1
Acrylyl chloride	[2-Propenoyl chloride]	814-68-6
Allyl alcohol	[2-Propen-1-ol]	107-18-6
Allylamine	[2-Propen-1-amine]	107-11-9
Allyltrichlorosilane, stabilized		107-37-9
Aluminum (powder)		7429-90-5
Aluminum bromide, anhydrous		7727-15-3
Aluminum chloride, anhydrous		7446-70-0
Aluminum phosphide		20859-73-8
Ammonia (anhydrous)		7664-41-7
Ammonia (conc. 20% or greater)		7664-41-7
Ammonium nitrate, [with more than 0.2 percent combustible substances, including any organic substance calculated as carbon, to the exclusion of any other added substance]		6484-52-2
Ammonium picrate		131-74-8
Amyltrichlorosilane		107-72-2
Antimony pentafluoride		7783-70-2
Arsenic trichloride	[Arsenous trichloride]	7784-34-1
Arsine		7784-42-1
Barium azide		18810-58-7
1,4-Bis(2-chloroethylthio)-nbutane		142868-93-7
Bis(2-chloroethylthio)methane		63869-13-6

Chemicals of Interest (COI)	Synonym	Chemical Abstract Service (CAS) #
Bis(2chloroethylthiomethyl) ether		63918-90-1
1,5-Bis(2-chloroethylthio)-npentane		142868-94-8
1,3-Bis(2-chloroethylthio)-npropane		63905-10-2
Boron tribromide		10294-33-4
Boron trichloride	[Borane, trichloro]	10294-34-5
Boron trifluoride	[Borane, trifluoro]	2095581
Boron trifluoride compound with methyl ether (1:1)	[Boron, trifluoro [oxybis (methane)],T-4-]	353-42-4
Bromine		7726-95-6
Bromine chloride		13863-41-7
Bromine pentafluoride		7789-30-2
Bromine trifluoride		7787-71-5
Bromotrifluoroethylene	[Ethene, bromotrifluoro-]	598-73-2
1,3-Butadiene		106-99-0
Butane		106-97-8
Butene		25167-67-3
1-Butene		106-98-9
2-Butene		107-01-7
2-Butene-cis		590-18-1
2-Butene-trans	[2-Butene, (E)]	624-64-6
Butyltrichlorosilane		7521-80-4
Calcium hydrosulfite	[Calcium dithionite]	15512-36-4
Calcium phosphide		1305-99-3
Carbon disulfide		75-15-0
Carbon oxysulfide	[Carbon oxide sulfide (COS); carbonyl sulfide]	463-58-1
Carbonyl fluoride		353-50-4
Carbonyl sulfide		463-58-1
Chlorine		7782-50-5
Chlorine dioxide	[Chlorine oxide, (ClO2)]	10049-04-4
Chlorine monoxide	[Chlorine oxide]	7791-21-1
Chlorine pentafluoride		13637-63-3
Chlorine trifluoride		7790-91-2
Chloroacetyl chloride		79-04-9
2-Chloroethylchloromethylsulfide		2625-76-5
Chloroform	[Methane, trichloro-]	67-66-3
Chloromethyl ether	[Methane, oxybis(chloro-)]	542-88-1
Chloromethyl methyl ether	[Methane, chloromethoxy-]	107-30-2
1-Chloropropylene	[1-Propene, 1-chloro-]	590-21-6

Chemicals of Interest (COI)	Synonym	Chemical Abstract Service (CAS) #
2-Chloropropylene	[1-Propene, 2-chloro-]	557-98-2
Chlorosarin	[o-Isopropyl methylphosphonochloridate]	1445-76-7
Chlorosoman	[o-Pinacolyl methylphosphonochloridate]	7040-57-5
Chlorosulfonic acid		7790-94-5
Chromium oxychloride		14977-61-8
Crotonaldehyde	[2-Butenal]	4170-30-3
Crotonaldehyde, (E)	[2-Butenal], (E)-]	123-73-9
Cyanogen	[Ethanedinitrile]	460-19-5
Cyanogen chloride		506-77-4
Cyclohexylamine	[Cyclohexanamine]	108-91-8
Cyclohexyltrichlorosilane		98-12-4
Cyclopropane		75-19-4
DF	Methyl phosphonyl difluoride	676-99-3
Diazodinitrophenol		87-31-0
Diborane		19287-45-7
Dichlorosilane	[Silane, dichloro-]	4109-96-0
N,N-(2diethylamino)ethanethiol		100-38-9
Diethyldichlorosilane		1719-53-5
o,o-Diethyl S-[2(diethylamino)ethyl] phosphorothiolate		78-53-5
Diethyleneglycol dinitrate		693-21-0
Diethyl methylphosphonite		15715-41-0
N,N-Diethyl phosphoramidic dichloride		1498-54-0
N,N-(2diisopropylamino)ethanethiol	N,N-diisopropyl-(beta)aminoethane thiol	1439977
Difluoroethane	[Ethane, 1,1-difluoro-]	75-37-6
N,N-Diisopropyl phosphoramidic dichloride		23306-80-1
1,1-Dimethylhydrazine	[Hydrazine, 1, 1-dimethyl-]	57-14-7
Dimethylamine	[Methanamine, N-methyl-]	124-40-3
N,N-(2dimethylamino)ethanethiol		108-02-1
Dimethyldichlorosilane	[Silane, dichlorodimethyl-]	75-78-5
N,N-Dimethyl phosphoramidic dichloride	[Dimethylphosphoramidodic hloridate]	677-43-0
2,2-Dimethylpropane	[Propane, 2,2-dimethyl-]	463-82-1
Dingu	[Dinitroglycoluril]	55510-04-8

Chemicals of Interest (COI)	Synonym	Chemical Abstract Service (CAS) #
Dinitrogen tetroxide		10544-72-6
Dinitrophenol		25550-58-7
Dinitroresorcinol		519-44-8
Diphenyldichlorosilane		80-10-4
Dipicryl sulfide		115937
Dipicrylamine [or] Hexyl	[Hexanitrodiphenylamine]	131-73-7
N,N-(2dipropylamino)ethanethio I		1439946
N,N-Dipropyl phosphoramidic dichloride		40881-98-9
Dodecyltrichlorosilane		4484-72-4
Epichlorohydrin	[Oxirane, (chloromethyl)-]	106-89-8
Ethane		74-84-0
Ethyl acetylene	[1-Butyne]	107-00-6
Ethyl chloride	[Ethane, chloro-]	75-00-3
Ethyl ether	[Ethane, 1,1-oxybis-]	60-29-7
Ethyl mercaptan	[Ethanethiol]	75-08-1
Ethyl nitrite	[Nitrous acid, ethyl ester]	109-95-5
Ethyl phosphonyl difluoride		753-98-0
Ethylamine	[Ethanamine]	75-04-7
Ethyldiethanolamine		139-87-7
Ethylene	[Ethene]	74-85-1
Ethylene oxide	[Oxirane]	75-21-8
Ethylenediamine	[1,2-Ethanediamine]	107-15-3
Ethyleneimine	[Aziridine]	151-56-4
Ethylphosphonothioic dichloride		993-43-1
Ethyltrichlorosilane		115-21-9
Fluorine		7782-41-4
Fluorosulfonic acid		7789-21-1
Formaldehyde (solution)		50-00-0
Furan		110-00-9
Germane		7782-65-2
Germanium tetrafluoride		7783-58-6
Guanyl nitrosaminoguanylidene hydrazine		
Hexaethyl tetraphosphate and compressed gas mixtures		757-58-4
Hexafluoroacetone		684-16-2
Hexanitrostilbene		20062-22-0

Hexolite	[Hexotol]	121-82-4
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Chemicals of Interest (COI)	Synonym	Chemical Abstract Service (CAS) #
Hexyltrichlorosilane		928-65-4
HMX	[Cyclotetramethylenetetranitramine]	2691-41-0
HN1 (nitrogen mustard-1)	[Bis(2-chloroethyl)ethylamine]	538-07-8
HN2 (nitrogen mustard-2)	[Bis(2-chloroethyl)methylamine]	51-75-2
HN3 (nitrogen mustard-3)	[Tris(2-chloroethyl)amine]	555-77-1
Hydrazine		302-01-2
Hydrochloric acid (conc. 37% or greater)		7647-01-0
Hydrocyanic acid		74-90-8
Hydrofluoric acid (conc. 50% or greater)		7664-39-3
Hydrogen		1333-74-0
Hydrogen bromide (anhydrous)		10035-10-6
Hydrogen chloride (anhydrous)		7647-01-0
Hydrogen cyanide	[Hydrocyanic acid]	74-90-8
Hydrogen fluoride (anhydrous)		7664-39-3
Hydrogen iodide, anhydrous		10034-85-2
Hydrogen peroxide (concentration of at least 35%)		7722-84-1
Hydrogen selenide		2148909
Hydrogen sulfide		2148878
Iodine pentafluoride		7783-66-6
Iron, pentacarbonyl	[Iron carbonyl (Fe (CO) ₅), (TB511)-]	13463-40-6
Isobutane	[Propane, 2-methyl]	75-28-5
Isobutyronitrile	[Propanenitrile, 2-methyl-]	78-82-0
Isopentane	[Butane, 2-methyl-]	78-78-4
Isoprene	[1,3-Butadiene, 2-methyl-]	78-79-5
Isopropyl chloride	[Propane, 2-chloro-]	75-29-6
Isopropyl chloroformate	[Carbonochloridic acid, 1methylethyl ester]	108-23-6
Isopropylamine	[2-Propanamine]	75-31-0
Isopropylphosphonothioic dichloride		1498-60-8
Isopropylphosphonyl difluoride		677-42-9
Lead azide		13424-46-9
Lead styphnate	[Lead trinitroresorcinate]	15245-44-0

Lewisite 1	[2-Chlorovinyl]dichloroarsine]	541-25-3
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Chemicals of Interest (COI)	Synonym	Chemical Abstract Service (CAS) #
Lewisite 2	[Bis(2-chlorovinyl)chloroarsine]	40334-69-8
Lewisite 3	[Tris(2-chlorovinyl)arsine]	40334-70-1
Lithium amide		7782-89-0
Lithium nitride		26134-62-3
Magnesium (powder)		7439-95-4
Magnesium diamide		7803-54-5
Magnesium phosphide		12057-74-8
MDEA	[Methyldiethanolamine]	105-59-9
Mercury fulminate		628-86-4
Methacrylonitrile	[2-Propenenitrile, 2-methyl-]	126-98-7
Methane		74-82-8
2-Methyl-1-butene		563-46-2
3-Methyl-1-butene		563-45-1
Methyl chloride	[Methane, chloro-]	74-87-3
Methyl chloroformate	[Carbonochloridic acid, methyl ester]	79-22-1
Methyl ether	[Methane, oxybis-]	115-10-6
Methyl formate	[Formic acid Methyl ester]	107-31-3
Methyl hydrazine	[Hydrazine, methyl-]	60-34-4
Methyl isocyanate	[Methane, isocyanato-]	624-83-9
Methyl mercaptan	[Methanethiol]	74-93-1
Methyl thiocyanate	[Thiocyanic acid, methyl ester]	556-64-9
Methylamine	[Methanamine]	74-89-5
Methylchlorosilane		993-00-0
Methyldichlorosilane		75-54-7
Methylphenyldichlorosilane		149-74-6
Methylphosphonothioic dichloride		676-98-2
2-Methylpropene	[1-Propene, 2-methyl-]	115-11-7
Methyltrichlorosilane	[Silane, trichloromethyl-]	75-79-6
Sulfur mustard (Mustard gas (H))	[Bis(2-chloroethyl)sulfide]	505-60-2
O-Mustard (T)	[Bis(2-chloroethylthioethyl)ether]	63918-89-8
Nickel Carbonyl		13463-39-3
Nitric acid		7697-37-2
Nitric oxide	[Nitrogen oxide (NO)]	10102-43-9
Nitrobenzene		98-95-3
5-Nitrobenzotriazol		160318

Nitrocellulose		9004-70-0
Nitrogen mustard hydrochloride	[Bis(2-chloroethyl)methylamine hydrochloride]	55-86-7

Chemicals of Interest (COI)	Synonym	Chemical Abstract Service (CAS) #
Nitrogen trioxide		10544-73-7
Nitroglycerine		55-63-0
Nitromannite	[Mannitol hexanitrate, wetted]	15825-70-4
Nitromethane		75-52-5
Nitrostarch		9056-38-6
Nitrosyl chloride		2696-92-6
Nitrotriazolone		932-64-9
Nonyltrichlorosilane		5283-67-0
Octadecyltrichlorosilane		112-04-9
Octolite		57607-37-1
Octonal		78413-87-3
Octyltrichlorosilane		5283-66-9
Oleum (Fuming Sulfuric acid)	[Sulfuric acid, mixture with sulfur trioxide]	8014-95-7
Oxygen difluoride		7783-41-7
1,3-Pentadiene		504-60-9
Pentane		109-66-0
1- Pentene		109-67-1
2-Pentene, (E)		646-04-8
2-Pentene, (Z)		627-20-3
Pentolite		8066-33-9
Peracetic acid	[Ethaneperoxic acid]	79-21-0
Perchloromethylmercaptan	[Methanesulphenyl chloride, trichloro-]	594-42-3
Perchloryl fluoride		7616-94-6
PETN	[Pentaerythritol tetranitrate]	78-11-5
Phenyltrichlorosilane		98-13-5
Phosgene	[Carbonic dichloride] or [carbonyl dichloride]	75-44-5
Phosphine		7803-51-2
Phosphorus		7723-14-0
Phosphorus oxychloride	[Phosphoryl chloride]	10025-87-3
Phosphorus pentabromide		7789-69-7
Phosphorus pentachloride		10026-13-8
Phosphorus pentasulfide		1314-80-3
Phosphorus trichloride		2125683
Picrite	[Nitroguanidine]	556-88-7
Piperidine		110-89-4

Potassium chlorate		698078
Potassium cyanide		151-50-8
Potassium nitrate		7757-79-1
Potassium perchlorate		7778-74-7

Chemicals of Interest (COI)	Synonym	Chemical Abstract Service (CAS) #
Potassium permanganate		7722-64-7
Potassium phosphide		20770-41-6
Propadiene	[1,2-Propadiene]	463-49-0
Propane		74-98-6
Propionitrile	[Propanenitrile]	107-12-0
Propyl chloroformate	[Carbonchloridic acid, propylester]	109-61-5
Propylene	[1-Propene]	115-07-1
Propylene oxide	[Oxirane, methyl-]	75-56-9
Propyleneimine	[Aziridine, 2-methyl-]	75-55-8
Propylphosphonothioic dichloride		227920
Propylphosphonyl difluoride		690-14-2
Propyltrichlorosilane		141-57-1
Propyne	[1-Propyne]	74-99-7
QL	[o-Ethyl-o-2-diisopropylaminoethyl methylphosphonite]	57856-11-8
RDX	[Cyclotrimethylenetrinitramine]	121-82-4
RDX and HMX mixtures		121-82-4
Sarin	[o-Isopropyl methylphosphonofluoridate]	107-44-8
Selenium hexafluoride		7783-79-1
Sesquimustard	[1,2-Bis(2-chloroethylthio)ethane]	3563-36-8
Silane		7803-62-5
Silicon tetrachloride		10026-04-7
Silicon tetrafluoride		7783-61-1
Sodium azide		26628-22-8
Sodium chlorate		2146053
Sodium cyanide		143-33-9
Sodium hydrosulfite	[Sodium dithionite]	7775-14-6
Sodium nitrate		7631-99-4
Sodium phosphide		12058-85-4
Soman	[o-Pinacolyl methylphosphonofluoridate]	96-64-0
Stibine		7803-52-3
Strontium phosphide		12504-16-4

Sulfur dioxide (anhydrous)		2025884
Sulfur tetrafluoride	[Sulfur fluoride (SF4), (T-4)]	7783-60-0
Sulfur trioxide		2025949
Sulfuryl chloride		7791-25-5

Chemicals of Interest (COI)	Synonym	Chemical Abstract Service (CAS) #
Tabun	[o-Ethyl-N,Ndimethylphosphoramido cyanidate]	77-81-6
Tellurium hexafluoride		7783-80-4
Tetrafluoroethylene	[Ethene, tetrafluoro-]	116-14-3
Tetramethyllead	[Plumbane, tetramethyl-]	75-74-1
Tetramethylsilane	[Silane, tetramethyl-]	75-76-3
Tetranitroaniline		53014-37-2
Tetranitromethane	[Methane, tetranitro-]	509-14-8
Tetrazene	[Guanyl nitrosaminoguanyltetrazene]	109-27-3
1H-Tetrazole		288-94-8
Thiodiglycol	[Bis(2-hydroxyethyl)sulfide]	111-48-8
Thionyl chloride		2125597
Titanium tetrachloride	[Titanium chloride (TiCl4) (T-4)-]	7550-45-0
TNT	[Trinitrotoluene]	118-96-7
Torpex	[Hexotonal]	67713-16-0
Trichlorosilane	[Silane, trichloro-]	10025-78-2
Triethanolamine		102-71-6
Triethanolamine hydrochloride		637-39-8
Triethyl phosphite		122-52-1
Trifluoroacetyl chloride		354-32-5
Trifluorochloroethylene	[Ethene, chlorotrifluoro]	79-38-9
Trimethylamine	[Methanamine, N,N-dimethyl-]	75-50-3
Trimethylchlorosilane	[Silane, chlorotrimethyl-]	75-77-4
Trimethyl phosphite		121-45-9
Trinitroaniline		26952-42-1
Trinitroanisole		606-35-9
Trinitrobenzene		99-35-4
Trinitrobenzenesulfonic acid		2508-19-2
Trinitrobenzoic acid		129-66-8
Trinitrochlorobenzene		88-88-0
Trinitrofluorenone		129-79-3
Trinitro-meta-cresol		602-99-3

Trinitronaphthalene		55810-17-8
Trinitrophenetole		4732-14-3
Trinitrophenol		88-89-1
Trinitroresorcinol		82-71-3
Tritonal		54413-15-9

Chemicals of Interest (COI)	Synonym	Chemical Abstract Service (CAS) #
Tungsten hexafluoride		7783-82-6
Vinyl acetate monomer	[Acetic acid ethenyl ester]	108-05-4
Vinyl acetylene	[1-Buten-3-yne]	689-97-4
Vinyl chloride	[Ethene, chloro-]	75-01-4
Vinyl ethyl ether	[Ethene, ethoxy-]	109-92-2
Vinyl fluoride	[Ethene, fluoro-]	75-02-5
Vinyl methyl ether	[Ethene, methoxy-]	107-25-5
Vinylidene chloride	[Ethene, 1,1-dichloro-]	75-35-4
Vinylidene fluoride	[Ethene, 1,1-difluoro-]	75-38-7
Vinyltrichlorosilane		75-94-5
VX	[o-Ethyl-S-2-diisopropylaminoethyl methyl phosphonothiolate]	50782-69-9
Zinc hydrosulfite	[Zinc dithionite]	7779-86-4

Appendix 14: COI Approval Form



College of Arts and Sciences

COI - CHEMICAL STORAGE FACILITY APPROVAL FORM

The purpose of the Chemical Approval Form is to assure an adequate review held to examine both the physical and health hazards associated with a proposed Chemical of Interest (COI) **before** use. **All new COI chemicals defined by the Department of Homeland Security (Appendix 13 of the Chemical Hygiene Plan) used in the College are to be evaluated through this process prior to use.**

During the approval process, appropriate consultant(s) will review the physical and health hazards; make recommendations for proper handling and protective equipment measures, and to recommend adequate training for compliance with university policy. The decision for approval or rejection of chemicals will be made in conjunction with specific administration and the department where the chemical will be stored.

Section A: Laboratory Supervisor General Information

Last Name:

First Name:

EKU ID Number:

Department:

Phone:

E-mail:

Section B: Type of Compound(s) Requested

Specific Compound Name(s):

If Controlled, List the Agency:

Section C: Purpose / Location of the Compound(s)

Purpose: Teaching ☐

Course(s): _____

Research ☐

Please explain specific purpose:

Compound(s) Location (Bldg/Room):

Specific Storage of Compound(s):

Approval Signatures

Laboratory Supervisor: _____
Type Name Here

Department Chair: _____
Type Name Here

Chemical Safety Officer: _____ EH&S Director: _____

Type Name Here

Type Name Here