

Section 5 – Work with Hazardous Materials

This Section describes precautions that should be taken when conducting procedures involving chemically hazardous materials including:

- Flammable (5.1)
- Corrosive (5.2)
- Reactive (5.3)
- Compressed Gases (5.4)
- Cryogenic Systems (5.5)
- Acute Toxins (5.6)
- Reproductive Toxins (5.7)
- Select Carcinogens (5.8)

The faculty are responsible for the use of hazardous materials and must inform everyone involved in working with such materials of the associated hazards, and appropriate emergency response measures to be taken. In addition, all participants should:

- know the toxicity of the materials (e.g. by reviewing the MSDS for the material)
- follow the recommended precautions
- use the appropriate safety and personal protective equipment to minimize all routes of potential exposure (e.g., inhalation, dermal contact, and ingestion)
- identify and label all materials and work areas where hazardous materials are used
- clean up immediately, appropriately decontaminating for the materials being used
- be aware of necessary safety precautions and specific actions to be taken in the event of an emergency

Written Protocols and Notifications

Prior to purchasing or using any amount of an acute toxin (Section 5.6) or perchloric acid (Section 5.2.3), a written protocol is required. The Safety Committee may also request protocols for the use of other hazardous materials. Written protocols must be submitted to the Chair of the Safety Committee at least three weeks prior to the anticipated purchase date (or use date for materials already at CSC) for approval by the Safety Committee, and include the following information.

- faculty name
- chemical name, CAS number, and hazard information
- anticipated date of purchase and use
- location of storage and use
- quantity to be stored and used in each experiment
- names of all users and description of user training
- experimental procedure
- emergency procedures (include fire, spill, and personal contamination)
- waste disposal procedures
- protective equipment to be used

The protocol must be reviewed with each user and a record of training submitted to the Lab Manager. The experiment can not be conducted until approval is obtained from the Safety Committee.

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Prior to purchasing or using any amount of a select carcinogen (Section 5.8) or reproductive toxin (Section 5.7), a written notification is required, including the following information:

- faculty name
- chemical name, CAS number, and hazard information
- anticipated date of purchase and use
- location of storage and use

Each user must be informed of the hazard(s) of the chemicals and proper experimental and emergency procedures. Notification should be submitted to the Laboratory Manager at least one week prior to anticipated use. The Laboratory Manager may approve, request additional information, or refer to the Safety Committee needs for review. The Safety Committee may request a written protocol for use of the chemical. The experiment may proceed unless additional information is requested by the Lab Manager, or a protocol is requested by the Safety Committee.

5.1 FLAMMABLE CHEMICALS

In order for a flammable chemical fire to occur, three conditions must be met:

- a flammable gas or vapor must be at a concentration between the lower and upper flammable limits
- an oxidizing agent (e.g., the air in the room or a chemical oxidizer) must be available
- there must be a source of ignition or the material is at its auto-ignition temperature

5.1.1 Definitions

Safe use and storage of flammable chemicals, and the evaluation of fire hazard, requires understanding the following important definitions. Information on the physical characteristics of flammable chemicals is listed on manufacturer's container labels and on the Material Safety Data Sheet.

1. **Auto-ignition Temperature** - the minimum temperature that will initiate a self-sustained combustion of liquid, gas or solid in the absence of a spark or flame; the lower the auto-ignition temperature the greater the fire hazard.
2. **Boiling point** - the temperature at which the vapor of the liquid is in equilibrium with atmospheric pressure; the lower the boiling point the greater the fire hazard.
3. **Flammable or Explosion limits** - the minimum (lower) or maximum (upper) concentration of a gas or vapor in air, by volume percent, in which a fire or explosion can occur upon ignition in a confined area; the wider the range of the explosion limits and the lower the lower limit, the greater the fire/explosion hazard.
4. **Flammable Gas** - gases which form a flammable mixture in air at less than or equal to 13% by volume; or the flammable range (explosive range) in air is wider than 12 percent regardless of the lower limit (U.S. Department of Transportation definition).

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5. **Flammable or Combustible liquids** - are divided into several classes based on the degree of fire hazard as described in Table 5-1.

CLASS	BOILING POINT °C(°F)	FLASH POINT °C(°F)	EXAMPLES
1A Flammable Liquid	<37.8 (100)	<22.8 (73)	ethyl ether, pentane
1B Flammable Liquid	≥37.8 (100)	<22.8 (73)	acetone, ethyl alcohol
1C Flammable Liquid	-	≥ 22.8 (73) and <37.8 (100)	butanol, isoamyl acetate
2 Combustible Liquid	-	≥37.8 (100) and <60.0 (140)	formalin, cyclohexanone
3A Combustible Liquid	-	≥60.0 (140) and <93.3 (200)	phenol, dichlorobenzene
3B Combustible Liquid	-	≥93.3 (200)	ethylene glycol, mineral oil

Source: National Fire Protection Association, 2003. *Flammable and Combustible Liquids Code, NFPA 30.*

6. **Flammable Solid** - a nonexplosive material that is capable of producing fire as a result of: friction; water exposure; air exposure; heat retained from synthesis or processing; or, when ignited, burns so vigorously and persistently so as to create a hazard.
7. **Flash point** - the minimum temperature at which a liquid gives off vapor in sufficient concentration to form an ignitable mixture with air near the surface of the liquid - also applies to certain solids that evaporate or volatilize; the lower the flashpoint the greater the fire hazard.
8. **Vapor Density** - the weight of a volume of pure vapor or gas compared to the weight of an equal volume of dry air at the same temperature and pressure; vapor densities greater than one indicate the vapor or gas is heavier than air.

5.1.2 Storage and Dispensing

The quantity of flammable chemicals, liquids, solids and gases stored in laboratories should be kept at an absolute minimum. Flammable chemicals should only be ordered in quantities that can be used in the course of a semester.

For those flammables that must be stored in the laboratory, the preferred storage methods are in flammable storage cabinets meeting NFPA standards for liquids or solvents or in UL or FM approved flammable safety cans. Total volume stored in a flammable storage cabinet should not exceed the rated capacity of the cabinet. Flammable chemicals should not be stored outside of the flammable cabinets without the express permission of the Lab Manager.

If refrigeration is required, the refrigerator or freezer must meet NFPA Standards for flammable storage. Flammable materials refrigerators and freezers have spark-free interiors. All units designed for flammable storage are clearly marked as "approved for flammable

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storage". All units not approved are clearly marked "not for flammable storage" or other similar wording.

5.1.3 Laboratory Use

All laboratory procedures using flammable chemicals should:

- minimize the release of flammable vapors
- prevent the travel or accumulation of vapors
- **eliminate sources of ignition**
- minimize the amount of flammable chemical or other combustible materials (e.g., paper) in the vicinity of the handling area

The following precautions should always be followed when working with flammable chemicals. *These precautions do not apply to the use of natural gas as a fuel for combustion.* Additional precautions may be necessary in certain situations.

- Use fume hoods whenever possible, particularly when transferring or heating flammable liquids.
- Always use flammable gases in a fume hood.
- Never use open flames in the same area where flammables are being used, unless it is part of an experimental procedure, approved by the faculty member.
- Control other sources of ignition and heat in the laboratory such as electric motors and ovens in areas where flammable vapors are expected to exceed 10% of the lower flammability limit (refer to MSDS or other current references).
- Use only electrical equipment (e.g., heating and stir plates) that is labeled as explosion proof (a.k.a. intrinsically safe).
- When transferring flammable liquids from a metal container, ground the metal container.
- Minimize the generation of dust when handling flammable solids.
- Make sure you have the proper extinguishing media in the vicinity of the operation (e.g., Class D powder for combustible metals).
- Never leave solvent distillation processes unattended.

The Lab Manager and Safety Committee will assist in evaluating the hazards of particular operations or experiments upon request.

5.2 CORROSIVE CHEMICALS

Corrosives are one of the most commonly encountered hazards in the laboratory. The major classes of corrosive chemicals are:

- strong acids and bases
- dehydrating agents
- oxidizing agents

Some chemicals, such as sulfuric acid, belong to more than one class. Corrosives are chemicals that can cause visible destruction of or irreversible alteration in living tissue, as well as destruction of other materials. In addition, many corrosives have other hazards such as reactivity (e.g., perchloric acid), flammability (e.g., organic acids), and toxicity (e.g., phenol).

The *strength* of acids and bases is defined as the degree of ionization of the acid or base in water. Inorganic, or mineral, acids (e.g., hydrochloric acid - a strong acid) generally ionize more than organic acids (e.g., acetic acid - a weak acid). Similarly, sodium hydroxide is highly ionized and classified as a strong base, whereas ammonium hydroxide is slightly ionized and characterized as a weak base.

The *concentration* of the acid or base, which is unrelated to its strength, refers to the percentage of the chemical dissolved in water. The *corrosivity* of acids and bases is dependent on their strength and concentration.

Dehydrating agents, such as sulfuric acid, sodium hydroxide, calcium oxide, and glacial acetic acid are corrosive because of their strong affinity for water. This reaction with water is extremely exothermic. Because of this exothermic reaction with water, **concentrated acids should always be added slowly to water**. If water is added to the concentrated acid, the rapid generation of heat can cause the water to vaporize, causing the hot concentrated acid solution to splash.

5.2.1 Hazards of Selected Corrosives

Corrosives, in their solid, liquid and vapor state, can cause acute and chronic damage to human tissue. *Acute hazards* can be manifested as burns, ulceration, permanent tissue damage, or toxic effects. Acid burns are generally perceived as more painful than base burns, which is due to the formation of a protective protein layer that resists further penetration of the acid. In fact, tissue damage from bases is often more serious, as no protective layer is formed and the injury penetrates deeper. Many corrosives also have *chronic hazards*, repeated exposure to even dilute solutions or vapors can cause dermatitis, bronchitis, or eye damage. The destructive effect of corrosives is greatly increased when they are used at elevated temperatures.

Some corrosives also pose physical hazards. For example, when in contact with metal many inorganic acids release hydrogen gas (flammable) posing a serious fire and explosion hazard.

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The following are examples of some of the hazards of commonly used corrosives. The list is by no means exhaustive. The hazards of each corrosive should be thoroughly investigated prior to use.

- Sulfuric Acid is a strong acid, a dehydrating agent, and an oxidizing agent. As a dehydrating agent, it is highly water-reactive, generating tremendous amounts of heat on contact with water. It is very destructive to tissue and metals, and releases hydrogen gas (flammable) on contact with active metals (e.g., Na, Mg, Ca, Rb, K, Al, Mn, Zn, Fe, Ni). Fuming sulfuric acid is even more hazardous and produces extremely hazardous vapors.
- Nitric Acid is a strong acid and powerful oxidizing agent. Nitric acid is extremely corrosive and can release toxic vapors (hydrogen and nitrogen oxides) on contact with most metals. Nitrogen oxides can cause delayed respiratory distress, pulmonary edema (fluid in the lungs) and death. Fuming nitric acid is more dangerous than regular nitric acid, again due to the presence of nitrogen oxides. Fuming nitric acid is listed as an acute toxin in Section 5.6.
- The Halogen Acids include hydrofluoric (HF), hydrochloric (HCl), hydrobromic (HBr), and hydriotic acid (HI). The corresponding acid gases -- hydrogen fluoride, hydrogen chloride, hydrogen bromide, and hydrogen iodide -- are very soluble in water; upon exposure to moisture on the body, formation of the acid occurs. All are strong acids and release hydrogen on contact with active metals.
- Hydrofluoric Acid is extremely corrosive and attacks glass as well as metal. It is extremely dangerous in all concentrations. It causes severe slow-healing burns to tissue that may not be noticed for several hours. It can also cause severe and permanent damage to the respiratory system, including fatal pulmonary edema, and blindness. In addition to these corrosive effects, it can cause delayed systemic poisoning including depletion of tissue calcium and magnesium. It is listed as an Acute Toxin in Section 5.6 and special handling instructions are included in Section 5.2.4.
- Perchloric Acid is a strong acid and at temperatures above 160°C a strong oxidizing and dehydrating agent. It may decompose explosively when heated; and if distilled, dried, or reacted with dehydrating agents or any oxidizable materials, the mixture may spontaneously explode. It forms flammable hydrogen gas on contact with many metals; and forms explosive metal perchlorates on contact with certain metals. Perchloric acid is especially hazardous at concentrations above 70%. Special handling instructions, including required Safety Committee protocol approval, are listed later in Section 5.2.3.
- Acetic Acid is a severe irritant to the skin and eyes. Severe irritation can occur at 25 ppm, but eye damage can occur at lower concentrations. Glacial (100%) acetic acid causes severe eye and tissue damage, is a dehydrating agent, reacts violently with oxidizing agents, and has a flash point of 110°F.

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- Phenol is a crystalline solid that adsorbs moisture from the air. In addition to being corrosive, it is highly toxic and readily absorbed through the skin as a liquid or vapor.
- Sodium and potassium hydroxides are strong corrosives and often referred to as caustics, a term referring to hydroxides. They are both solids which readily absorb water; and can absorb enough water from the skin to cause severe injury if not washed off immediately. They are both dehydrating agents. They cause severe and permanent eye damage. At low concentrations, the sensation of irritation may not occur for several hours, and can result in severe ulceration. They are even more hazardous in heated solutions.

5.2.2 Laboratory Use of Corrosives

1. Always investigate the additional hazards such as flammability and reactivity before using.
2. Purchase only the amount needed, small quantities are recommended for easier handling and storage.
3. Bottle carriers or some other means of containment should be used when moving chemicals between floors.
4. Store separately from incompatible materials.
5. Wear appropriate protective equipment, as described in Section 4.5.
6. Always add chemicals slowly and always add concentrated acid to water.
7. Keep ignition sources away from inorganic acid spills (that may produce flammable hydrogen gas on contact with metals), and from glacial acetic acid, which as an organic acid is a combustible material.
8. When neutralizing corrosives, never add a concentrated acid to base or a concentrated base to acid.

5.2.3 Special Precautions for Perchloric Acid

1. Use of perchloric acid requires a written protocol approved by the CSC Safety Committee.
2. The number of people using the acid should be limited to the extent possible, and all users should be familiar with the chemistry of the acid, its hazards, proper handling procedures, and emergency procedures.
3. Heating of perchloric acid is prohibited.
4. Perchloric acid should never be used in areas where the material would be absorbed if spilled.
5. Perchloric acid should be purchased on an as-needed basis in small containers and must be stored separately from incompatible materials.
6. Prior to performing experiments using perchloric acid, disposal procedures should be defined.
7. Spilled solutions must not be allowed to dry. They should be neutralized and then soaked up with rags or paper towels. The area should then be rinsed with a large quantity of water. The wet rags or paper towels should be placed in a container, and the container filled with water and tightly closed. The container should be disposed of as hazardous waste.

8. Refer to Furr A.K. (ed.), 2000 CRC Handbook of Laboratory Safety, 5th Edition, and Schilt, A.A., 1979. Perchloric Acid and Perchlorates, for additional precautions.

5.2.4 Special Precautions for Hydrofluoric Acid

1. Hydrofluoric is an acute toxin. A written protocol approved by the Safety Committee is required.
2. The number of people using the acid should be limited to the extent possible, and all users should be familiar with the chemistry of the acid, its hazards, proper handling procedures and emergency procedures.
3. When possible, the acid should be purchased at the concentration to be used to avoid preparation of solutions.
4. Hydrofluoric acid should be purchased on an as-needed basis in small containers.
5. Always use in a functioning fume hood with the sash as low as possible and no higher than 15 inches.
6. Keep ignition sources away from the area.
7. Wear chemical splash goggles, a face shield providing face and neck protection, neoprene or polyvinyl chloride gloves, non-absorbent resistant clothing, and a rubber or neoprene apron.
8. Dispose of protective clothing if contaminated per directions from Lab Manager.
9. Wash hands thoroughly after each use.
10. Use only resistant equipment (e.g., polyethylene, teflon).
11. Emergency procedures in Appendix 5-A must be posted in all use areas. Calcium gluconate must be available in all use areas.
12. Prior to performing experiments using hydrofluoric acid, disposal procedures should be defined.
13. Spills should be neutralized with lime acid neutralizer or an appropriate equivalent, and the resulting solution collected for disposal as hazardous waste.

5.3 REACTIVE CHEMICALS

Reactive chemicals are chemicals that can, under certain conditions, release very large and potentially dangerous amounts of energy. This Section deals with the physical hazards of reactive chemicals. Reactive chemicals may also have health hazards that must also be considered. Reactive chemicals can lead to reactions that differ from the routine mainly in the rate at which they progress. A chemical reaction can be considered routine if the reaction rate is relatively slow or can be easily controlled. It is the rate of reaction and ability to control it that marks certain chemicals as warranting special precautions and the label "reactive chemical".

There are a variety of conditions under which certain chemicals undergo an uncontrollable hazardous reaction. Some chemicals are unstable and can vigorously polymerize, decompose, condense, or become self-reactive. Other chemicals can react violently when exposed to common environmental chemicals or conditions, such as water or air. Many chemicals are stable except when combined with certain other chemicals. These hazardous combinations are listed in the table "Classes of Incompatible Chemicals" in Section 6.3.1.

There are some additional hazardous conditions that are not usually attributed to "reactive chemicals" but should be mentioned. Extreme differences in physical properties can cause an uncontrollable release of energy. For example, bringing a hot liquid such as oil into contact with a liquid with a lower boiling point such as water will cause instantaneous vaporization of the lower boiling point liquid and a violent release of energy.

The following discussion highlights the most common groups of reactives and includes examples of chemicals in each group.

5.3.1 Examples of Reactive Chemicals

The following list of examples is compiled from several general references.¹ Manufacturer's Material Safety Data Sheets or the references cited should be consulted to determine the specific reactive characteristics of a particular chemical.

1. OXIDIZERS

Oxidizers are chemicals that can readily provide reactive oxygen readily under certain conditions. When in contact with organic materials, (e.g., wood, paper, organic chemicals), or other easily oxidizable chemicals, (e.g., metal powders), oxidizers can form unstable and explosive compounds sensitive to shock. Examples of oxidizers include:

- bromine and compounds
- chlorine and compounds
- chromium and dichromates
- chromium trioxide
- chromic acid
- fluorine
- iodine and compounds
- manganese dioxide
- nitrates
- nitric acid
- nitrites
- nitrogen trioxide
- permanganates
- peroxides
- persulfates
- phosphomolybdic acid
- picrates
- sodium bismuthate
- sulfuric acid

2. WATER EXPOSURE SENSITIVE

Water reactive chemicals can develop pressure, generate flammable, explosive, corrosive or toxic gases, or ignite or explode when exposed to water or moisture. Examples of water exposure sensitive chemicals include:

- alkali and alkaline-earth metals (sodium, lithium, calcium, potassium, magnesium)
- aluminum chloride
- anhydrous metal halides (aluminum tribromide, germanium tetrachloride)
- anhydrous metal oxides (calcium oxide)
- benzoyl chloride
- calcium carbide
- calcium oxide
- nonmetal halides (boron tribromide, phosphorous pentachloride)
- nonmetal halide oxides (inorganic acid halides, phosphoryl chloride, sulfuryl chloride, chlorosulfonic acid)
- nonmetal oxides (acid anhydrides, trioxides)

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3. AIR EXPOSURE SENSITIVE

Air exposure sensitive chemicals can develop pressure, generate flammable or explosive gases, ignite or explode when exposed to air. Examples of air exposure sensitive chemicals include:

- alkyl metal derivatives (ethoxydiethylaluminum and dimethylbismuth chloride)
- analogous derivatives of nonmetals including diborane, dimethylphosphine, triethylarsine,
- dichloro(methyl)silane
- carbonyl metals (pentacarbonyliron and octacarbonyldicobalt)
- finely divided metals (calcium, titanium)
- metal hydrides (potassium hydride and germane)
- partially or fully alkylated metal hydrides (diethylaluminum hydride, triethylbismuth)
- sodium methoxide
- sec-butyl lithium
- triethylaluminum
- white phosphorus

4. TEMPERATURE SENSITIVE

Temperature sensitive chemicals may decompose when held above their maximum safe storage temperature resulting in pressure buildup, flammable or explosive gas generation, ignition, or explosion. Examples of temperature sensitive chemicals include:

- Certain oxidizers (perchlorates, chlorates, nitrates, bromates, chlorites, iodates)
- Certain Azo compounds
- Lithium nitrate
- Organic peroxides
- Phenylhydrazine hydrochloride

5. SPONTANEOUS DECOMPOSITION

Spontaneous Decomposition - chemicals which change structure over time and with no apparent stimulation can develop pressure, generate flammable or explosive gases, ignite or explode. Examples of chemicals which spontaneously decompose include:

- benzoyl peroxide (dry)
- nitroglycerine
- contaminated concentrated hydrogen peroxide

6. SHOCK, FRICTION AND STATIC DISCHARGE SENSITIVE

Shock, friction, and static discharge sensitive chemicals can violently decompose when initiated by shock, friction, or static discharge. Examples of these chemicals include:

- | | |
|--------------------------|-----------------------------------|
| • acetylides | • nitro compounds |
| • azides | • nitroso compounds |
| • contaminated oxidizers | • organic nitrates |
| • diazo compounds | • organic and inorganic peroxides |
| • explosives | • ozonide |
| • fulminates | • picric acid (trinitrophenol) |
| • halamine | |

7. PEROXIDES

Many common laboratory compounds can form peroxides when exposed to air over a period of time. A single opening of a container to remove some of the contents can introduce enough air for peroxide formation to occur. Peroxides are sensitive to heat, friction, impact, and light, and are among the most hazardous chemicals that are routinely encountered in laboratories. Their hazard potential is even greater because they may not be suspected or detected in commonly used solvents or reagents. Many explosions have occurred during distillation of peroxide-containing substances particularly when the distillation has been taken to or near to dryness.

Crystal formation or cloudy appearance inside a container is a possible sign of peroxide formation. Crystal formation is most likely (and most hazardous) around the cap. Friction caused just by turning the cap can cause an explosion that ignites flammable solvent in the container.

Peroxide formation can also occur in many polymerizable, unsaturated compounds. These peroxides can initiate a runaway, and sometimes explosive, polymerization reaction.

Structural groups of chemicals that can form peroxides, listed in approximate order of decreasing hazard, include:

Organic Structures:

- ethers and acetals with alpha hydrogen atoms
- olefins with allylic hydrogen atoms
- chloroolefins and fluoroolefins
- vinyl halides, esters, and ethers
- dienes
- vinylacetylenes with alpha hydrogen atoms
- alkylacetylenes with alpha hydrogen atoms
- alkylarenes that contain tertiary hydrogen atoms
- alkanes and cycloalkanes that contain tertiary hydrogen atoms
- acrylates and methacrylates
- secondary alcohols
- ketones that contain alpha hydrogen atoms
- aldehydes
- ureas, amides, and lactams that have a hydrogen atom on a carbon atom attached to nitrogen

Inorganic Substances:

- alkali metals, especially potassium, rubidium, and cesium
- metal amides
- organometallic compounds with a metal atom bonded to carbon
- metal alkoxides

5.3.2 General Safety Procedures for Working with Reactive Chemicals

1. Find out as much as possible about the reagents and procedures before the experiment.
2. Investigate the purity of the reactive chemical. Determine whether impurities or spontaneous decomposition products (such as peroxides) will make the experiment more hazardous.

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3. Conduct small-scale preliminary experiments to assess the thermodynamic and physical properties of the reaction.
4. Use as little of the reactive chemical or as dilute a solution as possible.
5. Consider all methods of controlling reaction variables. The rate of addition can be controlled as well as the rate at which the energy of activation is supplied. Cool exothermic reactions adequately to control the reaction rate. Remember to provide cooling arrangements for both liquid and vapor stages if appropriate. Pressure relief valves should be included in pressurized systems and checked before adding chemicals to the system.
6. Determine the proper degree of agitation and mixing rate. Add oxidants slowly with appropriate cooling or mixing.
7. Use a face shield in addition to goggles when appropriate.
8. Work in a fume hood using the sash as a protective shield.
9. Have emergency equipment in the immediate area.
10. Notify people in the laboratory of any new or unique hazards that could potentially be created by use of a reactive chemical.

5.3.3 Special Procedures for Peroxide Forming Chemicals

It is important that information on the age of peroxide forming chemicals be maintained and that these chemicals are tested or disposed of on a regular basis.

5.3.3.1 Labeling Peroxide Formers

All peroxidizable compounds should be labeled with preprinted labels that read:

PEROXIDIZABLE COMPOUND
May Become Explosive With Time or Exposure to Air or Light
Date Opened: Discard Date:

The date and discard period should be filled-in the first time the container is opened, along with test dates and associated results.

5.3.3.2 Testing Peroxide Formers

The level of peroxides can be tested using peroxide test strips. Peroxidizable compounds must be tested for safety every 6 months and the bottled dated with the most recent test date. Do not use these materials if more than six months have passed since the most recent date indicated on the bottle. The Lab Manager should be made aware of any peroxide forming substances in Cole Science Center.

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Table 5-2 lists recommendations for testing or disposal of potential peroxide forming chemicals.

Table 5-2: POTENTIAL PEROXIDE FORMING CHEMICALS	
A: Chemicals posing severe peroxide hazard on storage after exposure to air. DISCARD WITHIN 3 MONTHS	
Diisopropyl ether (isopropyl ether) [108-203]	potassium amide
divinylacetylene (DVA)*	sodium amide (sodamide) [7782-92-5]
potassium metal [7440-09-7]	vinylidene chloride (1,1-dichloroethylene)* [75-35-4]
B: Chemicals posing peroxide hazard on concentration; do not distill or evaporate without first testing for the presence of peroxides. DISCARD OR TEST FOR PEROXIDES AFTER 6 MONTHS	
acetaldehyde diethyl acetal (acetal) [75-07-0]	ethylene glycol dimethyl ether (glyme) [110-71-4]
cumene (isopropylbenzene) [98-82-8]	ethylene glycol ether acetates
cyclohexene [110-83-8]	ethylene glycol monoether (cellosolves)
cyclopentene [142-29-0]	furan [110-00-9]
decalin (decahydronaphthalene) [91-17-8]	methylacetylene [74-99-7]
diacetylene [106-99-0]	methylcyclopentane [96-37-7]
dicyclopentadiene [77-73-6]	methyl isobutyl ketone [108-10-1]
diethyl ether (ether, ethyl ether) [60-29-7]	tetrahydrofuran (THF) [109-99-9]
diethylene glycol dimethyl ether (diglyme) [11-96-6]	tetralin (tetrahydronaphthalene) [119-64-2]
dioxane [123-91-1]	vinyl ethers
C: Chemicals posing a hazard of rapid polymerization initiated by internally formed peroxides.	
Normal Liquids - DISCARD OR TEST FOR PEROXIDES AFTER 6 MONTHS**	
chloroprene (2-chloro-1,3-butadiene)+ [126-99-8]	vinyl acetate [108-05-4]
styrene [100-42-5]	vinylpyridine
Normal Gases - DISCARD AFTER 12 MONTHS.	
butadiene+ [106-14-3]	vinylacetylene (MVA)+
tetrafluoroethylene (TFE) [116-14-3]	vinyl chloride [75-10-4]
*Polymerizable monomers should be stored with a polymerization inhibitor from which the monomer can be separated by distillation just before use.	
**Although common acrylic monomers such as acrylonitrile, acrylic acid, ethyl acrylate, and methyl methacrylate can form peroxides, they have not been reported to develop hazardous levels in normal use and storage.	
+The hazard from peroxides in these compounds is substantially greater when they are stored in the liquid phase, and if stored without an inhibitor they should be considered as in group A.	

5.4 COMPRESSED GASES

Compressed gas cylinders are defined by the U. S. Department of Transportation (DOT) as any materials or mixtures in containers having an absolute pressure in excess of 40 psi at 20°C (70°F) or in excess of 104 psi at 54.5°C (130°F).

Compressed gas cylinders should be considered high-energy sources regardless of the type of gas and all should be treated as potential explosives. Compressed gases have many properties that make them a unique hazard such as their pressure, diffusivity, low flash points for flammable gases, low boiling points, and, for some, no visual and/or odor warnings.

5.4.1 Cylinder Purchase, Labeling and Storage

Purchase

Gas cylinders and lecture bottles should be ordered through the Lab Manager. Lecture bottles (small cylinders of compressed gases or liquids) are leased in returnable cylinders whenever possible.

Labeling

Gas cylinders as received from the manufacturer are labeled with the product name, Department of Transportation hazard class, date of the last hydrostatic test, and identity of the manufacturer. If cylinders do not contain this information they should not be accepted. Cylinders should be inspected periodically to ensure that the product name is still legible.

Storage Area

1. Cylinders must be stored in designated storage areas away from ignition sources, corrosives, electrical supply sources and heat.
2. Store oxidizers away from flammable gases. Oxygen and fuel gases must be separated by a distance of at least 25 feet or by a firewall meeting the standards established by the Compressed Gas Association's CGA P-1. As an alternative, oxygen can be moved directly to the area of use.
3. The valve protection cap must be kept on at all times, except when a cylinder is in use.
4. Cylinders must be chained or strapped, or otherwise mounted, securely in place to prevent them from falling over. Cylinders must be individually mounted or strapped.
5. Corrosive gases should be stored for the shortest possible time period: under three months is preferable.
6. Cylinders may not be stored in areas not protected from the weather.

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7. Cylinders must be clearly labeled with the contents, by the vendor's identification label. If labels are coming off, notify the Lab Manager immediately. Unlabeled cylinders cannot be returned to the vendor.

5.4.2 Moving Cylinders

1. Faculty or staff will move all large cylinders from the storage area to the laboratory.
2. Always consider cylinders full and handle them accordingly; the same hazards exist even if the cylinder is only partially full.
3. Use a hand truck to transport cylinders that cannot be easily carried. Do not drag, roll, or slide cylinders. Cylinders must be secured to the hand truck.
4. The valve protection cap should remain on until the cylinder has been secured in its final position and is ready for use.
5. Never drop a cylinder or permit cylinders to strike each other.
6. Protect cylinders from any object that will produce a cut or abrasion in the surface of the metal.
7. Mount cylinders so that the valve is easily accessible and the label is readable.
8. Always chain or strap cylinders immediately. Do not leave a cylinder in a laboratory if equipment is not available to secure it. Cylinders in the laboratory must be secured individually.

5.4.3 Laboratory Use

1. Handling and use of gas cylinders and lecture bottles (e.g., attaching regulators) must comply with manufacturers' recommendations.
2. Do not use flammable gases near exit paths.
3. Wear safety glasses or goggles when installing or removing regulators on gas cylinders.
4. Attach the proper regulator designed for the particular gas that is being used. Cylinder valves have been standardized for specific families of gases to prevent the interchange of regulator equipment between gases that are not compatible. Never modify, tamper with or force a cylinder valve or regulator. Be sure that all components of a distribution system are compatible with the gas in use. Corrosive gases require special attention to the resistance of materials in the distribution system.
5. After connecting the regulator, secure all hose connections with clamps, secure any loose hoses to prevent sudden movement when pressure is supplied, and, when

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- appropriate, place a trap between the regulator and the reaction vessel to prevent backflow.
6. Verify that the regulator is securely in place after installation or changing it by checking for leaks.
 7. Start the gas flow with the following procedure.
 - a. Do not stand in front of the delivery valve.
 - b. With the regulator secured to the cylinder valve outlet, turn the delivery pressure adjusting the screw until it turns freely.
 - c. Next slowly open the cylinder valve until the cylinder pressure gauge on the regulator reads the cylinder pressure. The cylinder valve should be opened by hand; never use a wrench or other tool unless the vendor supplies a special tool for that purpose.
 - d. With the cylinder valve open and the flow control valve (the outlet from the regulator) in closed position, set the desired delivery pressure by turning the delivery-pressure adjusting screw (clockwise increases) until the desired pressure is reached.
 - e. Begin gas flow by opening the flow control valve at the outlet of the regulator.
 8. All gas lines leading from a compressed gas supply should be clearly labeled. Signs should be conspicuously posted in areas in which flammable compressed gases are present.
 9. Never mix gases in a cylinder; unless the cylinder is designed for that purpose and labeled appropriately.
 10. Never completely empty a cylinder. Leave a slight pressure (about 25 pounds) to keep out contaminants that may react with the contents or corrode the cylinder.

Empty cylinders should have the regulator removed and the protector cap in place, the cylinder should be labeled EMPTY or "MT", and the Lab Manager notified.

5.4.4 Special Precautions

Acetylene

1. Gaseous acetylene under pressure may also decompose with explosive force and should not be used at pressures in excess of 15 psig (30 psi absolute pressure). Acetylene pressure gauges should have a warning red line at this point.

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2. Acetylene in cylinders is dissolved in a liquid (e.g., acetone) and should always be used in an upright position. Do not use a cylinder that has been stored or handled in a non-upright position until it has remained in an upright position for at least 30 minutes.
3. The outlet line of an acetylene cylinder must have a flash arrester.
4. Use the correct kind of tubing to transport the gaseous acetylene. Some tubing materials, such as copper, form explosive acetylides.

Oxidizers

Oxidizers under pressure (oxygen, chlorine, etc.) will rapidly oxidize organic material, such as oil or grease, resulting in an explosion. Never use oil or grease on valves or gauges intended for cylinders containing oxidizers.

5.5 CRYOGENIC SYSTEMS

Cryogenics is the science of very low temperatures. An accepted temperature used to distinguish between refrigeration and cryogenics is -73.3°C (-100°F). Low temperatures in the cryogenic range are generally obtained by the liquidification or solidification of gases. The most commonly used cryogens and their properties are listed in Table 5-3.

The primary hazard of cryogenic materials is their extreme coldness that can result in frostbite and severe tissue damage. Accumulated vapors may also act as asphyxiants. Liquefied inert gases, such as nitrogen, in contact with cold metal surfaces can cause condensation of oxygen from the room air resulting in an oxygen-enriched atmosphere and, consequently, an increased fire hazard. The low temperatures involved also affect the properties of other materials, for example, rubber may become brittle and disintegrate, some metal alloys may become brittle, and plastic and glass can shatter.

Table 5-3
PROPERTIES OF CRYOGENS

<u>Gas</u>	<u>Normal Boiling Point (°C)</u>	<u>Volume Expansion to Gas</u>	<u>Flammable</u>	<u>Toxic</u>	<u>Odor</u>
carbon dioxide	-78.5	553:1	No	Yes	Slightly Pungent
hydrogen	-252.7	861:1	Yes	No	No
nitrogen	-195.8	696:1	No	No	No
helium-3 isotope	-269.9	757:1	No	No	No
argon	-185.7	847:1	No	No	No
fluorine	-187.0	888:1	No	Yes	Sharp
oxygen	-183.0	860:1	No	No	No
methane	-161.4	578:1	Yes	No	No

Source: Furr, K.A. (ed.), 2000. *CRC Handbook of Laboratory Safety, 5th Edition.*

Cryogenics have very high liquid:vapor expansion ratios. For example, liquid nitrogen expands to approximately 700 times its initial volume when it vaporizes (e.g., 22 cf expands to 15,400 cf). This rapid expansion can cause a displacement of oxygen and, consequently, a life threatening asphyxiant atmosphere.

5.5.1 Storage and Handling Precautions for Cryogenics

These are general precautions, the faculty or supervising staff member responsible for the cryogenic operation should establish more specific safety guidelines.

1. Store and use only in containers and equipment recommended for cryogenic service.
2. Avoid confined areas where vaporization occurs, (e.g., do not put your head down into the dry ice freezer).
3. Ensure that all apparatus is properly vented to prevent accumulation of pressure and be cognizant of ice blocks that could block vent lines.
4. Wear chemical splash goggles when there is a risk of pressure buildup or splash or particle hazard. Wear a face shield in cases where there is a high likelihood of contact.
5. Always wear long sleeves and/or a lab coat.
6. Watches, rings or other jewelry that could trap the material next to the skin should not be worn.

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7. If gloves are necessary to handle containers or cold metal parts, they should be impervious and loose enough to be thrown off in the case of contamination.
8. Neither liquid nitrogen, liquid air, nor any other cryogen with a normal boiling point < 188 °C should be used to cool a flammable mixture in the presence of air, as oxygen can condense from the air leading to an explosive mixture.
9. Equipment must be kept clean to avoid contamination of organics with a cryogenic oxidant (e.g., liquid oxygen) or oxidants with a cryogenic fuel (e.g., liquefied natural gas).
10. When flammable gases are being used, eliminate potential ignition sources.
11. Flammable and toxic gases should only be used in a fume hood.
12. If liquid nitrogen has a blue tint, it has been contaminated with oxygen and should be replaced. The contaminated material is dangerous and potentially explosive.
13. When spilled, liquid oxygen soaks into materials it comes into contact with, and the resulting mixture may be explosive.

5.6 ACUTE TOXINS

As defined by the Laboratory Standard, acute toxins, one of OSHA's three categories of Particularly Hazardous Substances¹, are chemicals which may be fatal as a result of a single exposure or exposure of short duration. The OSHA Hazard Communication Standard² defines a similar category, highly toxic chemicals, based on animal (rat) toxicity data using the following criteria.

LD₅₀ - ingestion: ≤ 50 mg/kg
LD₅₀ - contact (24hrs): ≤ 200 mg/kg
LD₅₀ - inhalation: ≤ 200ppm/hr

LD₅₀, also known as LC₅₀, is defined as the amount of chemical which when ingested, inhaled or applied to the skin of a group of test animals under controlled conditions will kill 50% of the test animals.

However, a review of Material Safety Data Sheets reveals that these toxicity data are not readily available for many laboratory chemicals. As there is no definitive list of acute toxins, they will be defined here as a chemical which meets one or more of the following three criteria.

¹ The OSHA Laboratory Standard, 29 CFR 1910.1450, defines three categories of Particularly Hazardous Substances: Acute Toxins, Select Carcinogens, and Reproductive Toxins.

² OSHA Hazard Communication Standard, 29 CFR 1910.1200.

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1. Animal toxicity data is available and meets the LD₅₀ criteria listed above.
2. The container label or Material Safety Data Sheet identifies the substance as "acutely toxic", "highly toxic", "may be fatal if inhaled", "may be fatal if enters the bloodstream", or similar warning of acute toxicity.
3. It is on the following list of **examples** (Table 5-4) which was compiled from several sources as referenced and includes all Department of Transportation Poison A chemicals, and chemicals with a National Fire Protection Association "Health" rating of 4 for highly toxic. (See Appendix 4-B for a description of NFPA ratings.)
4. The faculty member has knowledge that the chemical is an acute toxin.

5.6.1 Written Protocols

Each faculty member using or supervising the use of an acute toxin must develop a written protocol for that chemical. The protocol must include a description of the quantity to be used, experimental procedure, the location of the experiment, who will be handling the acute toxin, protective equipment to be worn, emergency procedures, and waste disposal procedures. The protocol must be submitted to the Chair of the Safety Committee, at least 3 weeks prior to the anticipated purchase date (or use date for materials already in CSC), for approval by the Safety Committee. If an acute toxin is to be stored after completion of its approved usage, it should be given to the Lab Manager for proper storage.

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Table: 5-4 EXAMPLES OF ACUTE TOXINS⁽¹⁾

<u>Chemical</u>	<u>Target Organ</u>	<u>Chemical</u>	<u>Target Organ</u>
abamectrin *	systemic	methylaziridine, 2- *	systemic
acrolein *	systemic,pulmonary	methylchloroarsine	systemic
acrylonitrile *	systemic	methylfluorosulfonate	systemic
adiponitrile	systemic,blood	methyl hydrazine *	pulmonary,CNS,blood
aminopyridine, 4- *	systemic	methyl isocyanate *	systemic
ammonia (gas)	pulmonary	methyl mercury cmpds *	CNS
aniline and cmpds *	blood	mitomycin C	systemic
arsenic acid and salts *	systemic	mustard gas *	pulmonary
arsenic pentafluoride	systemic	nickel carbonyl	pulmonary,CNS
arsenic pentoxide	systemic	nicotine *	CNS
arsenic trichloride	systemic	nitric acid, fuming *	pulmonary,skin
arsenic trioxide	systemic	nitric oxide	systemic
arsenious acid and salts	systemic	nitrogen dioxide	systemic
arsine	systemic	nitrogen mustard *	systemic
arsonic acid and salts	systemic	nitrogen mustard hydrochloride *	systemic
atropine *	CNS	nitrogen tetroxide	systemic
bischloroethylnitrosourea	systemic	nitrosomethylvinylamine	systemic
boron tribromide	pulmonary	ochratoxin A	systemic
boron trifluoride	pulmonary	osmium tetroxide	systemic
bromine	pulmonary,skin	ozone	pulmonary
bromine pentafluoride	pulmonary	parathion *	CNS
bromoacetone	pulmonary	pentaborane	CNS
chlorine	pulmonary	pentachlorophenol *	systemic
chlorine trifluoride	pulmonary	phosgene	pulmonary
chloropicrin	pulmonary	phosphine	systemic
colchicine	pulmonary, systemic	phosphorus (yellow)	pulmonary
cyanamide *	systemic	propargyl bromide	systemic
cyanides and cmpds *	blood	propionic nitrile *	systemic
cyanogen and cmpds	blood	propylene oxide *	pulmonary
decaborane *	CNS	selenium hexafluoride	pulmonary
diazomethane	pulmonary	sodium azide * (1)	systemic
diborane	pulmonary	sodium fluoroacetate*	systemic
dichloroacetylene	pulmonary	stibine	systemic,blood
diclorvos *	systemic	strychnine	systemic,CNS
digitoxin *	systemic	TCCD *	systemic
dimethyl mercury *	CNS, systemic	tetraethyl lead *	CNS
dimethyl sulfate *	pulmonary,skin,eyes	tetraethylpyrophosphate*	systemic
dinitrophenol, 2,4-*	systemic	tetramethyl succinonitrile *	CNS
endosulfan *	CNS	thiophenol *	CNS,systemic
endrin *	CNS	thio-tep	systemic
ethylene chlorohydrin *	systemic	o-toluidine *	blood
fluorine	pulmonary,skin	tubocurarine chloride hydrate *	systemic
germane	pulmonary,blood	vanadium pentoxide	systemic
heptachlor *	systemic	venom, snake, crotalus adamateus	systemic
heptachlor epoxide *	systemic	venon, snake, crotalus atrox	systemic
hydrogen cyanide *	systemic	xylidine *	blood
hydrogen fluoride*	pulm.,skin,systemic		
hydrogen selenide *	pulmonary		
hydrogen sulfide	systemic		
methyl bromide *	pulmonary		
manganese tricarbonyl	CNS		
methylcyclopentadienyl *			

*** readily absorbed through the skin**

(1) Requirements of this Section do not apply to chemicals in which sodium azide is used in small amounts as a preservative. Sodium azide and solutions containing sodium azide should not be put into the sewer system. They should be collected as hazardous waste.

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5.6.2 Employee/Student Notification and Use

The supervising faculty member is responsible for informing all employees or students that the chemical they are working with is an acute toxin and providing them with a copy of the written protocol. These materials should be used only under direct supervision and in the approved designated area.

5.6.3 Personal Protective Equipment

Protective Clothing

Laboratory coats must be worn when acute toxins are being used. Laboratory coats used for this purpose must not be worn outside of the laboratory. Contaminated clothing must be removed immediately, placed in a sealed plastic bag, and given to the Lab Manager for proper disposal.

If hand contact is possible, gloves appropriate for the task and with resistance to the acute toxin involved must be worn. Disposable gloves must be collected for proper disposal after every use, and immediately after known or suspected contact with an acute toxin. Non-disposable gloves must be designated for use only with the acute toxin and must be decontaminated or disposed of after every use.

Eye Protection

Appropriate eye protection must be worn as described in Section 4.5.1. Splash goggles are required when using any quantity of an acute toxin in liquid or powder form.

5.6.4 Personal Hygiene

Hands must be washed with soap and water immediately after known or suspected contact, at the completion of any procedure, and prior to leaving the laboratory. If eyes or other parts of the body are contaminated, they must be immediately washed or flushed as described in Section 2.3.1.

5.6.5 Work Area Identification and Access

Each designated work area where acute toxins are being used must be clearly labeled with a sign with the following or similar warning:

CAUTION
DESIGNATED WORK AREA
SELECT CARCINOGENS, REPRODUCTIVE HAZARDS, OR SUBSTANCES OF
HIGH ACUTE TOXICITY MAY BE PRESENT.
AUTHORIZED USERS ONLY

5.6.6 Handling and Storage Procedures

Work Surfaces

All work surfaces on which acute toxins are used should be a smooth nonporous material or covered with stainless steel or plastic trays. The work surface or trays must be decontaminated after the procedure is complete.

Containment Equipment

Procedures using volatile acute toxins and those involving solid or liquid acute toxins that may result in the generation of aerosols or airborne particles should be conducted in a fume hood, glove box, or other containment device. Examples of aerosol generation procedures include: transfer operations, blending, and open vessel centrifugation.

Vacuum Lines

Vacuum lines should be protected (e.g., with an absorbent or liquid trap or filter) to prevent entry of any acute toxin into the system.

Decontamination

Equipment and contaminated materials should be decontaminated using procedures that deactivate the acute toxin, if such procedures are available. If deactivation procedures are not available, the equipment should be rinsed in an appropriate solvent and the solvent collected as hazardous waste. All glassware must be decontaminated or rinsed before it is sent for washing. Decontamination of the work area must be done whenever there has been known or suspected contamination and at the end of each experiment. The work area should be decontaminated daily.

Container Labeling

All non-original containers in which acute toxins are stored must be labeled with the chemical name, student and faculty name, date, and a warning indicating it is a acute toxin. Do not use abbreviations.

5.6.7 Waste Disposal

Collection for Off-Site Disposal

All contaminated materials must be collected for off-site disposal. The procedures outlined in Section 6.5 for hazardous waste disposal should be followed.

5.7 REPRODUCTIVE TOXINS

Reproductive toxins, one of OSHA's three categories of Particularly Hazardous Substances, are substances that affect reproductive capability and include four general categories.

- **Mutagens** - substances that may cause a change (mutation) in the genetic material of a cell.
- **Teratogens** - substances that may affect the viability or cause physical or metabolic defects in the developing embryo or fetus when a pregnant female is exposed to that substance.
- **Sterility/Infertility** - substances that may affect female or male fertility.
- **Lactation** - substances that may be transferred from the mother to the child through breast milk and cause adverse health effects in the child.

Reproductive toxins include physical agents (e.g. radiation), biological agents (e.g. viruses), maternal metabolic imbalances, and chemical agents. This section will focus on chemical reproductive toxins. There are numerous references on reproductive toxicology but, unfortunately, no scientific or government agency has established a definitive method for classifying potential human chemical reproductive toxins as they have done for carcinogens. It is, therefore, impossible to give a complete list of all chemicals that should be considered reproductive toxins. Appendix 5-D gives examples of chemicals known or suspected to be human reproductive toxins. The list does not take into account the chemical form, concentration, toxicity, or length of exposure.

A large number of chemicals have been reported to be animal reproductive toxins in various species, but since there is no established method for defining when animal evidence is sufficient to relate to human reproductive toxicity potential, it cannot be meaningfully organized here. Container labels and Material Safety Data Sheets should be consulted for the manufacturer's assessment of animal reproductive toxicity, and precautions should be taken to minimize exposure to those chemicals particularly during pregnancy or childbearing years.

As there is no definitive list of human reproductive toxins, they will be defined here as a chemical which meets one of the following criteria.

1. It is listed on Appendix 5-D as an "Example of Known or Suspected Human Reproductive Toxin".
2. The container label or Material Safety Data Sheet reports positive findings of human reproductive toxicity.
3. The faculty member has knowledge that the chemical is a human reproductive toxin.

5.7.1 Notification of Use and Protocols

Each faculty member using or supervising the use of any human reproductive toxin must notify the Lab Manager using the form included in Appendix 5-B. Review procedures are

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detailed in the introduction to Section 5. If the toxin is to be stored after completion of its approved use, it should be given to the Lab Manager for proper storage.

Upon request, the Safety Committee will evaluate specific experimental procedures to determine if additional handling requirements are advisable or if certain requirements of this Section may be waived. The Committee may also request protocols for use of reproductive toxins.

5.7.2 Employee/Student Notification

The supervising faculty member is responsible for informing all employees and students that the chemical they are working with is considered a human reproductive toxin.

5.7.3 Personal Protective Equipment

Protective Clothing

Laboratory coats must be worn when greater than 10 milliliter or 10 milligrams of a human reproductive toxin is being used. Laboratory coats used for this purpose must not be worn outside of the laboratory. Contaminated clothing must be removed immediately, sealed in a plastic bag and given to the Lab Manager for proper disposal.

If hand contact is possible, gloves appropriate for the task and with resistance to the reproductive toxin involved must be worn. Disposable gloves must be properly discarded after every use and immediately after known or suspected contact with a human reproductive toxin. Non-disposable gloves must be designated for use only with the human reproductive toxin and must be decontaminated or discarded after every use.

Eye Protection

Appropriate eye protection must be worn as described in 4.5.1.

5.7.4 Personal Hygiene

Hands must be washed with soap and water immediately after known or suspected contact, at the completion of any procedure, and prior to leaving the laboratory. If other parts of the body are contaminated they must be immediately washed or flushed, in the case of eye contamination, described in Section 2.3.1.

5.7.5 Work Area Identification and Access

Designated work areas where human reproductive toxins are being used must be clearly labeled with a sign with the following, or similar, warning:

CAUTION
DESIGNATED WORK AREA
SELECT CARCINOGENS, REPRODUCTIVE HAZARDS, OR SUBSTANCES OF
HIGH ACUTE TOXICITY MAY BE PRESENT.
AUTHORIZED USERS ONLY.

5.7.6 Handling and Storage Procedures

Work Surfaces

All work surfaces on which human reproductive toxins are used should be smooth and nonporous or covered with stainless steel or plastic trays. The work surface or trays should be decontaminated after the procedure is complete.

Containment Equipment

Procedures using volatile human reproductive toxins and those involving solid or liquid human reproductive toxins that may result in the generation of aerosols or airborne particles should be conducted in a fume hood, glove box or other containment device. Examples of aerosol generation procedures include: transfer operations, blending, and open vessel centrifugation.

Vacuum Lines

Vacuum lines should be protected (e.g. with an absorbent or liquid trap or filter) to prevent entry of any human reproductive toxin into the system.

Decontamination

Equipment and contaminated materials should be decontaminated by procedures that deactivate the human reproductive toxin if such procedures are available. If deactivation procedures are not available, the equipment should be rinsed with an appropriate solvent and the solvent collected as hazardous waste. All glassware must be decontaminated and rinsed before it is sent for washing. Decontamination of the work area must be done whenever there has been known or suspected contamination and at the end of each experiment. The work area must be decontaminated daily.

Container Labeling

All non-original containers in which a human reproductive toxin is stored must be labeled with the chemical name, student and faculty name, date, and a warning indicating it is a reproductive toxin.

5.7.7 Waste Disposal

Waste Minimization

One goal of experimental design should be the minimization of waste produced. Using the least amount of the reproductive toxin possible and limiting the use of disposable equipment are effective methods.

Deactivation

When possible, wastes should be deactivated to form non-toxic degradation products. Deactivation procedures for some human reproductive toxins which are also carcinogens may be available from the manufacturer.

Collection for Off-Site Disposal

If deactivation methods are not available or the deactivation product remains hazardous (e.g., flammable) all contaminated materials must be collected for off-site disposal. The procedures outlined in Section 6.5 for Hazardous Waste Disposal should be followed.

5.8 SELECT CARCINOGENS

These guidelines for the laboratory use of chemical carcinogens establish procedures and safeguards for minimizing exposure of laboratory personnel to chemicals that pose a carcinogenic risk. They apply to all chemicals defined as "select carcinogens", one of OSHA's three categories of Particularly Hazardous Substances,³ which include:

- all OSHA regulated carcinogens (29 CFR Subpart Z),
- all substances the National Toxicology Program (NTP) lists as "known to be carcinogens", or "reasonably anticipated to be carcinogens",
- all substances that the International Agency for Research on Cancer (IARC) defines as Group 1, "carcinogenic to humans", or as Group 2A, "probably carcinogenic to humans" or Group 2B, "possibly carcinogenic to humans".

Appendix 5-E is a compilation of lists from the sources referenced above. It is taken directly from those sources and does not take into account relative hazards attributable to chemical form, concentration, toxicity, or length of exposure. These guidelines are adapted from the National Institute of Health 1981 "*NIH Guidelines for the Laboratory Use of Chemical Carcinogens*".

³ The OSHA Laboratory Standard defines three categories of Particularly Hazardous Substances: Acute Toxins, Select Carcinogens, and Reproductive Toxins.

5.8.1 Notification of Use and Protocols

Each faculty member using or supervising the use of any select carcinogen must notify the Lab Manager using the form included in Appendix 5-B. Review procedures are detailed in the introduction to Section 5. If the toxin is to be stored after completion of its approved use, it should be given to the Lab Manager for proper storage.

Upon request, the Safety Committee will evaluate specific experimental procedures to determine if additional handling requirements are advisable or if certain requirements of this Section may be waived. The Committee may also request protocols for use of select carcinogens.

5.8.2 Employee/Student Notification

The supervising faculty member is responsible for informing all employees and students that the chemical they are working with is a select carcinogen.

5.8.3 Personal Protective Equipment

Protective Clothing

Laboratory coats must be worn when greater than 10 milliliters or 10 milligrams of a select carcinogen is being used. Laboratory coats used for this purpose must not be worn outside of the laboratory. Contaminated clothing must be removed immediately, sealed in a plastic bag and given to the Lab Manager for proper disposal.

If hand contact is possible, gloves appropriate for the task and with resistance to the carcinogen involved must be worn. Disposable gloves must be properly discarded after every use and immediately after known or suspected contact with a select carcinogen. Non-disposable gloves must be designated for use only with select carcinogens and must be decontaminated after every use.

Eye Protection

Appropriate eye protection must be worn as described in 4.5.1.

5.8.4 Personal Hygiene

Hands must be washed with soap and water immediately after known or suspected contact, at the completion of any procedure, and prior to leaving the laboratory. If other parts of the body are contaminated they must be immediately washed or flushed, in the case of eye contamination, described in Section 2.3.1.

5.8.5 Work Area Identification and Access

Designated work areas where select carcinogens are being used must be labeled with a sign with the following warning:

CAUTION
DESIGNATED WORK AREA
SELECT CARCINOGENS, REPRODUCTIVE HAZARDS, OR SUBSTANCES OF
HIGH ACUTE TOXICITY MAY BE PRESENT.
AUTHORIZED USERS ONLY.

5.8.6 Handling and Storage Procedures

Work Surfaces

All work surfaces on which select carcinogens are used should be smooth and nonporous or covered with stainless steel or plastic trays. The work surface or trays should be decontaminated after the procedure is complete.

Containment Equipment

Procedures using volatile select carcinogens and those involving solid or liquid select carcinogens that may result in the generation of aerosols or airborne particles should be conducted in a fume hood, glove box or other containment device. Examples of aerosol generation procedures include: transfer operations, blending, and open vessel centrifugation.

Vacuum Lines

Vacuum lines should be protected (e.g. with an absorbent or liquid trap or filter) to prevent entry of any human reproductive toxin into the system.

Decontamination

Equipment and contaminated materials should be decontaminated by procedures that deactivate the select carcinogen if such procedures are available.

If deactivation procedures are not available, the equipment should be rinsed with an appropriate solvent and the solvent collected as hazardous waste. All glassware must be decontaminated or rinsed before it is sent for washing. Decontamination of the work area must be done whenever there has been known or suspected contamination and at the end of each experiment. The work area should be decontaminated daily.

Container Labeling

All non-original containers in which a select carcinogen is stored must be labeled with the chemical name, student and faculty name, date, and a warning indicating it is a select carcinogen.

5.8.7 Waste Disposal

Waste Minimization

One goal of experimental design should be the minimization of waste produced. Using the least amount of the select carcinogen possible and limiting the use of disposable equipment are effective methods.

Deactivation

When possible, wastes should be deactivated to form non-toxic degradation products. Deactivation procedures may be available from the manufacturer.

Collection for Off-Site Disposal

If deactivation methods are not available or the deactivation product remains hazardous (e.g., flammable) all contaminated materials must be collected for off-site disposal. The procedures outlined in Section 6.5 for Hazardous Waste Disposal should be followed.

5.8.8 Special Requirements for Formaldehyde

OSHA has established a separate Standard for formaldehyde, 29 CFR 1910.1048, which applies to laboratories as well as other users of formaldehyde. Under that Standard employee exposure monitoring is required to determine if a particular experiment may result in overexposure to formaldehyde. To accomplish the required monitoring, faculty members must notify the Lab Manager before any experiment where formaldehyde is used in concentrations greater than 1 percent (reagent concentration or final solution concentration), using the form in Appendix 5-B.

If previous monitoring has been conducted for that experiment and acceptable levels consistently achieved, notification is not required unless the Lab Manager has informed the faculty member that additional monitoring is required. Additional requirements of the Standard may apply based on the results of monitoring. These requirements will be discussed with individual faculty as needed.

The Formaldehyde Standard also established hazard communication requirements (labeling, MSDS, and training) which apply to the use of solutions containing greater than 0.1 percent or capable of releasing formaldehyde in excess of 0.1 ppm.

Labeling

For products capable of releasing 0.1 to 0.5 ppm, labels must include a warning that the product contains formaldehyde and that more information is available on the MSDS. For products capable of releasing greater than 0.5 ppm, the label must also address health hazards and include the words "Potential Cancer Hazard". Products must be labeled with the appropriate warning.

MSDS

Material Safety Data Sheets must be readily accessible for all formaldehyde-containing products.

Training

Annual training is required for the users of formaldehyde product containing greater than 0.1 percent formaldehyde or capable of releasing in excess of 0.1 ppm. That training will be accomplished by distribution by the faculty member of the Formaldehyde Fact Sheet (Appendix 5-C) to all users of formaldehyde products.

5.9 SUMMARY OF PARTICULARLY HAZARDOUS SUBSTANCES

The OSHA Laboratory Standard classifies Acute Toxins (5.6), Select Carcinogens (5.8), and Reproductive Toxins (5.7) as Particularly Hazardous Substances. Each of those sections contains lists of chemicals that meet the criteria defining those three hazard categories. Appendix 5-F is a compilation of those lists. Please remember that the acute toxins and reproductive toxins lists are only examples and that other chemicals not listed can meet the definitions for those hazards. This list is taken directly from the sources referenced in those sections and does not take into account relative hazards attributable to chemical form, concentration, toxicity, or length of exposure.

APPENDIX 5-A

Cole Science Center First Aid Treatment for Hydrofluoric Acid Exposure

For all exposures have someone **call Campus Police immediately** and inform them that someone has been exposed to HF and needs to be taken **to the emergency room for treatment**. An ambulance should be called for transportation in the case of, inhalation or ingestion, skin contact with concentrated acid, or skin contact with dilute acid in excess of 20 square inches. Smaller areas of skin contact with dilute acid do not require an emergency if calcium gluconate gel is being used and transportation to the emergency room can be provided by Campus Police.

Skin Burns

Flush with cool water for at least 5 minutes.

Apply 2.5% Calcium Gluconate gel as soon as rinsing is stopped. Massage gel into burn site continuously until medical treatment is received.

Eye Contact

Flush eyes for at least 15 minutes, holding eyelids open to allow flushing of the eyes. Ice water compresses should be applied to the eyes during transport to the emergency room.

Inhalation

Remove to fresh air. Oxygen should be administered by ambulance personnel during transport to the emergency room.

Ingestion

Drink large amounts of water immediately. Do not induce vomiting. If available, milk, maalox or mylanta may be given during transport to the emergency room.

If possible take the publication “Recommended Medical Treatment for Hydrofluoric Acid Exposure” and the concentration of the acid involved to the emergency room with you.

APPENDIX 5-C

FORMALDEHYDE FACT SHEET

The Occupational Health and Safety Administration (OSHA) has established a chemical specific standard to protect employees from overexposure to formaldehyde in the workplace. This document provides information on the potential health effects of formaldehyde exposure and on the requirements of the OSHA Formaldehyde Standard, 29 CFR 1910.1048, as they apply to the College. This information is provided to both employees and students who may be exposed to formaldehyde in the laboratory to increase awareness of the hazards of formaldehyde overexposure and of appropriate precautions to avoid overexposure. The precise hazards associated with exposure to formaldehyde depend both on the form (solid, liquid, or gas) of the material and the concentration of formaldehyde. For example, 37-50 percent solutions of formaldehyde present a much greater hazard to the skin and eyes from spills or splashes than solutions containing less than one percent formaldehyde.

Chemical Name: Formaldehyde

Chemical Family: Aldehyde

Chemical Formula: HCHO

Molecular Weight: 30.03

Chemical Abstract Service Number (CAS#): 50-00-0

Synonyms: formalin (37% solution), formic aldehyde, paraform, methyl aldehyde, methylene glycol, methylene oxide, tetraoxymethalene, oxomethane, oxymethylene

Description: as a gas, strong pungent odor, vapor density 1.067 (air=1), soluble in water and alcohol

Description: as a solution (37%), colorless liquid, pungent odor, specific gravity 1.08 (H₂O=1), vapor density 1.04 (air=1), odor threshold 0.8-1 ppm

Fire and Explosion Hazard: as a solution (37%), flash point 185°F, lower explosion limit 7%, upper explosion limit 73%; auto ignition temperature 806°F; aqueous solutions often contain methanol as an inhibitor increasing the fire hazard

Extinguishing media: use dry chemical, carbon dioxide or water

Reactivity: Formaldehyde solutions may self-polymerize to form para-formaldehyde

Incompatible Materials: strong oxidizing agents (violent reaction), caustics, strong alkalies,

isocyanates, anhydrides, oxides and inorganic acids; reacts with hydrochloric acid to form the potent carcinogen, bis-chloromethyl ether; reacts with nitrogen dioxide, nitromethane, perchloric acid, and aniline, or peroxyformic acid to yield explosive compounds

Health Hazard Data

Permissible Exposure Limits:

8-hr time weighted average: 0.75 ppm

15-min time weighted average: 2.0 ppm

Acute Effects of Exposure: Ingestion of liquids containing 10 to 40% causes severe irritation and inflammation of the mouth, throat, and stomach.

Severe stomach pains will follow ingestion with possible loss of consciousness and death. Ingestion of dilute solution (0.03-0.04%) may cause discomfort in the stomach and pharynx. Inhalation of concentrations of 0.5 to 2.0 ppm may irritate the eyes, nose, and throat of some individuals.

Concentrations of 3 to 5 ppm also cause tearing of the eyes and are intolerable to some individuals. Concentration of 10 to 20 ppm cause difficulty in breathing, burning of the nose and throat, cough, and heavy tearing of the eyes, and 25 to 30 ppm causes severe

respiratory tract injury leading to pulmonary edema and pneumonitis. A concentration of 100 ppm is immediately dangerous to life and health. Skin contact causes irritation and may cause white discoloration, smarting, drying, cracking, and scaling. Prolonged and repeated contact can cause numbness and a hardening or tanning of the skin.

Formaldehyde is also a sensitizer. Previously exposed individuals may react to future exposure with an allergic eczematous dermatitis or hives. Eye exposure can cause injuries ranging from transient discomfort to severe, permanent corneal clouding and loss of vision. The severity of the effect depends on the concentration and whether or not the eyes are flushed with water immediately after the accident.

Chronic Effects of Exposure: Formaldehyde has the potential to cause cancer in humans. Repeated and prolonged overexposure increases the risk. Various animal experiments have conclusively shown formaldehyde to be a carcinogen in rats. In humans, formaldehyde overexposure has been associated with cancers of the lung, nasopharynx and oropharynx, and nasal passages. Formaldehyde is genotoxic in several in vitro test systems showing properties of both initiator and promoter. Prolonged or repeated overexposure may also result in respiratory impairment.

First Aid Procedures

First Aid should be administered by Campus Police.

Ingestion: if the victim is conscious, dilute, inactivate, or absorb by giving milk, activated charcoal or water. Any organic material will inactivate formaldehyde. Keep person warm and at rest, Get medical attention immediately. If vomiting occurs, keep head lower than hips.

Inhalation: Remove victim to fresh air immediately. When concentrations are very high, rescuers must wear self-contained breathing

apparatus. If breathing has stopped, give artificial respiration. Keep warm and at rest. Get medical attention immediately.

Skin Contact: Remove contaminated clothing immediately. Wash the affected area with soap and a large amount of water at least 15 to 20 minutes. If there are chemical burns or if irritation persists, get medical attention.

Eye Contact: Wash the eyes immediately with large amount of water at least 15 to 20 minutes. Get medical attention immediately.

Spill, Leak and Disposal Procedures

In the event of a leaking container, immediately place the container in a fume hood and transfer to a new container which has been properly labeled. Spills should be absorbed using vapor barrier pads and the pads collected for disposal as hazardous waste. Unused formaldehyde solutions must be disposed of as hazardous waste. Used concentrated solutions should also be collected for hazardous waste disposal. Used dilute solutions (less than one percent) can be further diluted and discharged to the sewer.

Material Safety Data Sheets and Container Labeling

Material Safety Data Sheets (MSDS) are provided by the manufacturer of all hazardous chemicals purchases. The formaldehyde MSDS will include information specific to that product such as the concentration of formaldehyde in a solution. CSC MSDS files are located at the north end of the second floor. MSDS copies are also available at Environmental Health & Safety.

Products capable of releasing 0.1 to 0.5 ppm of formaldehyde must be labeled with a warning that the product contains formaldehyde and that more information is available from the MSDS. For products

capable of releasing greater than 0.5 ppm, the label must also address health hazards and include the words "Potential Cancer Hazard". Labels are available from the Chemical Hygiene Officer.

Protective Clothing and Equipment

All contact with the eyes or skin of solutions containing 1% or more of formaldehyde must be prevented by use of chemical splash goggles, gloves, and laboratory coats (as needed). Any situations where exposure levels would require the use of a respirator will be addressed on an individual basis by the Chemical Hygiene Officer.

Work Practices

Work with formaldehyde solutions should be performed in a fume hood whenever possible. Containers should be closed when not in use. Other precautions specific to the experiment may be required by the faculty.

Exposure Monitoring Procedures

All uses of formaldehyde must be reported to the Chemical Hygiene Officer so that the need for initial exposure monitoring can be determined. Initial exposure monitoring is conducted in all

cases where exposures may be above 0.5 ppm as an 8-hr time weighted average, or 2.0 ppm as a 15-min time weighted average. If you are selected for exposure monitoring, you will be asked to wear a monitoring badge. Employees will be informed of the results of monitoring within 15 days of the receipt of the results. If initial monitoring demonstrates a potential for exceeding the permissible exposure limits, additional monitoring will be conducted.

Medical Surveillance

Medical surveillance is available in instances when routine exposures exceed 0.5 ppm as an 8-hr time weighted average or 2.0 ppm as a 15-min time weighted average, or you experience signs and symptoms related to formaldehyde exposure. Surveillance includes a medical disease questionnaire specified by OSHA and a physical examination if the physician determines it is necessary.

Questions

Any questions regarding formaldehyde exposure or the OSHA Standard should be addressed to the Lab Manager or Environmental Health & Safety.

APPENDIX 5-D

Cole Science Center

**Examples of Known or Suspected
Human Reproductive Toxins**

EXAMPLES OF KNOWN OR SUSPECT HUMAN REPRODUCTIVE TOXINS (alphabetical)

Key:

F -- Fertility

T -- Teratogens

M -- Mutagens

L -- Lactation

SA -- Readily Absorbed Through the Skin

revised: 11/2012

CHEMICAL NAME	CAS #	F	T	M	L	SA
2,4,5-T	000093-76-5		x			x
ACETOHYDROXAMIC ACID	000546-88-3		x			x
ACROLEIN	000107-02-8			x		x
ACRYLAMIDE	000079-06-1		x	x		x
ACRYLONITRILE	000107-13-1			x		x
ACTINOMYCIN D	000050-76-0			x		x
ALL-TRANS RETINOIC ACID	000302-79-4		x	x		x
ALPRAZOMAN	028981-97-7		x			x
AMANTADINE HYDROCHLORIDE	000665-66-7		x			x
AMINOAZOTOLUENE,ortho-	000097-56-3			x		
AMINODIPHENYL,4-	000092-67-1			x		x
AMINOGLUTETHIMIDE	000125-84-8		x			x
AMINOPTERIN	000054-62-6		x			
ANGIOTENSIN CONVERTING ENZYME (ACE) INHIBITORS	000000-00-0		x			
ANISINDIONE	000117-37-3		x			
ARSENEOUS ACID, CALCIUM SALT	027152-57-4		x			x
ARSENEOUS ACID, POTASSIUM SALT	010124-50-2		x			x
ARSENIC ACID	007778-39-4		x			x
ARSENIC ACID, CALCIUM SALT (2:3)	007778-44-1		x			x
ARSENIC ACID, DISODIUM SALT, HEPTAHYDRATE	010048-95-0		x			x
ARSENIC ACID, LEAD(2+) SALT (1:1)	007784-40-9		x			x
ARSENIC ACID, MONOPOTASSIUM SALT	007784-41-0		x			x
ARSENIC ACID, SODIUM SALT	007631-89-2		x			x
ARSENIC AND COMPOUNDS	007440-38-2		x			x
ARSENIC PENTAFLUORIDE	007784-36-3		x			
ARSENIC PENTOXIDE	001303-28-2		x			
ARSENIC TRICHLORIDE	007784-34-1		x			
ARSENIC TRIOXIDE	001327-53-3		x			
ARSENIUOS ACID, CALCIUM SALT	027152-57-4		x			x
ARSENIUOS ACID, MONOSODIUM SALT	007784-46-5		x			x
ARSINE	007784-42-1		x			x
ARSONIC ACID	000097-44-9		x			x
ARSONIC ACID, CALCIUM SALT (1:1)	052740-16-6		x			x
ASPRIN	000050-78-2		x			
ATENOLO	029122-68-7		x			x
AURAMINE	000492-80-8			x		
AURANOFIN	034031-32-8			x		
AZATHIOPRINE	000446-86-6			x		
AZIRIDINE	000151-56-4					x
BARBITURATES	000000-00-0		x			
BECLOMETHASONE DIPROPIONATE	005534-09-8	x	x			
BENOMYL	017804-35-2	x	x	x		x

EXAMPLES OF KNOWN OR SUSPECT HUMAN REPRODUCTIVE TOXINS (alphabetical)

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revised: 11/2012

CHEMICAL NAME	CAS #	F	T	M	L	SA
BENZENE	000071-43-2			x		x
BENZO[a]PYRENE	000050-32-8			x		
BENZPHETAMINE HYDROCHLORIDE	005411-22-3		x			x
BENZYL CHLORIDE	000100-44-7		x			
BISCHLOROETHYL NITROSOUREA (BCNU)	000154-93-8			x		
BROMODEOXYURIDINE	000059-14-3		x	x		
BROMODICHLOROMETHANE	000075-27-4			x		
BROMOPROPANE, 1-	000106-94-5		x			
BROMOPROPANE, 2-	000075-26-3		x			
BROMOXYNIL	001689-84-5		x			x
BROMOXYNIL OCTANOATE	001689-99-2		x			x
BUTANEDIOL DIMETHANESULFONATE, 1,4- (BUSULFAN)	000055-98-1	x	x	x		
CADMIUM AND COMPOUNDS	007440-43-9	x	x	x		
CADMIUM CARBONATE	000513-78-0	x	x	x		
CADMIUM CHLORIDE	010108-64-2	x	x	x		x
CADMIUM FLUOBORATE	014486-19-2	x	x	x		
CADMIUM NITRATE	010325-94-7	x	x	x		
CADMIUM OXIDE	001306-19-0	x	x	x		
CADMIUM SULFATE (1:1)	010124-36-4	x	x	x		
CADMIUM SULFIDE	001306-23-6	x	x	x		
CARBAMAZEPINE	000298-46-4		x			
CARBON DISULFIDE	000075-15-0	x	x			x
CARBON MONOXIDE	000630-08-0		x			
CARBOPLATIN	041575-94-4		x			x
CHLORAMBUCIL	000305-03-3		x			
CHLORAMPHENICOL	000056-75-7			x		
CHLORDANE	000057-74-9			x		x
CHLORDANE, ALPHA	005103-71-9			x		x
CHLORDANE, BETA	005103-74-2			x		x
CHLORDANE, GAMMA	005566-34-7			x		x
CHLORDIAZEPOXIDE	000058-25-3		x			
CHLORDIAZEPOXIDE HYDROCHLORIDE	000438-41-5		x			
CHLORO-2-METHYLPROPENE, 3-	000563-47-3			x		
CHLOROFORM	000067-66-3			x		
CHLOROMETHYL ETHER,BIS-	000542-88-1			x		x
CHLOROMETHYL METHYL ETHER	000107-30-2			x		
CHLORO-O-PHENYLENEDIAMINE,4-	000095-83-0			x		
CHLORO-O-TOLUIDINE, 4-	000095-69-2			x		
CHLOROPRENE	000126-99-8	x	x	x		x
CHROMIUM, HEXAVALENT COMPOUNDS	000000-00-0	x		x		
CISPLATIN	015663-27-1			x		
CLOBETASOL PROPIONATE	025122-46-7		x			
CLOMIPHENE CITRATE	000050-41-9		x	x		

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CHEMICAL NAME	CAS #	F	T	M	L	SA
CLORAZEPATE DIPOTASSIUM	057109-90-7		x			
COLCHICINE	000064-86-8			x		
CYCLOHEXIMIDE	000066-81-9			x		x
CYCLOPHOSPHAMIDE	006055-19-2	x	x	x		x
CYCLOPHOSPHAMIDE	000050-18-0	x	x	x		x
CYCLOSPORIN	079217-60-0	x	x			x
CYCLOSPORIN A	059865-13-3	x	x			x
CYTARABINE	000147-94-4		x			
DANAZOL	017230-88-5	x				
DAUNOMYCIN	020830-81-3			x		
DDT	000050-29-3	x	x			x
DEMECLOCYCLINE HYDROCHLORIDE (INTERNAL USE)	000064-73-3		x			
DIAMINOANISOLE, 2,4- (AND ITS SALTS)	000615-05-4			x		
DIAMINOTOLUENE, 2,4-	000095-80-7			x		
DIAZEPAM	000439-14-5		x			x
DIBENZ[a,h]ANTHRACENE	000053-70-3			x		
DIBROMO-3-CHLOROPROPANE,1,2-	000096-12-8	x				x
DIBROMOACETONITRILE	003252-43-5			x		x
DIBROMOPROPYL (2,3) PHOSPHATE	000126-72-7			x		x
DICHLOROBENZIDINE, 3,3-	000091-94-1			x		x
DICHLOROETHANE, 1,2-	000107-06-2			x		x
DICHLOROMETHANE	000075-09-2			x		
DICHLORVOS	000062-73-7			x		x
DICUMAROL	000066-76-2		x			
DIEPOXYBUTANE	001464-53-5			x		x
DIETHYLSTILBOESTROL	000056-53-1	x	x			x
DIFLUNISAL	022494-42-4		x			
DIGITOXIN	000071-63-6		x			x
DIMETHANESULFONATE, 1,4-	000299-75-2		x			
DIMETHYL ARSENIC ACID	000075-60-5		x			
DIMETHYL MERCURY	000593-74-8					x
DIMETHYL SULFATE	000077-78-1			x		x
DIMETHYLACETAMIDE, N,N-	000127-19-5		x			x
DIMETHYLAMINOAZOBENZENE, 4-	000060-11-7			x		
DIMETHYLCARBAMOYL CHLORIDE	000079-44-7			x		
DIMETHYLFORMAMIDE	000068-12-2			x		x
DIMETHYLHYDRAZINE, 1,1-	000057-14-7			x		x
DIMETHYLHYDRAZINE, 1,2-	000540-73-8			x		x
DI-N-BUTYL PHTHALATE	000084-74-2		x			
DI-N-HEXYL PHTHALATE	000084-75-3	x	x			
DINITROPYRENE, 1,6-	042397-64-8			x		
DINITROPYRENE, 1,8-	042397-65-9			x		
DINITROTOLUENE, 2,4-	000121-14-2			x		x

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CHEMICAL NAME	CAS #	F	T	M	L	SA
DINITROTOLUENE, 2,6-	000606-20-2			X		X
DINOSEB	000088-85-7		X			X
DIOCTYL PHTHALATE	000117-81-7			X		
DIPHENYLHYDANTOIN	000057-41-0			X		
DOXORUBICIN HYDROCHLORIDE (ADRIAMYCIN)	023214-92-8			X		
DOXYCYCLINE AND COMPOUNDS (INTERNAL USE)	000564-25-0			X		
ENDOSULFAN	000115-29-7			X		X
EPICHLOROHYDRIN	000106-89-8			X		X
ERGOTAMINE TARTRATE	000379-79-3			X		
ETHIDIUM BROMIDE	001239-45-8			X		
ETHIONAMIDE	000536-33-4		X			
ETHYL METHANESULPHONATE	000062-50-0			X		
ETHYLENE DIBROMIDE	000106-93-4	X	X	X		X
ETHYLENE GLYCOL ETHERS	000000-00-0	X	X			X
ETHYLENE OXIDE	000075-21-8		X			
ETHYLENEIMINE	009002-98-6			X		X
ETHYLHEXANOIC ACID	000149-57-5		X			X
ETHYL-N-NITROSOUREA,N-	000759-73-9			X		
ETOPOSIDE	033419-42-0			X		
ETRETINATE	054350-48-0			X		
FLUOROURACIL	000051-21-8		X	X		
FLUOXYMESTERONE	000076-43-7	X				
FORMALDEHYDE	000050-00-0			X		X
FOWLER'S SOLUTION	001332-10-1		X			
FURYLAMIDE	003688-53-7			X		
GANCICLOVIR	082410-32-0		X	X		
GANCICLOVIR SODIUM	107910-75-8		X	X		
GLU-P-1 (2-AMINO-6-METHYLDIPYRIDO[1,2-a:3',2'-d]IMIDAZOLE)	067730-11-4			X		
GLU-P-2(2-AMINODIPYRIDO[1,2-A:3',2'-D]IMIDAZOLE)	067730-10-3			X		
GLYCIDOL	000556-52-5			X		X
GOSSYPOL	000303-45-7	X		X		
GRISEOFULVIN	000126-07-8			X		
HALOPERIDOL	000052-86-8		X			
HALOTHANE	000151-67-7		X			
HEPTACHLOR	000076-44-8			X		X
HEPTACHLOR EPOXIDE	001024-57-3			X		X
HEXACHLOROBENZENE	000118-74-1				X	X
HEXACHLOROBENZENE, GAMMA	000058-89-9					X
HEXAMETHYLPHOSPHORAMIDE	000680-31-9			X		X
HYDRAZINE	000302-01-2			X		X
HYDRAZINE SULFATE (1:1)	010034-93-2			X		X
HYDROXYUREA	000127-07-1		X			
IDARUBICIN HYDROCHLORIDE	057852-57-0		X	X		

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CHEMICAL NAME	CAS #	F	T	M	L	SA
IFOSFAMIDE	003778-73-2			X		
ISOTRETINOIN	004759-48-2		X	X		
KEPONE (CHLORDECONE)	000143-50-0	X				X
LASIOCARPINE	000303-34-4			X		
LEAD PHOSPHATE	007446-27-7	X	X	X	X	
LEAD ACETATE	000301-04-2	X	X	X	X	
LEAD ACETATE (II) TRIHYDRATE	006085-56-4	X	X	X	X	
LEAD AND COMPOUNDS	007439-92-1	X	X	X	X	
LEAD CHROMATE (VI) OXIDE	018454-12-1	X	X	X	X	
LEVODOPA	000059-92-7			X		
LINURON	000330-55-2		X			
LITHIUM AND COMPOUNDS	007439-93-2		X			
LORAZEPAM	000846-49-1		X			
MEBENDAZOLE	031431-39-7			X		
MEDROXYPROGESTERONE ACETATE	000071-58-9		X	X		
MEGESTROL ACETATE	000595-33-5	X				
MELPHALAN	000148-82-3	X				
MERCURY AND COMPOUNDS	007439-97-6	X	X			X
MESTRANOL	000072-33-3	X				
METHIMAZOLE	000060-56-0		X	X		
METHOTREXATE SODIUM	015475-56-6			X		
METHYL BROMIDE	000074-83-9			X		X
METHYL CHLORIDE	000074-87-3			X		
METHYL HYDRAZINE	000060-34-4			X		X
METHYL MERCURY AND COMPOUNDS	022967-92-6				X	X
METHYL METHANESULPHONATE	000066-27-3			X		
METHYLAMINOPTERIN	000059-05-2		X	X		
METHYLARSONIC ACID	000124-58-3		X			
METHYLAZIRIDINE, 2- (PROPYLENEIMINE)	000075-55-8			X		X
METHYLAZOXYMETHYL ACETATE	000592-84-7			X		
METHYLDICHLOROARSINE	000593-89-5		X			X
METHYL-N-NITRO-N'-NITROSOGUANIDINE,N- (MNNG)	000070-25-7			X		
METHYL-N-NITROSOUREA,N-	000684-93-5			X		
METHYLTESTOSTERONE	000058-18-4		X			
METHYLTHIOURACIL	000056-04-2		X			
METRONIDAZOLE	000443-48-1			X		
METRONIDIZOL	000443-81-1			X		
MIREX	002385-85-5	X				X
MISOPROSTOL	059122-46-2		X			
MITOMYCIN C	000050-07-7			X		
MITOXANTRONE HYDROCHLORIDE	070476-82-3			X		X
MONOCHLORO-1,2-PROPANEDION,3-	000096-24-2		X	X		X
MONOCROTALINE	000315-22-0			X		

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CHEMICAL NAME	CAS #	F	T	M	L	SA
MUSTARD GAS (SULPHUR MUSTARD)	000505-60-2			x		x
MYCLOBUTANIL	088671-89-0		x			
NAPHTHYL METHYLCARBAMATE	000063-25-2	x		x		
NAPHTHYLAMINE, 2-	000091-59-8			x		x
NICKEL SULFIDE (3:2)	012035-72-2			x		
NICOTINE	000054-11-5		x			x
NIFEDIPINE	021829-25-4		x			
NITROFLUORENE,2-	000607-57-8			x		
NITROGEN MUSTARD	000051-75-2			x		x
NITROGEN MUSTARD HYDROCHLORIDE	000055-86-7			x		x
NITROGEN MUSTARD N-OXIDE	000126-85-2			x		x
NITROGEN MUSTARD N-OXIDE HYDROCHLORIDE	000302-70-5			x		x
NITROPYRENE, 1-	005522-43-0			x		
NITROSODIETHYLAMINE,N-	000055-18-5			x		
NITROSODIMETHYLAMINE,N-	000062-75-9			x		
NITROSODI-n-BUTYLAMINE, N-	000924-16-3			x		
NITROSODI-n-PROPYLAMINE, N-	000621-64-7			x		
NITROSOMORPHOLINE, N-	000059-89-2			x		
NITROSO-N-METHYLUREA, N-	000684-93-5			x		
NITROSOPIPERIDINE, N-	000100-75-4			x		
NITROSOPYRROLIDINE, N-	000930-55-2			x		
NITROTOLUENE, 2-	000088-72-2		x	x		
NORETHISTERONE	000068-22-4	x		x		
NORGESTREL	006533-00-2	x				
OXYMETHOLONE	000434-07-1		x			
OXYTETRACYCLINE AND COMPOUNDS (INTERNAL USE)	000079-57-2		x			
OZONE	010028-15-6			x		
PARAMETHADIONE	000115-67-3		x			
PARATHION	000056-38-2			x		x
PCB (AROCLOR 1254)	011097-69-1					x
PCB (AROCLOR 1260)	011096-82-5					x
PENICILLAMINE	002219-30-9		x			
PENTOSTATIN	053910-25-1			x		
PHENOBARBITAL	000050-06-6		x	x		
PHENOXYBENZAMINE HYDROCHLORIDE	000062-92-3	x				
PHENYTOIN	000057-41-0		x			
PIPOBROMAN	000054-91-1			x		
PLICAMYCIN	018378-89-7			x		
POLYBROMINATED BIPHENYL (FF-1)	067774-32-7		x			
POLYBROMINATED BIPHENYLS	059536-65-1		x			x
POLYCHLORINATED BIPHENYLS	001336-36-3	x	x		x	x
POTASSIUM CHROMATE (VI)	007789-00-6			x		
POTASSIUM DICHROMATE (VI)	007778-50-9			x		

EXAMPLES OF KNOWN OR SUSPECT HUMAN REPRODUCTIVE TOXINS (alphabetical)

Key:

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CHEMICAL NAME	CAS #	F	T	M	L	SA
PROCARBAZINE HYDROCHLORIDE	000366-70-1		x	x		
PROGESTERONE	000057-83-0		x			
PROPANE SULTONE, 1,3-	001120-71-4			x		x
PROPIOLACTONE, BETA	000057-57-8			x		
PROPYLENE OXIDE	000075-56-9			x		x
PROPYLTHIOURACIL	000051-52-5		x	x		
RESERPINE	000050-55-5		x			
RETINOIC ACID, 1,3-CIS-	004759-48-2		x			
RIBVARIN	036791-04-5		x			
RIFAMPIN	013292-46-1			x		
SAFROLE	000094-59-7			x		
SODIUM AZIDE	026628-22-8			x		x
SODIUM DICHROMATE	010588-01-9			x		x
STERIGMATOCYSTIN	010048-13-2			x		
STREPTOMYCIN SULFATE	003801-74-0		x			
STREPTOZOTOCIN	018883-66-4			x		
STYRENE	000100-42-5			x		x
STYRENE-7,8-OXIDE	000096-09-3			x		x
SULINDAC	038194-50-2		x			
TAMOXIFEN AND SALTS	010540-29-1		x			
TENIPOSIDE	029767-20-2			x		
TESTOSTERONE CYPIONATE	000058-20-8		x			
TESTOSTERONE ENANTHATE	000315-37-7	x				
TETRACHLORODIBENZO-para-DIOXIN, 2,3,7,8- (TCDD)	001746-01-6		x			x
TETRACHLOROETHYLENE	000127-18-4				x	x
TETRACYCLINES	000060-54-8		x			
TETRAETHYL LEAD	000078-00-2					x
TETRAETHYLTHIURAM DISULFIDE	000097-77-8		x			x
THALIDOMIDE	000050-35-1		x			x
THIOACETAMIDE	000062-55-5			x		
THIOGUANINE	000154-42-7			x		
THIOTEPA	000052-24-4			x		
THIOURACIL	000141-90-2			x		
THIOUREA	000062-56-6			x		
TOBACCO SMOKE (NOT PASSIVE)	000000-00-0	x	x			
TOLUENE	000108-88-3		x	x		x
TOLUENE DIISOCYANATE, 1,3-	026471-62-5			x		
TOXAPHENE (POLYCHLORINATED CAMPHENES)	008001-35-2			x		x
TREOSULPHAN	000299-75-2			x		
TRICHLOROETHYLENE	000079-01-6			x		
TRIMETHADIONE	000127-48-0		x			
TRIPHENYL TIN HYDROXIDE	000076-87-9		x			x
TRIS (2,3-DIBROMOPROPYLPHOSPHATE)	000126-72-7					x

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CHEMICAL NAME	CAS #	F	T	M	L	SA
TRP-P-2(3-AMINO-1-METHYL-5H-PYRIDO[4,3-b]INDOLE)	062450-06-0			x		
URETHANE	000051-79-6			x		
VALPROIC ACID	000099-66-1		x			
VINBLASTINE SULFATE	000143-67-9			x		
VINCRISTINE SULFATE	002068-78-2			x		
VINYL ACETATE	000108-05-4			x		
VINYL CHLORIDE	000075-01-4	x		x		
WARAFIN	000081-81-2		x			x
ZINC CHROMATE (VI) HYDROXIDE HYDRATE	015930-94-6			x		
ZINC CHROMATE (VI)HYDROXIDE	001300-73-8			x		

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Sigma-Aldrich MSDS

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ANGIOTENSIN CONVERTING ENZYME (ACE) INHIBITORS	000000-00-0		x			
BARBITURATES	000000-00-0		x			
CHROMIUM, HEXAVALENT COMPOUNDS	000000-00-0	x		x		
ETHYLENE GLYCOL ETHERS	000000-00-0	x	x			x
TOBACCO SMOKE (NOT PASSIVE)	000000-00-0	x	x			
FORMALDEHYDE	000050-00-0			x		x
PHENOBARBITAL	000050-06-6		x	x		
MITOMYCIN C	000050-07-7			x		
CYCLOPHOSPHAMIDE	000050-18-0	x	x	x		x
DDT	000050-29-3	x	x			x
BENZO[a]PYRENE	000050-32-8			x		
THALIDOMIDE	000050-35-1		x			x
CLOMIPHENE CITRATE	000050-41-9		x	x		
RESERPINE	000050-55-5		x			
ACTINOMYCIN D	000050-76-0			x		x
ASPRIN	000050-78-2		x			
FLUOROURACIL	000051-21-8		x	x		
PROPYLTHIOURACIL	000051-52-5		x	x		
NITROGEN MUSTARD	000051-75-2			x		x
URETHANE	000051-79-6			x		
THIOTEPA	000052-24-4			x		
HALOPERIDOL	000052-86-8		x			
DIBENZ[a,h]ANTHRACENE	000053-70-3			x		
NICOTINE	000054-11-5		x			x
AMINOPTERIN	000054-62-6		x			
PIPOBROMAN	000054-91-1			x		
NITROSODIETHYLAMINE,N-	000055-18-5			x		
NITROGEN MUSTARD HYDROCHLORIDE	000055-86-7			x		x
BUTANEDIOL DIMETHANESULFONATE, 1,4- (BUSULFAN)	000055-98-1	x	x	x		
METHYLTHIOURACIL	000056-04-2		x			
PARATHION	000056-38-2			x		x
DIETHYLSTILBOESTROL	000056-53-1	x	x			x
CHLORAMPHENICOL	000056-75-7			x		
DIMETHYLHYDRAZINE, 1,1-	000057-14-7			x		x
DIPHENYLHYDANTOIN	000057-41-0			x		
PHENYTOIN	000057-41-0		x			
PROPIOLACTONE, BETA	000057-57-8			x		
CHLORDANE	000057-74-9			x		x
PROGESTERONE	000057-83-0		x			
METHYLTESTOSTERONE	000058-18-4		x			
TESTOSTERONE CYPIONATE	000058-20-8		x			
CHLORDIAZEPOXIDE	000058-25-3		x			

EXAMPLES OF KNOWN OR SUSPECT HUMAN REPRODUCTIVE TOXINS (CAS#)

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HEXACHLOROBENZENE, GAMMA	000058-89-9					x
METHYLAMINOPTERIN	000059-05-2		x	x		
BROMODEOXYURIDINE	000059-14-3		x	x		
NITROSOMORPHOLINE, N-	000059-89-2			x		
LEVODOPA	000059-92-7			x		
DIMETHYLAMINOAZOBENZENE, 4-	000060-11-7			x		
METHYL HYDRAZINE	000060-34-4			x		x
TETRACYCLINES	000060-54-8		x			
METHIMAZOLE	000060-56-0		x	x		
ETHYL METHANESULPHONATE	000062-50-0			x		
THIOACETAMIDE	000062-55-5			x		
THIOUREA	000062-56-6			x		
DICHLORVOS	000062-73-7			x		x
NITROSODIMETHYLAMINE,N-	000062-75-9			x		
PHENOXYBENZAMINE HYDROCHLORIDE	000062-92-3	x				
NAPHTHYL METHYLCARBAMATE	000063-25-2	x		x		
DEMECLOCYCLINE HYDROCHLORIDE (INTERNAL USE)	000064-73-3		x			
COLCHICINE	000064-86-8			x		
METHYL METHANESULPHONATE	000066-27-3			x		
DICUMAROL	000066-76-2		x			
CYCLOHEXIMIDE	000066-81-9			x		x
CHLOROFORM	000067-66-3			x		
DIMETHYLFORMAMIDE	000068-12-2			x		x
NORETHISTERONE	000068-22-4	x		x		
METHYL-N-NITRO-N'-NITROSGUANIDINE,N- (MNNG)	000070-25-7			x		
BENZENE	000071-43-2			x		x
MEDROXYPROGESTERONE ACETATE	000071-58-9		x	x		
DIGITOXIN	000071-63-6		x			x
MESTRANOL	000072-33-3	x				
METHYL BROMIDE	000074-83-9			x		x
METHYL CHLORIDE	000074-87-3			x		
VINYL CHLORIDE	000075-01-4	x		x		
DICHLOROMETHANE	000075-09-2			x		
CARBON DISULFIDE	000075-15-0	x	x			x
ETHYLENE OXIDE	000075-21-8		x			
BROMOPROPANE, 2-	000075-26-3		x			
BROMODICHLOROMETHANE	000075-27-4			x		
METHYLAZIRIDINE, 2- (PROPYLENEIMINE)	000075-55-8			x		x
PROPYLENE OXIDE	000075-56-9			x		x
DIMETHYL ARSENIC ACID	000075-60-5		x			
FLUOXYMESTERONE	000076-43-7	x				
HEPTACHLOR	000076-44-8			x		x
TRIPHENYL TIN HYDROXIDE	000076-87-9		x			x

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DIMETHYL SULFATE	000077-78-1			X		X
TETRAETHYL LEAD	000078-00-2					X
TRICHLOROETHYLENE	000079-01-6			X		
ACRYLAMIDE	000079-06-1		X	X		X
DIMETHYLCARBAMOYL CHLORIDE	000079-44-7			X		
OXYTETRACYCLINE AND COMPOUNDS (INTERNAL USE)	000079-57-2		X			
WARAFIN	000081-81-2		X			X
DI-N-BUTYL PHTHALATE	000084-74-2		X			
DI-N-HEXYL PHTHALATE	000084-75-3	X	X			
NITROTOLUENE, 2-	000088-72-2		X	X		
DINOSEB	000088-85-7		X			X
NAPHTHYLAMINE, 2-	000091-59-8			X		X
DICHLOROBENZIDINE, 3,3-	000091-94-1			X		X
AMINODIPHENYL,4-	000092-67-1			X		X
2,4,5-T	000093-76-5		X			X
SAFROLE	000094-59-7			X		
CHLORO-O-TOLUIDINE, 4-	000095-69-2			X		
DIAMINOTOLUENE, 2,4-	000095-80-7			X		
CHLORO-O-PHENYLENEDIAMINE,4-	000095-83-0			X		
STYRENE-7,8-OXIDE	000096-09-3			X		X
DIBROMO-3-CHLOROPROPANE,1,2-	000096-12-8	X				X
MONOCHLORO-1,2-PROPANEDION,3-	000096-24-2		X	X		X
ARSONIC ACID	000097-44-9		X			X
AMINOAZOTOLUENE,ortho-	000097-56-3			X		
TETRAETHYLTHIURAM DISULFIDE	000097-77-8		X			X
VALPROIC ACID	000099-66-1		X			
STYRENE	000100-42-5			X		X
BENZYL CHLORIDE	000100-44-7		X			
NITROSOPIPERIDINE, N-	000100-75-4			X		
EPICHLOROHYDRIN	000106-89-8			X		X
ETHYLENE DIBROMIDE	000106-93-4	X	X	X		X
BROMOPROPANE, 1-	000106-94-5		X			
ACROLEIN	000107-02-8			X		X
DICHLOROETHANE, 1,2-	000107-06-2			X		X
ACRYLONITRILE	000107-13-1			X		X
CHLOROMETHYL METHYL ETHER	000107-30-2			X		
VINYL ACETATE	000108-05-4			X		
TOLUENE	000108-88-3		X	X		X
ENDOSULFAN	000115-29-7			X		X
PARAMETHADIONE	000115-67-3		X			
ANISINDIONE	000117-37-3		X			
DIOCTYL PHTHALATE	000117-81-7			X		
HEXACHLOROBENZENE	000118-74-1				X	X

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DINITROTOLUENE, 2,4-	000121-14-2			x		x
METHYLARSONIC ACID	000124-58-3		x			
AMINOGLUTETHIMIDE	000125-84-8		x			x
GRISEOFULVIN	000126-07-8			x		
DIBROMOPROPYL (2,3) PHOSPHATE	000126-72-7			x		x
TRIS (2,3-DIBROMOPROPYLPHOSPHATE)	000126-72-7					x
NITROGEN MUSTARD N-OXIDE	000126-85-2			x		x
CHLOROPRENE	000126-99-8	x	x	x		x
HYDROXYUREA	000127-07-1		x			
TETRACHLOROETHYLENE	000127-18-4				x	x
DIMETHYLACETAMIDE, N,N-	000127-19-5		x			x
TRIMETHADIONE	000127-48-0		x			
THIOURACIL	000141-90-2			x		
KEPONE (CHLORDECONE)	000143-50-0	x				x
VINBLASTINE SULFATE	000143-67-9			x		
CYTARABINE	000147-94-4		x			
MELPHALAN	000148-82-3	x				
ETHYLHEXANOIC ACID	000149-57-5		x			x
AZIRIDINE	000151-56-4					x
HALOTHANE	000151-67-7		x			
THIOGUANINE	000154-42-7			x		
BISCHLOROETHYL NITROSOUREA (BCNU)	000154-93-8			x		
CARBAMAZEPINE	000298-46-4		x			
DIMETHANESULFONATE, 1,4-	000299-75-2		x			
TREOSULPHAN	000299-75-2			x		
LEAD ACETATE	000301-04-2	x	x	x	x	
HYDRAZINE	000302-01-2			x		x
NITROGEN MUSTARD N-OXIDE HYDROCHLORIDE	000302-70-5			x		x
ALL-TRANS RETINOIC ACID	000302-79-4		x	x		x
LASIOCARPINE	000303-34-4			x		
GOSSYPOL	000303-45-7	x		x		
CHLORAMBUCIL	000305-03-3		x			
MONOCROTALINE	000315-22-0			x		
TESTOSTERONE ENANTHATE	000315-37-7	x				
LINURON	000330-55-2		x			
PROCARBAZINE HYDROCHLORIDE	000366-70-1		x	x		
ERGOTAMINE TARTRATE	000379-79-3			x		
OXYMETHOLONE	000434-07-1		x			
CHLORDIAZEPOXIDE HYDROCHLORIDE	000438-41-5		x			
DIAZEPAM	000439-14-5		x			x
METRONIDAZOLE	000443-48-1			x		
METRONIDIZOL	000443-81-1			x		
AZATHIOPRINE	000446-86-6			x		

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AURAMINE	000492-80-8			x		
MUSTARD GAS (SULPHUR MUSTARD)	000505-60-2			x		x
CADMIUM CARBONATE	000513-78-0	x	x	x		
ETHIONAMIDE	000536-33-4		x			
DIMETHYLHYDRAZINE, 1,2-	000540-73-8			x		x
CHLOROMETHYL ETHER,BIS-	000542-88-1			x		x
ACETOHYDROXAMIC ACID	000546-88-3		x			x
GLYCIDOL	000556-52-5			x		x
CHLORO-2-METHYLPROPENE, 3-	000563-47-3			x		
DOXYCYCLINE AND COMPOUNDS (INTERNAL USE)	000564-25-0			x		
METHYLAZOXYMETHYL ACETATE	000592-84-7			x		
DIMETHYL MERCURY	000593-74-8					x
METHYLDICHLOROARSINE	000593-89-5		x			x
MEGESTROL ACETATE	000595-33-5	x				
DINITROTOLUENE, 2,6-	000606-20-2			x		x
NITROFLUORENE,2-	000607-57-8			x		
DIAMINOANISOLE, 2,4- (AND ITS SALTS)	000615-05-4			x		
NITROSODI-n-PROPYLAMINE, N-	000621-64-7			x		
CARBON MONOXIDE	000630-08-0		x			
AMANTADINE HYDROCHLORIDE	000665-66-7		x			x
HEXAMETHYLPHOSPHORAMIDE	000680-31-9			x		x
METHYL-N-NITROSOUREA,N-	000684-93-5			x		
NITROSO-N-METHYLUREA, N-	000684-93-5			x		
ETHYL-N-NITROSOUREA,N-	000759-73-9			x		
LORAZEPAM	000846-49-1		x			
NITROSODI-n-BUTYLAMINE, N-	000924-16-3			x		
NITROSOPYRROLIDINE, N-	000930-55-2			x		
HEPTACHLOR EPOXIDE	001024-57-3			x		x
PROPANE SULTONE, 1,3-	001120-71-4			x		x
ETHIDIUM BROMIDE	001239-45-8			x		
ZINC CHROMATE (VI)HYDROXIDE	001300-73-8			x		
ARSENIC PENTOXIDE	001303-28-2		x			
CADMIUM OXIDE	001306-19-0	x	x	x		
CADMIUM SULFIDE	001306-23-6	x	x	x		
ARSENIC TRIOXIDE	001327-53-3		x			
FOWLER'S SOLUTION	001332-10-1		x			
POLYCHLORINATED BIPHENYLS	001336-36-3	x	x		x	x
DIEPOXYBUTANE	001464-53-5			x		x
BROMOXYNIL	001689-84-5		x			x
BROMOXYNIL OCTANOATE	001689-99-2		x			x
TETRACHLORODIBENZO-para-DIOXIN, 2,3,7,8- (TCDD)	001746-01-6		x			x
VINCRISTINE SULFATE	002068-78-2			x		
PENICILLAMINE	002219-30-9		x			

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MIREX	002385-85-5	x				x
DIBROMOACETONITRILE	003252-43-5			x		x
FURYLAMIDE	003688-53-7			x		
IFOSFAMIDE	003778-73-2			x		
STREPTOMYCIN SULFATE	003801-74-0		x			
ISOTRETINOIN	004759-48-2		x	x		
RETINOIC ACID, 1,3-CIS-	004759-48-2		x			
CHLORDANE, ALPHA	005103-71-9			x		x
CHLORDANE, BETA	005103-74-2			x		x
BENZPHETAMINE HYDROCHLORIDE	005411-22-3		x			x
NITROPYRENE, 1-	005522-43-0			x		
BECLOMETHASONE DIPROPIONATE	005534-09-8	x	x			
CHLORDANE, GAMMA	005566-34-7			x		x
CYCLOPHOSPHAMIDE	006055-19-2	x	x	x		x
LEAD ACETATE (II) TRIHYDRATE	006085-56-4	x	x	x	x	
NORGESTREL	006533-00-2	x				
LEAD AND COMPOUNDS	007439-92-1	x	x	x	x	
LITHIUM AND COMPOUNDS	007439-93-2		x			
MERCURY AND COMPOUNDS	007439-97-6	x	x			x
ARSENIC AND COMPOUNDS	007440-38-2		x			x
CADMIUM AND COMPOUNDS	007440-43-9	x	x	x		
LEAD PHOSPHATE	007446-27-7	x	x	x	x	
ARSENIC ACID, SODIUM SALT	007631-89-2		x			x
ARSENIC ACID	007778-39-4		x			x
ARSENIC ACID, CALCIUM SALT (2:3)	007778-44-1		x			x
POTASSIUM DICHROMATE (VI)	007778-50-9			x		
ARSENIC TRICHLORIDE	007784-34-1		x			
ARSENIC PENTAFLUORIDE	007784-36-3		x			
ARSENIC ACID, LEAD(2+) SALT (1:1)	007784-40-9		x			x
ARSENIC ACID, MONOPOTASSIUM SALT	007784-41-0		x			x
ARSINE	007784-42-1		x			x
ARSENIUOS ACID, MONOSODIUM SALT	007784-46-5		x			x
POTASSIUM CHROMATE (VI)	007789-00-6			x		
TOXAPHENE (POLYCHLORINATED CAMPHENES)	008001-35-2			x		x
ETHYLENEIMINE	009002-98-6			x		x
OZONE	010028-15-6			x		
HYDRAZINE SULFATE (1:1)	010034-93-2			x		x
STERIGMATOCYSTIN	010048-13-2			x		
ARSENIC ACID, DISODIUM SALT, HEPTAHYDRATE	010048-95-0		x			x
CADMIUM CHLORIDE	010108-64-2	x	x	x		x
CADMIUM SULFATE (1:1)	010124-36-4	x	x	x		
ARSENEOUS ACID, POTASSIUM SALT	010124-50-2		x			x
CADMIUM NITRATE	010325-94-7	x	x	x		

EXAMPLES OF KNOWN OR SUSPECT HUMAN REPRODUCTIVE TOXINS (CAS#)

Key:

F -- Fertility

T -- Teratogens

M -- Mutagens

L -- Lactation

SA -- Readily Absorbed Through the Skin

revised: 11/2012

CHEMICAL NAME	CAS #	F	T	M	L	SA
TAMOXIFEN AND SALTS	010540-29-1		x			
SODIUM DICHROMATE	010588-01-9			x		x
PCB (AROCLOR 1260)	011096-82-5					x
PCB (AROCLOR 1254)	011097-69-1					x
NICKEL SULFIDE (3:2)	012035-72-2			x		
RIFAMPIN	013292-46-1			x		
CADMIUM FLUOBORATE	014486-19-2	x	x	x		
METHOTREXATE SODIUM	015475-56-6			x		
CISPLATIN	015663-27-1			x		
ZINC CHROMATE (VI) HYDROXIDE HYDRATE	015930-94-6			x		
DANAZOL	017230-88-5	x				
BENOMYL	017804-35-2	x	x	x		x
PLICAMYCIN	018378-89-7			x		
LEAD CHROMATE (VI) OXIDE	018454-12-1	x	x	x	x	
STREPTOZOTOCIN	018883-66-4			x		
DAUNOMYCIN	020830-81-3			x		
NIFEDIPINE	021829-25-4		x			
DIFLUNISAL	022494-42-4		x			
METHYL MERCURY AND COMPOUNDS	022967-92-6				x	x
DOXORUBICIN HYDROCHLORIDE (ADRIAMYCIN)	023214-92-8			x		
CLOBETASOL PROPIONATE	025122-46-7		x			
TOLUENE DIISOCYANATE, 1,3-	026471-62-5			x		
SODIUM AZIDE	026628-22-8			x		x
ARSENEOUS ACID, CALCIUM SALT	027152-57-4		x			x
ARSENIUOS ACID, CALCIUM SALT	027152-57-4		x			x
ALPRAZOMAN	028981-97-7		x			x
ATENOLO	029122-68-7		x			x
TENIPOSIDE	029767-20-2			x		
MEBENDAZOLE	031431-39-7			x		
ETOPOSIDE	033419-42-0			x		
AURANOFIN	034031-32-8			x		
RIBVARIN	036791-04-5		x			
SULINDAC	038194-50-2		x			
CARBOPLATIN	041575-94-4		x			x
DINITROPYRENE, 1,6-	042397-64-8			x		
DINITROPYRENE, 1,8-	042397-65-9			x		
ARSONIC ACID, CALCIUM SALT (1:1)	052740-16-6		x			x
PENTOSTATIN	053910-25-1			x		
ETRETINATE	054350-48-0			x		
CLORAZEPATE DIPOTASSIUM	057109-90-7		x			
IDARUBICIN HYDROCHLORIDE	057852-57-0		x	x		
MISOPROSTOL	059122-46-2		x			
POLYBROMINATED BIPHENYLS	059536-65-1		x			x

EXAMPLES OF KNOWN OR SUSPECT HUMAN REPRODUCTIVE TOXINS (CAS#)

Key:

F -- Fertility

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M -- Mutagens

L -- Lactation

SA -- Readily Absorbed Through the Skin

revised: 11/2012

CHEMICAL NAME	CAS #	F	T	M	L	SA
CYCLOSPORIN A	059865-13-3	x	x			x
TRP-P-2(3-AMINO-1-METHYL-5H-PYRIDO[4,3-b]INDOLE)	062450-06-0			x		
GLU-P-2(2-AMINODIPYRIDO[1,2-A:3',2'-D]IMIDAZOLE)	067730-10-3			x		
GLU-P-1 (2-AMINO-6-METHYLDIPYRIDO[1,2-a:3',2'-d]IMIDAZOLE)	067730-11-4			x		
POLYBROMINATED BIPHENYL (FF-1)	067774-32-7		x			
MITOXANTRONE HYDROCHLORIDE	070476-82-3			x		x
CYCLOSPORIN	079217-60-0	x	x			x
GANCICLOVIR	082410-32-0		x	x		
MYCLOBUTANIL	088671-89-0		x			
GANCICLOVIR SODIUM	107910-75-8		x	x		

References:

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Sigma-Aldrich MSDS

APPENDIX 5-E

Cole Science Center

**Select Carcinogens
(Known or Suspected Human Carcinogens)**

SELECT CARCINOGENS (Alphabetical)

Key: IARC (INTERNATIONAL AGENCY FOR RESEARCH ON CANCER)

- 1 -- CARCINOGENIC TO HUMANS
- 2A -- PROBABLY CARCINOGENIC TO HUMANS
- 2B -- POSSIBLY CARCINOGENIC TO HUMANS

"s" - readily absorbed through the skin

NTP (NATIONAL TOXICOLOGY PROGRAM)

- A -- KNOWN TO BE CARCINOGENS
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LIST DOES NOT INCLUDE INDUSTRIAL PROCESSES, RADIATION, VIRUSES OR MEDICAL TREATMENT

Revised: 11/2012

CHEMICAL NAME	CAS #	OSHA	IARC			NTP	
			1	2A	2B	A	B
ACETALDEHYDE	000075-07-0				X		X
ACETAMIDE	000060-35-5				X		
ACETYLAMINOFLUORENE,2-	000053-96-3	X					X
ACID MISTS, STRONG INORGANIC	000000-00-0		X				
ACRYLAMIDE "s"	000079-06-1			X			X
ACRYLONITRILE "s"	000107-13-1	X			X		X
ADRIAMYCIN	025316-40-9			X			X
AFLATOXIN B1	001162-65-8		X				
AFLATOXIN M1	006795-23-9				X		
AFLATOXINS	001402-68-2		X			X	
AMINO-2,4-DIBROMOANTHRAQUINONE,1-	000081-49-2				X		X
AMINO-2-METHYLANTHRAQUINONE, 1-	000082-28-0						X
AMINO-3,4-DIMETHYL-3h-IMIDAZO(4,5f)QUINOLINE,2-	077094-11-2				X		X
AMINO-3,8-DIMETHYL-3H-IMIDAZO(4,5-f)QUINOXALINE, 2-	077500-04-0				X		X
AMINO-5-(5-NITRO-2-FURYL)-1,3,4-THIADIAZOLE, 2-	000712-68-5				X		
AMINOANTHRAQUINONE, 2-	000117-79-3						X
AMINOAZOBENZENE,para-	000060-09-3				X		
AMINOAZOTOLUENE,ortho-	000097-56-3				X		X
AMINOBIIPHENYL,4- "s"	000092-67-1	X	X			X	
AMITROLE	000061-82-5						X
AMMONIUM DICHROMATE (VI) "s"	007789-09-5		X			X	
AMSACRINE	051264-14-3				X		
ANISIDINE HYDROCHLORIDE, o-	000134-29-2						X
ANISIDINE, ortho- "s"	000090-04-0				X		
ANTHRAQUINONE, 1,8-DIHYDROXY	000117-10-2				X		X
ARAMITE	000140-57-8				X		
ARECA NUT	000000-00-0		X				
ARISTOLOCHIC ACIDS	000000-00-0		X			X	
ARSENEOUS ACID, CALCIUM SALT	027152-57-4	X	X			X	
ARSENEOUS ACID, POTASSIUM SALT	010124-50-2	X	X			X	
ARSENIC ACID	007778-39-4	X	X			X	
ARSENIC ACID, CALCIUM SALT (2:3)	007778-44-1	X	X			X	
ARSENIC ACID, DISODIUM SALT, HEPTAHYDRATE	010048-95-0	X	X			X	
ARSENIC ACID, LEAD(2+) SALT (1:1)	007784-40-9	X	X			X	
ARSENIC ACID, MONOPOTASSIUM SALT	007784-41-0	X	X			X	
ARSENIC ACID, SODIUM SALT	007631-89-2	X	X			X	
ARSENIC AND COMPOUNDS	007440-38-2	X	X			X	
ARSENIC PENTAFLUORIDE	007784-36-3	X	X			X	
ARSENIC PENTOXIDE	001303-28-2	X	X			X	
ARSENIC TRICHLORIDE "s"	007784-34-1	X	X			X	
ARSENIC TRIOXIDE	001327-53-3	X	X			X	
ARSENIOS ACID, CALCIUM SALT	027152-57-4	X	X			X	
ARSENIOS ACID, MONOSODIUM SALT	007784-46-5	X	X			X	
ARSONIC ACID	000097-44-9	X	X			X	
ARSONIC ACID, CALCIUM SALT (1:1)	052740-16-6	X	X			X	
ASBESTOS	001332-21-4	X	X			X	
ASBESTOS, ACTINOLITE	077536-66-4	X	X			X	
ASBESTOS, AMOSITE	012172-73-5	X	X			X	
ASBESTOS, ANTHOPHYLLITE	077536-67-5	X	X			X	
ASBESTOS, CHRYSOTILE	012001-29-5	X	X			X	
ASBESTOS, CROCIDOLITE	012001-28-4	X	X			X	
ASBESTOS, TREMOLITE	077536-68-6	X	X			X	
AURAMINE	000492-80-8				X		

SELECT CARCINOGENS (Alphabetical)

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- 2B -- POSSIBLY CARCINOGENIC TO HUMANS

"s" - readily absorbed through the skin

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Revised: 11/2012

CHEMICAL NAME	CAS #	OSHA	IARC			NTP	
			1	2A	2B	A	B
AZACYTIDINE	000320-67-2			X			
AZASERINE	000115-02-6				X		
AZATHIOPRINE	000446-86-6		X			X	
AZIRIDINE "s"	000151-56-4				X		
BARIIUM CHROMATE(VI)	010294-40-3		X			X	
BENZ[a]ANTHRACENE "s"	000056-55-3				X		X
BENZ[c]PHENANTHRENE	000195-19-7				X		
BENZ[j]ACEANTHRYLENE	000202-33-5				X		
BENZAL CHLORIDE (COMBINED EXPOSURE W/ BENZOYL CHLORIDE)	000098-87-3			X			
BENZENE "s"	000071-43-2	X	X			X	
BENZIDINE "s"	000092-87-5	X	X			X	
BENZIDINE-BASED DYES "s"	000092-87-5		X				
BENZO[a]PYRENE	000050-32-8		X				X
BENZO[b]FLUORANTHENE	000205-99-2				X		X
BENZO[j]FLUORANTHENE	000205-82-3				X		X
BENZO[k]FLUORANTHENE	000207-08-9				X		X
BENZOFURAN	000271-89-6				X		
BENZOPHENONE	000119-61-9				X		
BENZOTRICHLORIDE (COMBINED EXPOSURE W/ BENZOYL CHLORIDE) "s"	000098-07-7			X			
BENZOYL CHLORIDE (COMBINED EXPOSURE W/ CHLORO TOLUENES) "s"	000098-88-4			X			
BENZOYLTRICHLORIDE "s"	000098-07-7			X			X
BENZYL CHLORIDE (COMBINED EXPOSURE W/ BENZOYL CHLORIDE)	000100-44-7			X			
BENZYL VIOLET 4B	001694-09-3				X		
BERYLLIUM ALUMINUM ALLOY	012770-50-2		X			X	X
BERYLLIUM ALUMINUM SILICATE	001302-52-9		X			X	
BERYLLIUM AND COMPOUNDS	007440-41-7		X			X	
BERYLLIUM CHLORIDE	007787-47-5		X			X	
BERYLLIUM FLUORIDE	007787-49-7		X			X	
BERYLLIUM HYDROGEN PHOSPHATE (1:1)	013598-15-7		X			X	
BERYLLIUM HYDROXIDE	013327-32-7		X			X	
BERYLLIUM OXIDE	001304-56-9		X			X	
BERYLLIUM OXIDE CARBONATE	066104-24-3		X			X	
BERYLLIUM SULFATE (1:1)	013510-49-1		X			X	
BERYLLIUM SULFATE, TETRAHYDRATE (1:1:4)	007787-56-6		X			X	
BERYLLIUM ZINC SILICATE	039413-47-3		X			X	
BISCHLOROETHYL NITROSOUREA (BCNU)	000154-93-8			X			X
BLEOMYCIN SULFATE	009041-93-4				X		
BLEOMYCIN, HYDROCHLORIDE	067763-87-5				X		
BLEOMYCINS	011056-06-7				X		
BRACKEN FERN	000000-00-0				X		
BROMODICHLOROMETHANE	000075-27-4				X		X
BUTADIENE,1,3-	000106-99-0	X	X			X	
BUTANEDIOL DIMETHANESULPHONATE,1,4- (BUSULFAN)	000055-98-1		X			X	
BUTYLATED HYDROXYANISOLE (BHA)	025013-16-5				X		X
BUTYRIC ACID, 4-(N-BUTYL-N-NITROSAMINO)-	038252-74-3						X
BUTYROLACTONE,BETA-	003068-88-0				X		
CADMIUM AND COMPOUNDS	007440-43-9	X	X			X	
CADMIUM CARBONATE	000513-78-0	X	X			X	
CADMIUM CHLORIDE "s"	010108-64-2	X	X			X	
CADMIUM FLUOBORATE	014486-19-2	X	X			X	
CADMIUM NITRATE	010325-94-7	X	X			X	
CADMIUM OXIDE	001306-19-0	X	X			X	
CADMIUM SULFATE (1:1)	010124-36-4	X	X			X	
CADMIUM SULFIDE	001306-23-6	X	X			X	
CAFFEIC ACID	000331-39-5				X		

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CHEMICAL NAME	CAS #	OSHA	IARC			NTP	
			1	2A	2B	A	B
CALCIUM CHROMATE (VI)	013765-19-0		X			X	
CAPTAFOL	002425-06-1			X		X	
CARBON BLACK	001333-86-4				X		
CARBON TETRACHLORIDE "s"	000056-23-5				X		X
CARRAGEENAN, DEGRADED	009000-07-1				X		
CATECHOL "s"	000120-80-9				X		
CERAMIC FIBERS (RESPIRABLE SIZE)	000000-00-0				X		
CHLORAMBUCIL	000305-03-3		X			X	
CHLORAMPHENICOL	000056-75-7			X		X	
CHLORDANE "s"	000057-74-9				X		
CHLORDANE, ALPHA "s"	005103-71-9				X		
CHLORDANE, BETA "s"	005103-74-2				X		
CHLORDANE, GAMMA "s"	005566-34-7				X		
CHLORENDIC ACID	000115-28-6				X		X
CHLORINATED PARAFFINS (CARBON-12, 60% CHLORINE)	108171-26-2				X		X
CHLORO-2-METHYLPROPENE, 3-	000563-47-3						X
CHLORO-2-METHYLPROPENE, 1-	000513-37-1				X		X
CHLORO-4-(DICHLOROMETHYL)-5-HYDROXY-2(5H)FURANONE, 3-	077439-76-0				X		
CHLOROANILINE, para, "s"	000106-47-8				X		
CHLOROETHYL(2)-3-(4-METHYLCYCLOHEXYL)-1-NITROSOUREA, 1-	013909-09-6		X			X	
CHLOROETHYL(2)-3-CYCLOHEXYL-1-NITROSOUREA, 1- (CCNU)	013010-47-4			X			X
CHLOROFORM	000067-66-3				X		X
CHLOROMETHYL ETHER,BIS- "s"	000542-88-1	X	X			X	
CHLOROMETHYL ETHER,BIS- "s" (TECHNICAL GRADE)	000107-30-2	X	X			X	
CHLORO-ortho-PHENYLENEDIAMINE,4-	000095-83-0				X		X
CHLORO-ortho-TOLUIDINE, para-	000095-69-2			X			X
CHLORO-O-TOLUIDINE HYDROCHLORIDE, 4-	003165-93-3						X
CHLOROPHENOXY HERBICIDES "s"	000000-00-0				X		
CHLOROPRENE "s"	000126-99-8				X		X
CHLOROTHALONIL	001897-45-6				X		
CHLOROZOTOCIN	054749-90-5			X			
CHROMATE(1-),HYDROXYOCTAOXODIZINCATEDI-, POTASSIUM	011103-86-9		X			X	
CHROMIC ACID, DISODIUM SALT "s"	007775-11-3		X			X	
CHROMIUM (III) OXIDE (2:3)	001308-38-9		X			X	
CHROMIUM (VI) CHLORIDE	014986-48-2		X			X	
CHROMIUM (VI) OXIDE (1:3)	001333-82-0		X			X	
CHROMIUM CARBONATE	029689-14-3		X			X	
CHROMIUM PHOSPHATE	007789-04-0		X			X	
CHROMIUM TRIACETATE	001066-30-4		X			X	
CHROMIUM, DICHLORODIOXO-	014977-61-8		X			X	
CHROMIUM, HEXAVALENT AND COMPOUNDS	007440-47-3		X			X	
CHRYSENE	000218-01-9				X		
CI ACID RED 114	006485-34-3				X		
CI BASIC RED 9	000569-61-9				X		X
CI DIRECT BLUE 15	002429-74-5				X		
CICLOSPORIN	079217-60-0		X				
CISPLATIN	015663-27-1			X			X
CITRUS RED NO. 2	006358-53-8				X		
COAL TAR "s"	065996-89-6					X	
COAL TAR DISTILLATE "s"	065996-92-1					X	
COAL-TAR "s"	008007-45-2		X			X	
COAL-TAR PITCHES "s"	065996-93-2		X			X	
COBALT (2+) SULFIDE	001317-42-6				X		
COBALT (II) ACETATE	006147-53-1				X		
COBALT (III) OXIDE	001308-04-9				X		

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CHEMICAL NAME	CAS #	OSHA	IARC			NTP	
			1	2A	2B	A	B
COBALT ACETATE	000071-48-7				X		
COBALT ALLOY, CO, CR	011114-92-4				X	X	
COBALT AND COMPOUNDS	007440-48-4				X		
COBALT CARBONATE	000513-79-1				X		
COBALT CARBONATE, COBALT DIHYDROXIDE (2:3)	012602-23-2				X		
COBALT CARBONYL	017786-31-1				X		
COBALT DINITRATE HEXAHYDRATE	010026-22-9				X		
COBALT HYDROXIDE	001307-86-4				X		
COBALT HYDROXIDE OXIDE	012016-80-7				X		
COBALT MOLYBDATE (VI)	013762-14-6				X		
COBALT NAPHTHATE	061789-51-3				X		
COBALT OXIDE	001308-06-1				X		
COBALT TRIACETATE	000917-69-1				X		
COBALT(2+) OXIDE	001307-96-6				X		
COBALT(II) CHLORIDE	007646-79-9				X		
COBALT(II) CHLORIDE, HEXAHYDRATE	007791-13-1				X		
COBALT(II) HYDROXIDE	021041-93-0				X		
COBALT(II) NITRATE (1:2)	010141-05-6				X		
COBALT(II) SULFATE (1:1)	010124-43-3				X		X
COBALT, (MU(CARBONATO(2--O-O'))DIHYDROXYDI	012069-68-0				X		
COBALT, DI-MU-CARBONYLNONACARBONYL	010210-68-1				X		
COBALT-CHROMIUM-MOLYBDENUM ALLOY	012629-02-6				X	X	
COBALT-CHROMIUM-NICKEL-TUNGSTEN ALLOY	012638-07-2				X	X	
CONESTORAL	000438-67-5					X	
CREOSOTE, WOOD	008021-39-4					X	
CREOSOTES	008001-58-9			X		X	
CRESIDINE, para-	000120-71-8				X		X
CUPFERRON	000135-20-6						X
CYCASIN	014901-08-7				X		
CYCLOPENTA[CD]PYRENE	027208-37-3			X			
CYCLOPHOSPHAMIDE "s"	006055-19-2		X			X	
CYCLOPHOSPHAMIDE "s"	000050-18-0		X				
CYCLOSPORIN "s"	079217-60-0		X				
CYCLOSPORIN A "s"	059865-13-3		X			X	
DACARBAZINE	004342-03-4				X		X
DAUNOMYCIN	020830-81-3				X		
DDT "s"	000050-29-3				X		X
DECABROMOBIPHENYL	013654-09-6						X
DI(2-ETHYLHEXYL)PHTHALATE	000117-81-7				X		X
DIACETYLBENZIDINE,N,N'-	000613-35-4				X		
DIAMINOANISOLE SULPHATE, 2,4-	039156-41-7						X
DIAMINOANISOLE, 2,4- (AND ITS SALTS)	000615-05-4				X		
DIAMINOBENZENE	000136-35-6						X
DIAMINODIPHENYL ETHER, 4,4-	000101-80-4				X		X
DIAMINOTOLUENE, 2,4-	000095-80-7				X		X
DIAZOAMINOBENZENE	000136-35-6						X
DIBENZ[a,h]ACRIDINE	000226-36-8			X			X
DIBENZ[a,h]ANTHRACENE	000053-70-3			X			X
DIBENZ[a,j]ACRIDINE	000224-42-0			X			X
DIBENZ[c,h]ACRIDINE	000224-53-3				X		
DIBENZO[a,e]PYRENE	000192-65-4						X
DIBENZO[a,h]PYRENE	000189-64-0				X		X
DIBENZO[a,i]PYRENE	000189-55-9				X		X
DIBENZO[a,l]PYRENE	000191-30-0			X			X
DIBENZO[c,g]CARBAZOLE, 7H-	000194-59-2			X			X

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			1	2A	2B	A	B
DIBROMO-1-PROPANOL,2,3-	000096-12-9						X
DIBROMO-3-CHLOROPROPANE,1,2- "s" (DBCP)	000096-12-8	X			X		X
DIBROMOACETIC ACID "s"	000631-64-1				X		
DIBROMOACETONITRILE "s"	003252-43-5				X		
DICHLORO-2-PROPANOL, 1,3- "s"	000096-23-1				X		
DICHLORO-4,4'-DIAMINODIPHENYL ETHER, 3,3'	028434-86-8				X		
DICHLOROACETIC ACID "s"	000079-43-6				X		X
DICHLOROBENZIDINE, DIHYDROCHLORIDE, 3,3'	000612-83-9						X
DICHLOROBENZIDINE,3,3'- "s"	000091-94-1	X			X		X
DICHLOROETHANE, 1,2- "s"	000107-06-2				X	X	
DICHLOROMETHANE	000075-09-2				X		X
DICHLOROPROPENE, 1,3- (TECHNICAL-GRADE) "s"	000542-75-6				X		X
DICHLORVOS "s"	000062-73-7				X		
DIEPOXYBUTANE "s"	001464-53-5						X
DIESEL EXHAUST	000000-00-0		X				X
DIESEL FUEL MARINE	000000-00-0				X		
DIETHANOLAMINE "s"	000111-42-2				X		
DIETHYL SULFATE "s"	000064-67-5			X			X
DIETHYLHYDRAZINE, 1,2-	001615-80-1				X		
DIETHYLSTILBOESTROL "s"	000056-53-1		X			X	
DIGLYCIDYL RESORCINOL ETHER	000101-90-6				X		X
DIHYDROSAFROLE	000094-58-6				X		
DIMETHOXYBENZIDINE, 3,3'- (o-DIANISIDINE)	000119-90-4				X		X
DIMETHYL SULFATE	000077-78-1			X			X
DIMETHYLAMINOAZOBENZENE, PARA	000060-11-7	X			X		X
DIMETHYLARSENIC ACID	000075-60-5				X		
DIMETHYLBENZIDINE, 3,3'- (o-TOLIDINE) "s"	000119-93-7				X		X
DIMETHYLCARBAMOYL CHLORIDE	000079-44-7			X			X
DIMETHYLHYDRAZINE, 1,1- "s"	000057-14-7				X		X
DINITROFLUOROANTHENE, 3,7-	105735-71-5				X		
DINITROFLUOROANTHENE, 3,9-	022506-53-2				X		
DINITROPYRENE, 1,3- "s"	075321-20-9				X		
DINITROPYRENE, 1,6-	042397-64-8				X		X
DINITROPYRENE, 1,8-	042397-65-9				X		
DINITROTOLUENE, 2,4- "s"	000121-14-2				X		
DIOXANE, 1,4- "s"	000123-91-1				X		X
DIRECT BLACK 38	001937-37-7					X	
DIRECT BLUE 6	002602-46-2					X	
DISPERSE BLUE 1	002475-45-8				X		X
EPICHLOROHYDRIN "s"	000106-89-8			X			X
EPOXYBUTANE, 1,2-	000106-88-7				X		
ERIONITE	066733-21-9		X			X	
ESTRA-1,2,5(10),7-TETRAEN-17-ONE,3-(SULFOOXY)-,SODIUM SALT	016680-47-0					X	
ETHYL ACRYLATE "s"	000140-88-5				X		
ETHYL METHANESULFONATE	000062-50-0				X		X
ETHYLENE DIBROMIDE "s"	000106-93-4			X			X
ETHYLENE OXIDE	000075-21-8	X	X			X	
ETHYLENE THIOUREA	000096-45-7						X
ETHYL-N-NITROSOUREA,N-	000759-73-9			X			X
ETOPOSIDE	033419-42-0		X				
FORMALDEHYDE "s"	000050-00-0	X	X			X	
FOWLER'S SOLUTION	001332-10-1		X				
FUMONISIN B1	116355-83-0				X		
FURAN "s"	000110-00-9				X		X
FURYLAMIDE	003688-53-7				X		

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			1	2A	2B	A	B
GALLIUM ARSENIDE	001303-00-0		X				
GASOLINE "s"	008006-61-9				X		
GASOLINE, ENGINE EXHAUST FUMES	000000-00-0				X		
GLASS FIBERS, SPECIALTY (E-GLASS, '475')	000000-00-0				X		
GLASSWOOL (RESPIRABLE SIZE)	000000-00-0				X		X
GLU-P-1(2-AMINO-6-METHYLDIPYRIDO[1,2-A:3',2'-D]IMIDZOLE	067730-11-4				X		
GLU-P-2 (2-AMINODIPYRIDO[1,2-a:3',2'-d]IMIDAZOLE	067730-10-3				X		
GLYCIDALDEHYDE "s"	000765-34-4				X		
GLYCIDOL "s"	000556-52-5			X			X
GRISEOFULVIN	000126-07-8				X		
HC BLUE 1	002784-94-3				X		
HEPTACHLOR 's'	000076-44-8				X		
HEPTACHLOR EPOXIDE "s"	001024-57-3				X		
HEXACHLOROBENZENE "s"	000118-74-1				X		X
HEXACHLOROBENZENE, GAMMA "s"	000058-89-9						X
HEXACHLOROCYCLOHEXANES "s"	000000-00-0				X		X
HEXACHLOROETHANE	000067-72-1				X		X
HEXACHLOROHEXANE (ALL ISOMERS)	000608-73-1				X		X
HEXAMETHYLPHOSPHORAMIDE "s"	000680-31-9				X		X
HYDRAZINE "s"	000302-01-2				X		X
HYDRAZINE SULFATE (1:1) "s"	010034-93-2						X
HYDRAZOBENZENE	000122-66-7						X
INDENO[1,2,3-cd]PYRENE	000193-39-5				X		X
INDIUM PHOSPHIDE	022398-80-7			X			
IQ(2-AMINO-3-METHYLIMIDAZO[4,5-f]QUINOLINE)	076180-96-6			X			
IRON-DEXTRAN COMPLEX	009004-66-4				X		X
ISOPRENE	000078-79-5				X		X
KEPONE (CHLORDECONE) "s"	000143-50-0				X		X
LASIOCARPINE	000303-34-4				X		
LEAD ACETATE	000301-04-2			X			X
LEAD ACETATE (II) TRIHYDRATE	006085-56-4			X			X
LEAD AND COMPOUNDS	007439-92-1			X			X
LEAD CHROMATE	007758-97-6		X			X	
LEAD CHROMATE (VI) OXIDE	018454-12-1		X			X	
LEAD PHOSPHATE	007446-27-7			X			X
LINDANE, ALPHA	000319-84-6						X
LINDANE, BETA	000319-85-7						X
MAGENTA (CONTAINING CI BASIC RED 9)	000632-99-5				X		
MeA-ALPHA-C(2-AMINO-3-METHYL-9H-PYRIDO[2,3-b]INDOLE)	068006-83-7				X		
MEDROXYPROGESTERONE ACETATE	000071-58-9				X		
MELPHALAN	000148-82-3		X			X	
MERPHALAN	000531-76-0				X		
METHOXYPSORALEN,5-	000484-20-8			X			
METHYL ISOBUTYL KETONE	000108-10-1				X		
METHYL MERCURY AND COMPOUNDS "s"	022967-92-6				X		
METHYL METHANESULPHONATE	000066-27-3			X			X
METHYL STYRENE, ALPHA	000098-83-9				X		
METHYL-1-NITROANTHRAQUINONE, 2- (UNCERTAIN PURITY)	000129-15-7				X		
METHYLARSONIC ACID	000124-58-3				X		
METHYLAZIRIDINE, 2- (PROPYLENEIMINE) "s"	000075-55-8				X		X
METHYLZOXYMETHANOL ACETATE	000592-62-1				X		
METHYLCHRYSENE, 5-	003697-24-3				X		X
METHYLENE BIS(2-CHLOROANILINE), 4,4- (MOCA) "s"	000101-14-4		X				X
METHYLENE BIS(2-METHYLANILINE), 4,4'-	000838-88-0				X		
METHYLENEBIS(N,N-DIMETHYL)BENZENAMINE	000101-61-1				X		X

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			1	2A	2B	A	B
METHYLENEDIANILINE, 4,4'	000101-77-9	X			X		X
METHYLENEDIANILINE,4,4'- DIHYDROCHLORIDE	013552-44-8						X
METHYLEUGENOL	000093-15-2				X		X
METHYLMIDAZOLE, 2-	000693-98-1				X		
METHYLMIDAZOLE, 4- "s"	000822-36-6				X		
METHYL-N-NITRO-N'-NITROSOGUANIDINE,N- (MNNG)	000070-25-7			X			X
METHYL-N-NITROSOUREA,n-	000684-93-5			X			X
METHYLTHIOURACIL	000056-04-2				X		
METHY-N-NITROSOURETHANE,n-	000615-53-2				X		
METRONIDAZOLE	000443-48-1				X		X
MICHLER'S KETONE	000090-94-8						X
MICROCYSTIN	101043-37-2				X		
MINERAL OILS,UNTREATED AND MILDLY TREATED	000000-00-0		X			X	
MIREX "s"	002385-85-5				X		X
MITOMYCIN C	000050-07-7				X		
MONOCHLORO-1,2-PROPANEDIOL, 3- "s"	000096-24-2				X		
MONOCROTALINE	000315-22-0				X		
MUSTARD GAS "s"	000505-60-2		X			X	
N-[4-(5-NITR-2-FURYL)-2-THIAZOLYL]ACETAMIDE	000531-82-8				X		
NAFENOPIN	003771-19-5				X		
NAPHTHALENE	000091-20-3				X		X
NAPHTHLYAMINE,N,N-BIS(2CHLOROETHYL)-2-	000494-03-1			X			
NAPHTHLYAMINE,2- "s"	000091-59-8	X		X		X	
NAPHTHLYAMINE,ALPHA- "s"	000134-32-7	X					
NICKEL (II) ACETATE (1:2)	000373-02-4			X		X	
NICKEL (II) CARBONATE (1:1)	003333-67-3			X		X	
NICKEL (II) HYDROXIDE	012054-48-7			X		X	
NICKEL (II) OXIDE (1:1)	001313-99-1			X		X	
NICKEL (III) HYDROXIDE	012125-56-3			X		X	
NICKEL BISCYCLOPENDADIENE	001271-28-9			X		X	
NICKEL CARBONYL	013463-39-3			X		X	
NICKEL COMPOUNDS	000000-00-0			X		X	
NICKEL HYDROXIDE	011113-74-9			X		X	
NICKEL SULFIDE (3:2)	012035-72-2			X		X	
NICKEL, METALLIC AND ALLOYS	007440-02-0				X	X	
NIRIDAZOLE	000061-57-4				X		
NITRILOTRIACETIC ACID AND SALTS	000139-13-9				X		X
NITRILOTRIACETIC ACID, DISODIUM SALT	015467-20-6				X		X
NITRILOTRIACETIC ACID, DISODIUM SALT, MONOHYDRATE	023255-03-0				X		X
NITRILOTRIACETIC ACID, MONOSODIUM SALT	018994-66-6				X		X
NITRILOTRIACETIC ACID, TRISODIUM SALT	005064-31-3				X		X
NITRILOTRIACETIC ACID, TRISODIUM SALT, MONOHYDRATE	018662-53-8				X		X
NITROACENAPHTHENE, 5-	000602-87-9				X		
NITROANISOLE, 2-	000091-23-6				X		X
NITROBENZANTHRONE, 3-	017117-34-9				X		
NITROBENZENE "s"	000098-95-3				X		X
NITROBIPHENYL,4-	000092-93-3	X					
NITROCHRYSENE, 6-	007496-02-8			X			X
NITROFEN (TECHNICAL-GRADE) "s"	001836-75-5				X		X
NITROFLUORENE, 2-	000607-57-8				X		
NITROFURFURYLIDIENE(5)-AMINO-2-IMIDAZOLIDINONE, 1-	000555-84-0				X		
NITROGEN MUSTARD "s"	000051-75-2			X			
NITROGEN MUSTARD HYDROCHLORIDE "s"	000055-86-7						X
NITROGEN MUSTARD N-OXIDE	000126-85-2				X		
NITROMETHANE	000075-52-5				X		X

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NITROPROPANE, 2-	000079-46-9				X		X
NITROPYRENE, 1-	005522-43-0			X			X
NITROPYRENE, 4-	057835-92-4				X		X
NITROSOBUTYLBUTANOLAMINE,N-	003817-11-6						X
NITROSODIETHANOLAMINE, N-	001116-54-7				X		X
NITROSODIETHYLAMINE,N-	000055-18-5			X			X
NITROSODIMETHYLAMINE,N-	000062-75-9	X		X			X
NITROSODI-n-BUTYLAMINE, N-	000924-16-3				X		X
NITROSODI-n-PROPYLAMINE, n-	000621-64-7				X		X
NITROSOMETHYLETHYLAMINE, N-	010595-95-6				X		
NITROSOMETHYLVINYLAMINE, N-	004549-40-0				X		X
NITROSOMORPHOLINE, N-	000059-89-2				X		X
NITROSONORNICOTINE, N'	016543-55-8			X			X
NITROSOPIPERIDINE, N-	000100-75-4				X		X
NITROSOPYRROLIDINE, N-	000930-55-2				X		X
NITROSOSACOSINE, N-	013256-22-9				X		X
NITROTOLUENE, 2-	000088-72-2				X		X
N-NITROSOMETHYLAMINO-1-(30PYRIDYL)-1-BUTANONE, 4- (NNK)	064091-91-4			X			X
N-NITROSOMETHYLAMINO-PROPIONITRILE, 3-	060153-49-3				X		
NNK (4-(N-NITROSOMETHYLAMINO)-1-(3-PYRIDYL)-1-BUTANONE)	064091-91-4			X			
NORETHISTERONE	000068-22-4						X
OCHRATOXIN A	000303-47-9				X		X
OCTABROMOBIPHENYL	061288-13-9						X
OIL ORANGE SS	002646-17-5				X		
OXAZEPAM	000604-75-1				X		
OXAZOLIDININE,2,5-(MORPHOLINOMETHYL)-3-[(5-NITROFURYLIDENE)AMINO-	003795-88-8				X		
OXYMETHOLONE	000434-07-1						X
PALYGORSKITE (fibers > 5 micrometers)	012174-11-7				X		
PANFURAN containing DIHYDROX METHYLFURATRIZINE	000794-93-4				X		
PCB (AROCLOR 1254)	011097-69-1				X		X
PCB (AROCLOR 1260)	011096-82-5				X		X
PENTACHLOROBIPHENYL	025429-29-2						X
PENTACHLOROBIPHENYL, 3,4,5,3',4'-(PCB-126)	057465-28-8			X			
PHENACETIN	000062-44-2			X			X
PHENAZOPYRIDINE HYDROCHLORIDE	000136-40-3				X		X
PHENOBARBITAL	000050-06-6				X		
PHENOTHALEIN	000077-09-8						X
PHENOXYBENZAMINE HYDROCHLORIDE	000063-92-3				X		X
PHENYL GLYCIDYL ETHER "s"	000122-60-1				X		
PHENYTOIN	000057-41-0				X		X
PHLP(2-AMINO-1-METHYL-6-PHENYLIMIDAZO[4,5-B]PYRIDINE)	105650-23-5				X		X
PIPERAZINE ESTRONE SULFATE	007280-37-7					X	
POLYBROMINATED BIPHENYL (FF-1)	067774-32-7						X
POLYBROMINATED BIPHENYLS	059536-65-1				X		
POLYCHLORINATED BIPHENYLS	001336-36-3			X			X
POLYCHLOROPHENOLS AND THEIR SODIUM SALTS "s"	000000-00-0				X		X
POLYCYCLIC AROMATIC HYDROCARBONS	000000-00-0						X
PONCEAU 3R	003564-09-8				X		
PONCEAU MX	003761-53-3				X		
POTASSIUM BROMATE	007758-01-2				X		
POTASSIUM CHROMATE (VI)	007789-00-6			X		X	
POTASSIUM DICHROMATE (VI)	007778-50-9			X		X	
PROCARBAZINE HYDROCHLORIDE	000366-70-1			X			X
PROGESTERONE	000057-83-0						X
PROPANE SULTONE, 1,3- "s"	001120-71-4				X		X

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PROPANEDIOL,2,2-BIS-(BROMOETHYL)-1,3-	003296-90-0				X		X
PROPIOLACATONE, BETA	000057-57-8	X			X		X
PROPYLENE OXIDE "s"	000075-56-9				X		X
PROPYLTHIOURACIL	000051-52-5				X		X
QUARTZ [SILICA, CRYSTALLINE (RESPIRABLE)]	014808-60-7			X		X	
RADON AND ITS DECAY PRODUCTS	010043-92-2		X			X	
REFRACTORY CERAMIC FIBERS	000000-00-0				X		
RESERPINE	000050-55-5						X
RIDDELLINE	023246-96-0				X		X
ROCKWOOL	000000-00-0				X		
SACCHARIN	000081-07-2				X		
SACCHARIN, SODIUM SALT	000128-44-9				X		
SAFROLE	000094-59-7				X		X
SENARMONITE	012412-52-1				X		
SHALE-OILS "s"	068308-34-9		X				
SILICA, CRYSTALLINE (RESPIRABLE)	000000-00-0		X			X	
SILICA, CRYSTALLINE CRISTOBALITE	014464-46-1		X			X	
SILICA, CRYSTALLINE TRIDYMITE	015468-32-3			X		X	
SILICA, CRYSTALLINE TRIPOLI	001317-95-9			X		X	
SILICIC ACID BERYLLIUM SALT	015191-85-2		X				
SODIUM DICHROMATE (VI) "s"	010588-01-9		X			X	
SODIUM ortho-PHENYLPHENATE	000132-27-4				X		
SOOTS,TARS, MINERAL OILS	000000-00-0					X	
STERIGMATOCYSTIN	010048-13-2				X		
STREPTOZOTOCIN	018883-66-4				X		
STRONTIUM CHROMATE (VI)	007789-06-2		X			X	
STYRENE "s"	000100-42-5				X		X
STYRENE-7,8-OXIDE "s"	000096-09-3			X			
SULFALLATE "s"	000095-06-7				X	X	
SULFUR TRIOXIDE	007446-11-9		X				
SULFURIC ACID	007664-93-9		X				
SULFURIC ACID, DIISOPROPYL ESTER "s"	002973-10-6				X		
SULFURIC ACID, FUMING, MISTS	008014-95-7		X				
TALC CONTAINING ASBESTIFORM FIBRES	014807-96-6		X				
TAMOXIFEN	010540-29-1					X	
TENIPOSIDE	029767-20-2				X		
TETRACHLORODIBENZO-para-DIOXIN, 2,3,7,8- (TCDD) "s"	001746-01-6		X			X	
TETRACHLOROETHYLENE "s"	000127-18-4				X		X
TETRAETHYL LEAD "s"	000078-00-2				X		
TETRAFLUOROETHYLENE	000116-14-3					X	
TETRANITROMETHANE	000509-14-8				X		X
THIAZOLE,2(2-FORMLYLHYDRAZINO)-4-(5-NITRO-2-FURYL)	003570-75-0				X		
THIOACETAMIDE	000062-55-5				X		X
THIODIANILINE, 4,4'-	000139-65-1				X		X
THIOTEPA	000052-24-4		X			X	
THIOURACIL	000141-90-2				X		
THIOUREA	000062-56-6				X		X
THORIUM DIOXIDE	001314-20-1					X	
TITANIUM DIOXIDE	013463-67-7				X		
TOBACCO PRODUCTS, SMOKELESS	000000-00-0		X				
TOBACCO SMOKE	000000-00-0		X			X	
TOLUENE DIISOCYANATE, 1,3-	026471-62-5				X		X
TOLUENE DIISOCYANATE, 2,4-	000584-84-9				X		
TOLUENE DIISOCYANATE, 2,6-	000091-08-7				X		
TOLUIDINE HYDROCHLORIDE, O-	000636-21-5						X

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			1	2A	2B	A	B
TOLUIDINE, ORTHO- "s"	000095-53-4		X				X
TOXAPHENE (POLYCHLORINATED CAMPHENES) "s"	008001-35-2				X		X
TREOSULPHAN	000299-75-2		X				
TRICHLOROETHYLENE	000079-01-6			X			X
TRICHLOROMETHINE	000817-09-4				X		
TRICHLOROPHENOL, 2,4,6- "s"	000088-06-2						X
TRICHLOROPROPANE, 1,2,3- "s"	000096-18-4			X			X
TRIS (2,3-DIBROMOPROPYL)PHOSPHATE, (TRIS) "s"	000126-72-7			X			X
TRP-P-1(3-AMINO-1,4-DIMETHYL-5H-PYRIDO[4,3-b]INDOLE)	062450-06-0				X		
TRP-P-2(3-AMINO-1-METHYL-5H-PYRIDO[4,3-b]INDOLE)	062450-07-1				X		
TRYPAN BLUE	000072-57-1				X		
URACIL MUSTARD	000066-75-1				X		
URETHANE	000051-79-6			X			X
VINYL ACETATE	000108-05-4				X		
VINYL BROMIDE	000593-60-2			X			X
VINYL CHLORIDE	000075-01-4	X		X			X
VINYL FLUORIDE	000075-02-5			X			X
VINYL-1-CYCLOHEXENE DIEPOXIDE, 4- "s"	000106-87-6				X		X
VINYLCYCLOHEXENE, 4-	000100-40-3				X		
WELDING FUMES	000000-00-0				X		X
WOOD DUST	013983-17-0			X			X
XYLIDINE "s"	000087-62-7				X		
ZALCITABINE	007481-89-2				X		
ZIDOVUDINE(AZT)	030516-87-1				X		
ZINC CHROMATE	013530-65-9			X			X
ZINC CHROMATE (VI) HYDROXIDE	001300-73-8			X			X
ZINC CHROMATE (VI) HYDROXIDE	015930-94-6			X			X
ZIRCONIUM TETRACHLORIDE	010026-11-6				X		

REFERENCE:

International Agency for Research on Cancer, 2012. *Overall Evaluations of Carcinogenicity to Humans. (Monographs Volumes 1-106)*

Sax, Richard, 1999. *Dangerous Properties of Industrial Materials.*

National Toxicology Program, 2011. *12th Annual Report on Carcinogens.*

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			1	2A	2B	A	B
ACID MISTS, STRONG INORGANIC	000000-00-0			X			
ARECA NUT	000000-00-0			X			
ARISTOLOCHIC ACIDS	000000-00-0			X		X	
BRACKEN FERN	000000-00-0				X		
CERAMIC FIBERS (RESPIRABLE SIZE)	000000-00-0				X		
CHLOROPHENOXY HERBICIDES "s"	000000-00-0				X		
DIESEL EXHAUST	000000-00-0		X				X
DIESEL FUEL MARINE	000000-00-0				X		
GASOLINE, ENGINE EXHAUST FUMES	000000-00-0				X		
GLASS FIBERS, SPECIALTY (E-GLASS, '475')	000000-00-0				X		
GLASSWOOL (RESPIRABLE SIZE)	000000-00-0				X		X
HEXACHLOROCYCLOHEXANES "s"	000000-00-0				X		X
MINERAL OILS, UNTREATED AND MILDLY TREATED	000000-00-0		X			X	
NICKEL COMPOUNDS	000000-00-0		X			X	
POLYCHLOROPHENOLS AND THEIR SODIUM SALTS "s"	000000-00-0				X		X
POLYCYCLIC AROMATIC HYDROCARBONS	000000-00-0						X
REFRACTORY CERAMIC FIBERS	000000-00-0				X		
ROCKWOOL	000000-00-0				X		
SILICA, CRYSTALLINE (RESPIRABLE)	000000-00-0		X			X	
SOOTS, TARS, MINERAL OILS	000000-00-0					X	
TOBACCO PRODUCTS, SMOKELESS	000000-00-0		X				
TOBACCO SMOKE	000000-00-0		X			X	
WELDING FUMES	000000-00-0				X	X	
FORMALDEHYDE "s"	000050-00-0	X	X			X	
PHENOBARBITAL	000050-06-6				X		
MITOMYCIN C	000050-07-7				X		
CYCLOPHOSPHAMIDE "s"	000050-18-0		X				
DDT "s"	000050-29-3				X		X
BENZO[a]PYRENE	000050-32-8		X				X
RESERPINE	000050-55-5						X
PROPYLTHIOURACIL	000051-52-5				X		X
NITROGEN MUSTARD "s"	000051-75-2			X			
URETHANE	000051-79-6			X			X
THIOTEPA	000052-24-4		X			X	
DIBENZ[a,h]ANTHRACENE	000053-70-3			X			X
ACETYLAMINOFLOURENE, 2-	000053-96-3	X					X
NITROSODIETHYLAMINE, N-	000055-18-5			X			X
NITROGEN MUSTARD HYDROCHLORIDE "s"	000055-86-7						X
BUTANEDIOL DIMETHANESULPHONATE, 1,4- (BUSULFAN)	000055-98-1		X			X	
METHYLTHIOURACIL	000056-04-2				X		
CARBON TETRACHLORIDE "s"	000056-23-5				X		X
DIETHYLSTILBOESTROL "s"	000056-53-1		X			X	
BENZ[a]ANTHRACENE "s"	000056-55-3				X		X
CHLORAMPHENICOL	000056-75-7			X		X	
DIMETHYLHYDRAZINE, 1,1- "s"	000057-14-7				X		X
PHENYTOIN	000057-41-0				X		X
PROPIOLACATONE, BETA	000057-57-8	X			X		X
CHLORDANE "s"	000057-74-9				X		
PROGESTERONE	000057-83-0						X
HEXACHLOROBENZENE, GAMMA "s"	000058-89-9						X
NITROSOMORPHOLINE, N-	000059-89-2				X		X
AMINOAZOBENZENE, para-	000060-09-3				X		
DIMETHYLAMINOAZOBENZENE, PARA	000060-11-7	X			X		X

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			1	2A	2B	A	B
ACETAMIDE	000060-35-5				X		
NIRIDAZOLE	000061-57-4				X		
AMITROLE	000061-82-5						X
PHENACETIN	000062-44-2			X			X
ETHYL METHANESULFONATE	000062-50-0				X		X
THIOACETAMIDE	000062-55-5				X		X
THIOUREA	000062-56-6				X		X
DICHLORVOS "s"	000062-73-7				X		
NITROSODIMETHYLAMINE,N-	000062-75-9	X		X			X
PHENOXYBENZAMINE HYDROCHLORIDE	000063-92-3				X		X
DIETHYL SULFATE "s"	000064-67-5				X		X
METHYL METHANESULPHONATE	000066-27-3				X		X
URACIL MUSTARD	000066-75-1				X		
CHLOROFORM	000067-66-3				X		X
HEXACHLOROETHANE	000067-72-1				X		X
NORETHISTERONE	000068-22-4						X
METHYL-N-NITRO-N'-NITROSGUANIDINE,N- (MNNG)	000070-25-7				X		X
BENZENE "s"	000071-43-2	X		X		X	
COBALT ACETATE	000071-48-7				X		
MEDROXYPROGESTERONE ACETATE	000071-58-9				X		
TRYPAN BLUE	000072-57-1				X		
VINYL CHLORIDE	000075-01-4	X		X		X	
VINYL FLUORIDE	000075-02-5				X		X
ACETALDEHYDE	000075-07-0				X		X
DICHLOROMETHANE	000075-09-2				X		X
ETHYLENE OXIDE	000075-21-8	X		X		X	
BROMODICHLOROMETHANE	000075-27-4				X		X
NITROMETHANE	000075-52-5				X		X
METHYLAZIRIDINE, 2- (PROPYLENEIMINE) "s"	000075-55-8				X		X
PROPYLENE OXIDE "s"	000075-56-9				X		X
DIMETHYLARSENIC ACID	000075-60-5				X		
HEPTACHLOR "s"	000076-44-8				X		
PHENOTHALEIN	000077-09-8						X
DIMETHYL SULFATE	000077-78-1				X		X
TETRAETHYL LEAD "s"	000078-00-2				X		
ISOPRENE	000078-79-5				X		X
TRICHLOROETHYLENE	000079-01-6				X		X
ACRYLAMIDE "s"	000079-06-1				X		X
DICHLOROACETIC ACID "s"	000079-43-6				X		X
DIMETHYLCARBAMOYL CHLORIDE	000079-44-7				X		X
NITROPROPANE, 2-	000079-46-9				X		X
SACCHARIN	000081-07-2				X		
AMINO-2,4-DIBROMOANTHRAQUINONE,1-	000081-49-2				X		X
AMINO-2-METHYLANTHRAQUINONE, 1-	000082-28-0						X
XYLIDINE "s"	000087-62-7				X		
TRICHLOROPHENOL, 2,4,6- "s"	000088-06-2						X
NITROTOLUENE, 2-	000088-72-2				X		X
ANISIDINE, ortho- "s"	000090-04-0				X		
MICHLER'S KETONE	000090-94-8						X
TOLUENE DIISOCYANATE, 2,6-	000091-08-7				X		
NAPHTHALENE	000091-20-3				X		X
NITROANISOLE, 2-	000091-23-6				X		X
NAPHTHYLAMINE,2- "s"	000091-59-8	X		X		X	
DICHLOROBENZIDINE,3,3'- "s"	000091-94-1	X			X		X
AMINOBIHENYL,4- "s"	000092-67-1	X		X		X	

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			1	2A	2B	A	B
BENZIDINE "s"	000092-87-5	X	X			X	
BENZIDINE-BASED DYES "s"	000092-87-5		X				
NITROBIPHENYL,4-	000092-93-3	X					
METHYLEUGENOL	000093-15-2				X		X
DIHYDROSAFROLE	000094-58-6				X		
SAFROLE	000094-59-7				X		X
SULFALLATE "s"	000095-06-7				X	X	
TOLUIDINE, ORTHO- "s"	000095-53-4		X				X
CHLORO-ortho-TOLUIDINE, para-	000095-69-2			X			X
DIAMINOTOLUENE, 2,4-	000095-80-7				X		X
CHLORO-ortho-PHENYLENEDIAMINE,4-	000095-83-0				X		X
STYRENE-7,8-OXIDE "s"	000096-09-3			X			
DIBROMO-3-CHLOROPROPANE,1,2- "s" (DBCP)	000096-12-8	X			X		X
DIBROMO-1-PROPANOL,2,3-	000096-12-9						X
TRICHLOROPROPANE, 1,2,3- "s"	000096-18-4			X			X
DICHLORO-2-PROPANOL, 1,3- "s"	000096-23-1				X		
MONOCHLORO-1,2-PROPANEDIOL, 3- "s"	000096-24-2				X		
ETHYLENE THIOUREA	000096-45-7						X
ARSONIC ACID	000097-44-9	X	X			X	
AMINOAZOTOLUENE,ortho-	000097-56-3				X		X
BENZOTRICHLORIDE (COMBINED EXPOSURE W/ BENZOYL CHLORIDE) "s"	000098-07-7			X			
BENZOYLTRICHLORIDE "s"	000098-07-7			X			X
METHYL STYRENE, ALPHA	000098-83-9				X		
BENZAL CHLORIDE (COMBINED EXPOSURE W/ BENZOYL CHLORIDE)	000098-87-3			X			
BENZOYL CHLORIDE (COMBINED EXPOSURE W/ CHLORO TOLUENES) "s"	000098-88-4			X			
NITROBENZENE "s"	000098-95-3				X		X
VINYLCYCLOHEXENE, 4-	000100-40-3				X		
STYRENE "s"	000100-42-5				X		X
BENZYL CHLORIDE (COMBINED EXPOSURE W/ BENZOYL CHLORIDE)	000100-44-7			X			
NITROSOPIPERIDINE, N-	000100-75-4				X		X
METHYLENE BIS(2-CHLOROANILINE), 4,4- (MOCA) "s"	000101-14-4			X			X
METHYLENEBIS(N,N-DIMETHYL)BENZENAMINE	000101-61-1				X		X
METHYLENEDIANILINE, 4,4'	000101-77-9	X			X		X
DIAMINODIPHENYL ETHER, 4,4-	000101-80-4				X		X
DIGLYCIDYL RESORCINOL ETHER	000101-90-6				X		X
CHLOROANILINE, para, "s"	000106-47-8				X		
VINYL-1-CYCLOHEXENE DIEPOXIDE, 4- "s"	000106-87-6				X		X
EPOXYBUTANE, 1,2-	000106-88-7				X		
EPICHLOROHYDRIN "s"	000106-89-8			X			X
ETHYLENE DIBROMIDE "s"	000106-93-4			X			X
BUTADIENE,1,3-	000106-99-0	X	X			X	
DICHLOROETHANE, 1,2- "s"	000107-06-2				X	X	
ACRYLONITRILE "s"	000107-13-1	X			X		X
CHLOROMETHYL ETHER,BIS- "s" (TECHNICAL GRADE)	000107-30-2	X	X			X	
VINYL ACETATE	000108-05-4				X		
METHYL ISOBUTYL KETONE	000108-10-1				X		
FURAN "s"	000110-00-9				X		X
DIETHANOLAMINE "s"	000111-42-2				X		
AZASERINE	000115-02-6				X		
CHLORENDIC ACID	000115-28-6				X		X
TETRAFLUOROETHYLENE	000116-14-3					X	
ANTHRAQUINONE, 1,8-DIHYDROXY	000117-10-2				X		X
AMINOANTHRAQUINONE, 2-	000117-79-3						X
DI(2-ETHYLHEXYL)PHTHALATE	000117-81-7				X		X
HEXACHLOROBENZENE "s"	000118-74-1				X		X

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BENZOPHENONE	000119-61-9				X		
DIMETHOXYBENZIDINE, 3,3'- (o-DIANISIDINE)	000119-90-4				X		X
DIMETHYLBENZIDINE, 3,3'- (o-TOLIDINE) "s"	000119-93-7				X		X
CRESIDINE, para-	000120-71-8				X		X
CATECHOL "s"	000120-80-9				X		
DINITROTOLUENE, 2,4- "s"	000121-14-2				X		
PHENYL GLYCIDYL ETHER "s"	000122-60-1				X		
HYDRAZOBENZENE	000122-66-7						X
DIOXANE, 1,4- "s"	000123-91-1				X		X
METHYLARSONIC ACID	000124-58-3				X		
GRISEOFULVIN	000126-07-8				X		
TRIS (2,3-DIBROMOPROPYL)PHOSPHATE, (TRIS) "s"	000126-72-7			X			X
NITROGEN MUSTARD N-OXIDE	000126-85-2				X		
CHLOROPRENE "s"	000126-99-8				X		X
TETRACHLOROETHYLENE "s"	000127-18-4				X		X
SACCHARIN, SODIUM SALT	000128-44-9				X		
METHYL-1-NITROANTHRAQUINONE, 2- (UNCERTAIN PURITY)	000129-15-7				X		
SODIUM ortho-PHENYLPHENATE	000132-27-4				X		
ANISIDINE HYDROCHLORIDE, o-	000134-29-2						X
NAPHTHYLAMINE,ALPHA- "s"	000134-32-7	X					
CUPFERRON	000135-20-6						X
DIAMINO BENZENE	000136-35-6						X
DIAZOAMINO BENZENE	000136-35-6						X
PHENAZOPYRIDINE HYDROCHLORIDE	000136-40-3				X		X
NITRILOTRIACETIC ACID AND SALTS	000139-13-9				X		X
THIODIANILINE, 4,4'-	000139-65-1				X		X
ARAMITE	000140-57-8				X		
ETHYL ACRYLATE "s"	000140-88-5				X		
THIOURACIL	000141-90-2				X		
KEPONE (CHLORDECONE) "s"	000143-50-0				X		X
MELPHALAN	000148-82-3		X			X	
AZIRIDINE "s"	000151-56-4				X		
BISCHLOROETHYL NITROSOUREA (BCNU)	000154-93-8			X			X
DIBENZO[a,i]PYRENE	000189-55-9				X		X
DIBENZO[a,h]PYRENE	000189-64-0				X		X
DIBENZO[a,l]PYRENE	000191-30-0			X			X
DIBENZO[a,e]PYRENE	000192-65-4						X
INDENO[1,2,3-cd]PYRENE	000193-39-5				X		X
DIBENZO[c,g]CARBAZOLE, 7H-	000194-59-2			X			X
BENZ[c]PHENANTHRENE	000195-19-7				X		
BENZ[j]ACEANTHRYLENE	000202-33-5				X		
BENZO[j]FLUORANTHENE	000205-82-3				X		X
BENZO[b]FLUORANTHENE	000205-99-2				X		X
BENZO[k]FLUORANTHENE	000207-08-9				X		X
CHRYSENE	000218-01-9				X		
DIBENZ[a,j]ACRIDINE	000224-42-0			X			X
DIBENZ[c,h]ACRIDINE	000224-53-3				X		
DIBENZ[a,h]ACRIDINE	000226-36-8			X			X
BENZOFURAN	000271-89-6				X		
TREOSULPHAN	000299-75-2		X				
LEAD ACETATE	000301-04-2			X			X
HYDRAZINE "s"	000302-01-2				X		X
LASIOCARPINE	000303-34-4				X		
OCHRATOXIN A	000303-47-9				X		X
CHLORAMBUCIL	000305-03-3		X			X	

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			1	2A	2B	A	B
MONOCROTALINE	000315-22-0				X		
LINDANE, ALPHA	000319-84-6						X
LINDANE, BETA	000319-85-7						X
AZACYTIDINE	000320-67-2			X			
CAFFEIC ACID	000331-39-5				X		
PROCARBAZINE HYDROCHLORIDE	000366-70-1			X			X
NICKEL (II) ACETATE (1:2)	000373-02-4		X			X	
OXYMETHOLONE	000434-07-1						X
CONESTORAL	000438-67-5					X	
METRONIDAZOLE	000443-48-1				X		X
AZATHIOPRINE	000446-86-6		X			X	
METHOXYPSORALEN,5-AURAMINE	000484-20-8			X			
NAPHTHLYAMINE,N,N-BIS(2CHLOROETHYL)-2-MUSTARD GAS "s"	000494-03-1		X				
000505-60-2			X			X	
TETRANITROMETHANE	000509-14-8				X		X
CHLORO-2-METHYLPROPENE,1-CADMIUM CARBONATE	000513-37-1				X		X
000513-78-0		X	X			X	
COBALT CARBONATE	000513-79-1				X		
MERPHALAN	000531-76-0				X		
N-[4-(5-NITR-2-FURYL)-2-THIAZOLYL]ACETAMIDE	000531-82-8				X		
DICHLOROPROPENE, 1,3- (TECHNICAL-GRADE) "s"	000542-75-6				X		X
CHLOROMETHYL ETHER,BIS- "s"	000542-88-1	X	X			X	
NITROFURFURYLIDIENE(5)-AMINO-2-IMIDAZOLIDINONE, 1-GLYCIDOL "s"	000555-84-0				X		
000556-52-5			X				X
CHLORO-2-METHYLPROPENE, 3-CI BASIC RED 9	000563-47-3						X
000569-61-9					X		X
TOLUENE DIISOCYANATE, 2,4-METHYLAZOXYMETHANOL ACETATE	000584-84-9				X		
000592-62-1					X		
VINYL BROMIDE	000593-60-2			X		X	
NITROACENAPHTHENE, 5-OXAZEPAM	000602-87-9				X		
000604-75-1					X		
NITROFLUORENE, 2-HEXACHLOROHEXANE (ALL ISOMERS)	000607-57-8				X		
000608-73-1					X		X
DICHLOROBENZIDINE, DIHYDROCHLORIDE, 3,3'-DIACETYL BENZIDINE,N,N'	000612-83-9						X
000613-35-4					X		
DIAMINOANISOLE, 2,4- (AND ITS SALTS)	000615-05-4				X		
METHY-N-NITROSOURETHANE,n-NITROSODI-n-PROPYLAMINE, n-DIBROMOACETIC ACID "s"	000615-53-2				X		
000621-64-7					X		X
000631-64-1					X		
MAGENTA (CONTAINING CI BASIC RED 9)	000632-99-5				X		
TOLUIDINE HYDROCHLORIDE, O-HEXAMETHYLPHOSPHORAMIDE "s"	000636-21-5						X
000680-31-9					X		X
METHYL-N-NITROSOUREA,n-METHYLIMIDAZOLE, 2-AMINO-5-(5-NITRO-2-FURYL)-1,3,4-THIADIAZOLE, 2-ETHYL-N-NITROSOUREA,N-GLYCIDALDEHYDE "s"	000684-93-5			X			X
000693-98-1					X		
000712-68-5					X		
000759-73-9				X			X
000765-34-4					X		
PANFURAN containing DIHYDROX METHYLFURATRIZINE	000794-93-4				X		
TRICHLOROMETHINE	000817-09-4				X		
METHYLIMIDAZOLE, 4- "s"	000822-36-6				X		
METHYLENE BIS(2-METHYLANILINE), 4,4'-COBALT TRIACETATE	000838-88-0				X		
000917-69-1					X		
NITROSODI-n-BUTYLAMINE, N-NITROSOPYRROLIDINE, N-	000924-16-3				X		X
000930-55-2					X		X

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			1	2A	2B	A	B
HEPTACHLOR EPOXIDE "s"	001024-57-3				X		
CHROMIUM TRIACETATE	001066-30-4		X			X	
NITROSODIETHANOLAMINE, N-	001116-54-7				X		X
PROPANE SULTONE, 1,3- "s"	001120-71-4				X		X
AFLATOXIN B1	001162-65-8		X				
NICKEL BISCYCLOPENDADIENE	001271-28-9		X			X	
ZINC CHROMATE (VI) HYDROXIDE	001300-73-8		X			X	
BERYLLIUM ALUMINUM SILICATE	001302-52-9		X			X	
GALLIUM ARSENIDE	001303-00-0		X				
ARSENIC PENTOXIDE	001303-28-2	X	X			X	
BERYLLIUM OXIDE	001304-56-9		X			X	
CADMIUM OXIDE	001306-19-0	X	X			X	
CADMIUM SULFIDE	001306-23-6	X	X			X	
COBALT HYDROXIDE	001307-86-4				X		
COBALT(2+) OXIDE	001307-96-6				X		
COBALT (III) OXIDE	001308-04-9				X		
COBALT OXIDE	001308-06-1				X		
CHROMIUM (III) OXIDE (2:3)	001308-38-9		X			X	
NICKEL (II) OXIDE (1:1)	001313-99-1		X			X	
THORIUM DIOXIDE	001314-20-1					X	
COBALT (2+) SULFIDE	001317-42-6				X		
SILICA, CRYSTALLINE TRIPOLI	001317-95-9			X		X	
ARSENIC TRIOXIDE	001327-53-3	X	X			X	
FOWLER'S SOLUTION	001332-10-1		X				
ASBESTOS	001332-21-4	X	X			X	
CHROMIUM (VI) OXIDE (1:3)	001333-82-0		X			X	
CARBON BLACK	001333-86-4				X		
POLYCHLORINATED BIPHENYLS	001336-36-3			X			X
AFLATOXINS	001402-68-2		X			X	
DIEPOXYBUTANE "s"	001464-53-5						X
DIETHYLHYDRAZINE, 1,2-	001615-80-1				X		
BENZYL VIOLET 4B	001694-09-3				X		
TETRACHLORODIBENZO-para-DIOXIN, 2,3,7,8- (TCDD) "s"	001746-01-6		X			X	
NITROFEN (TECHNICAL-GRADE) "s"	001836-75-5				X		X
CHLOROTHALONIL	001897-45-6				X		
DIRECT BLACK 38	001937-37-7					X	
MIREX "s"	002385-85-5				X		X
CAPTAFOFOL	002425-06-1			X		X	
CI DIRECT BLUE 15	002429-74-5				X		
DISPERSE BLUE 1	002475-45-8				X		X
DIRECT BLUE 6	002602-46-2					X	
OIL ORANGE SS	002646-17-5				X		
HC BLUE 1	002784-94-3				X		
SULFURIC ACID, DIISOPROPYL ESTER "s"	002973-10-6				X		
BUTYROLACTONE,BETA-	003068-88-0				X		
CHLORO-O-TOLUIDINE HYDROCHLORIDE, 4-	003165-93-3						X
DIBROMOACETONITRILE "s"	003252-43-5				X		
PROPANEDIOL,2,2-BIS-(BROMOETHYL)-1,3-	003296-90-0				X		X
NICKEL (II) CARBONATE (1:1)	003333-67-3		X			X	
PONCEAU 3R	003564-09-8				X		
THIAZOLE,2(2-FORMLYLHYDRAZINO)-4-(5-NITRO-2-FURYL)	003570-75-0				X		
FURYLAMIDE	003688-53-7				X		
METHYLCHRYSENE, 5-	003697-24-3				X		X
PONCEAU MX	003761-53-3				X		
NAFENOPIN	003771-19-5				X		

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			1	2A	2B	A	B
OXAZOLIDININE,2,5-(MORPHOLINOMETHYL)-3-[(5-NITROFURYLIDENE)AMINO-	003795-88-8				X		
NITROSOBUTYLBUTANOLAMINE,N-	003817-11-6						X
DACARBAZINE	004342-03-4				X		X
NITROSOMETHYLVINYLAMINE, N-	004549-40-0				X		X
NITRILOTRIACETIC ACID, TRISODIUM SALT	005064-31-3				X		X
CHLORDANE, ALPHA "s"	005103-71-9				X		
CHLORDANE, BETA "s"	005103-74-2				X		
NITROPYRENE, 1-	005522-43-0		X				X
CHLORDANE, GAMMA "s"	005566-34-7				X		
CYCLOPHOSPHAMIDE "s"	006055-19-2		X			X	
LEAD ACETATE (II) TRIHYDRATE	006085-56-4			X			X
COBALT (II) ACETATE	006147-53-1				X		
CITRUS RED NO. 2	006358-53-8				X		
CI ACID RED 114	006485-34-3				X		
AFLATOXIN M1	006795-23-9				X		
PIPERAZINE ESTRONE SULFATE	007280-37-7					X	
LEAD AND COMPOUNDS	007439-92-1			X			X
NICKEL, METALLIC AND ALLOYS	007440-02-0				X		X
ARSENIC AND COMPOUNDS	007440-38-2	X	X				X
BERYLLIUM AND COMPOUNDS	007440-41-7		X				X
CADMIUM AND COMPOUNDS	007440-43-9	X	X				X
CHROMIUM, HEXAVALENT AND COMPOUNDS	007440-47-3		X				X
COBALT AND COMPOUNDS	007440-48-4				X		
SULFUR TRIOXIDE	007446-11-9		X				
LEAD PHOSPHATE	007446-27-7			X			X
ZALCITABINE	007481-89-2				X		
NITROCHRYSENE, 6-	007496-02-8			X			X
ARSENIC ACID, SODIUM SALT	007631-89-2	X	X			X	
COBALT(II) CHLORIDE	007646-79-9				X		
SULFURIC ACID	007664-93-9		X				
POTASSIUM BROMATE	007758-01-2				X		
LEAD CHROMATE	007758-97-6		X			X	
CHROMIC ACID, DISODIUM SALT "s"	007775-11-3		X			X	
ARSENIC ACID	007778-39-4	X	X			X	
ARSENIC ACID, CALCIUM SALT (2:3)	007778-44-1	X	X			X	
POTASSIUM DICHROMATE (VI)	007778-50-9		X			X	
ARSENIC TRICHLORIDE "s"	007784-34-1	X	X			X	
ARSENIC PENTAFLUORIDE	007784-36-3	X	X			X	
ARSENIC ACID, LEAD(2+) SALT (1:1)	007784-40-9	X	X			X	
ARSENIC ACID, MONOPOTASSIUM SALT	007784-41-0	X	X			X	
ARSENIOS ACID, MONOSODIUM SALT	007784-46-5	X	X			X	
BERYLLIUM CHLORIDE	007787-47-5		X			X	
BERYLLIUM FLUORIDE	007787-49-7		X			X	
BERYLLIUM SULFATE, TETRAHYDRATE (1:1:4)	007787-56-6		X			X	
POTASSIUM CHROMATE (VI)	007789-00-6		X			X	
CHROMIUM PHOSPHATE	007789-04-0		X			X	
STRONTIUM CHROMATE (VI)	007789-06-2		X			X	
AMMONIUM DICHROMATE (VI) "s"	007789-09-5		X			X	
COBALT(II) CHLORIDE, HEXAHYDRATE	007791-13-1				X		
TOXAPHENE (POLYCHLORINATED CAMPHENES) "s"	008001-35-2				X		X
CREOSOTES	008001-58-9			X		X	
GASOLINE "s"	008006-61-9				X		
COAL-TAR "s"	008007-45-2		X			X	
SULFURIC ACID, FUMING, MISTS	008014-95-7		X				
CREOSOTE, WOOD	008021-39-4					X	

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CARRAGEENAN, DEGRADED	009000-07-1				X		
IRON-DEXTRAN COMPLEX	009004-66-4				X		X
BLEOMYCIN SULFATE	009041-93-4				X		
ZIRCONIUM TETRACHLORIDE	010026-11-6			X			
COBALT DINITRATE HEXAHYDRATE	010026-22-9				X		
HYDRAZINE SULFATE (1:1) "s"	010034-93-2						X
RADON AND ITS DECAY PRODUCTS	010043-92-2		X			X	
STERIGMATOCYSTIN	010048-13-2				X		
ARSENIC ACID, DISODIUM SALT, HEPTAHYDRATE	010048-95-0	X	X			X	
CADMIUM CHLORIDE "s"	010108-64-2	X	X			X	
CADMIUM SULFATE (1:1)	010124-36-4	X	X			X	
COBALT(II) SULFATE (1:1)	010124-43-3				X		X
ARSENEOUS ACID, POTASSIUM SALT	010124-50-2	X	X			X	
COBALT(II) NITRATE (1:2)	010141-05-6				X		
COBALT, DI-MU-CARBONYLNONACARBONYL	010210-68-1				X		
BARIUM CHROMATE(VI)	010294-40-3		X			X	
CADMIUM NITRATE	010325-94-7	X	X			X	
TAMOXIFEN	010540-29-1					X	
SODIUM DICHROMATE (VI) "s"	010588-01-9		X			X	
NITROSOMETHYLETHYLAMINE, N-	010595-95-6				X		
BLEOMYCINS	011056-06-7				X		
PCB (AROCLOR 1260)	011096-82-5			X			X
PCB (AROCLOR 1254)	011097-69-1			X			X
CHROMATE(1-),HYDROXYOCTAOXODIZINCATEDI-, POTASSIUM	011103-86-9		X			X	
NICKEL HYDROXIDE	011113-74-9		X			X	
COBALT ALLOY, CO, CR	011114-92-4				X	X	
ASBESTOS, CROCIDOLITE	012001-28-4	X	X			X	
ASBESTOS, CHRYSOTILE	012001-29-5	X	X			X	
COBALT HYDROXIDE OXIDE	012016-80-7				X		
NICKEL SULFIDE (3:2)	012035-72-2		X			X	
NICKEL (II) HYDROXIDE	012054-48-7		X			X	
COBALT, (MU(CARBONATO(2-)-O-O'))DIHYDROXYDI	012069-68-0				X		
NICKEL (III) HYDROXIDE	012125-56-3		X			X	
ASBESTOS, AMOSITE	012172-73-5	X	X			X	
PALYGORSKITE (fibers > 5 micrometers)	012174-11-7				X		
SENARMONITE	012412-52-1				X		
COBALT CARBONATE, COBALT DIHYDROXIDE (2:3)	012602-23-2				X		
COBALT-CHROMIUM-MOLYBDENUM ALLOY	012629-02-6				X	X	
COBALT-CHROMIUM-NICKEL-TUNGSTEN ALLOY	012638-07-2				X	X	
BERYLLIUM ALUMINUM ALLOY	012770-50-2		X			X	X
CHLOROETHYL(2)-3-CYCLOHEXYL-1-NITROSOUREA,1- (CCNU)	013010-47-4			X			X
NITROSOSACOSINE, N-	013256-22-9				X		X
BERYLLIUM HYDROXIDE	013327-32-7		X			X	
NICKEL CARBONYL	013463-39-3		X			X	
TITANIUM DIOXIDE	013463-67-7				X		
BERYLLIUM SULFATE (1:1)	013510-49-1		X			X	
ZINC CHROMATE	013530-65-9		X			X	
METHYLENEDIANILINE,4,4'- DIHYDROCHLORIDE	013552-44-8						X
BERYLLIUM HYDROGEN PHOSPHATE (1:1)	013598-15-7		X			X	
DECABROMOBIPHENYL	013654-09-6						X
COBALT MOLYBDATE (VI)	013762-14-6				X		
CALCIUM CHROMATE (VI)	013765-19-0		X			X	
CHLOROETHYL(2)-3-(4-METHYLCYCLOHEXYL)-1-NITROSOUREA, 1-	013909-09-6		X			X	
WOOD DUST	013983-17-0		X			X	
SILICA, CRYSTALLINE CRISTOBALITE	014464-46-1		X			X	

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CADMIUM FLUOBORATE	014486-19-2	X	X			X	
TALC CONTAINING ASBESTIFORM FIBRES	014807-96-6		X				
QUARTZ [SILICA, CRYSTALLINE (RESPIRABLE)]	014808-60-7			X		X	
CYCASIN	014901-08-7				X		
CHROMIUM, DICHLORODIOXO-	014977-61-8		X			X	
CHROMIUM (VI) CHLORIDE	014986-48-2		X			X	
SILICIC ACID BERYLLIUM SALT	015191-85-2		X				
NITRILOTRIACETIC ACID, DISODIUM SALT	015467-20-6				X		X
SILICA, CRYSTALLINE TRIDYMIT	015468-32-3			X		X	
CISPLATIN	015663-27-1			X			X
ZINC CHROMATE (VI) HYDROXIDE	015930-94-6		X			X	
NITROSONORNICOTINE, N'-	016543-55-8		X				X
ESTRA-1,2,5(10),7-TETRAEN-17-ONE,3-(SULFOOXY)-,SODIUM SALT	016680-47-0					X	
NITROBENZANTHRONE, 3-	017117-34-9				X		
COBALT CARBONYL	017786-31-1				X		
LEAD CHROMATE (VI) OXIDE	018454-12-1		X			X	
NITRILOTRIACETIC ACID, TRISODIUM SALT, MONOHYDRATE	018662-53-8				X		X
STREPTOZOTOCIN	018883-66-4				X		
NITRILOTRIACETIC ACID, MONOSODIUM SALT	018994-66-6				X		X
DAUNOMYCIN	020830-81-3				X		
COBALT(II) HYDROXIDE	021041-93-0				X		
INDIUM PHOSPHIDE	022398-80-7			X			
DINITROFLUOROANTHENE, 3,9-	022506-53-2				X		
METHYL MERCURY AND COMPOUNDS "s"	022967-92-6				X		
RIDDELLINE	023246-96-0				X		X
NITRILOTRIACETIC ACID, DISODIUM SALT, MONOHYDRATE	023255-03-0				X		X
BUTYLATED HYDROXYANISOLE (BHA)	025013-16-5				X		X
ADRIAMYCIN	025316-40-9			X			X
PENTACHLOROBIPHENYL	025429-29-2						X
TOLUENE DIISOCYANATE, 1,3-	026471-62-5				X		X
ARSENEOUS ACID, CALCIUM SALT	027152-57-4	X	X			X	
ARSENIUS ACID, CALCIUM SALT	027152-57-4	X	X			X	
CYCLOPENTA[CD]PYRENE	027208-37-3			X			
DICHLORO-4,4'-DIAMINODIPHENYL ETHER, 3,3'-	028434-86-8				X		
CHROMIUM CARBONATE	029689-14-3		X			X	
TENIPOSIDE	029767-20-2				X		
ZIDOVUDINE(AZT)	030516-87-1				X		
ETOPOSIDE	033419-42-0		X				
BUTYRIC ACID, 4-(N-BUTYL-N-NITROSAMINO)-	038252-74-3						X
DIAMINOANISOLE SULPHATE, 2,4-	039156-41-7						X
BERYLLIUM ZINC SILICATE	039413-47-3		X			X	
DINITROPYRENE, 1,6-	042397-64-8				X		X
DINITROPYRENE, 1,8-	042397-65-9				X		
AMSACRINE	051264-14-3				X		
ARSONIC ACID, CALCIUM SALT (1:1)	052740-16-6	X	X			X	
CHLOROZOTOCIN	054749-90-5			X			
PENTACHLOROBIPHENYL, 3,4,5,3',4'- (PCB-126)	057465-28-8		X				
NITROPYRENE, 4-	057835-92-4				X		X
POLYBROMINATED BIPHENYLS	059536-65-1				X		
CYCLOSPORIN A "s"	059865-13-3		X			X	
N-NITROSOMETHYLAMINO-PROPIONITRILE, 3-	060153-49-3				X		
OCTABROMOBIPHENYL	061288-13-9						X
COBALT NAPHTHATE	061789-51-3				X		
TRP-P-1(3-AMINO-1,4-DIMETHYL-5H-PYRIDO[4,3-b]INDOLE)	062450-06-0				X		
TRP-P-2(3-AMINO-1-METHYL-5H-PYRIDO[4,3-b]INDOLE)	062450-07-1				X		

SELECT CARCINOGENS (CAS#)

Key: IARC (INTERNATIONAL AGENCY FOR RESEARCH ON CANCER)

- 1 -- CARCINOGENIC TO HUMANS
- 2A -- PROBABLY CARCINOGENIC TO HUMANS
- 2B -- POSSIBLY CARCINOGENIC TO HUMANS

"s" - readily absorbed through the skin

NTP (NATIONAL TOXICOLOGY PROGRAM)

- A -- KNOWN TO BE CARCINOGENS
- B -- REASONABLY ANTICIPATED TO BE CARCINOGENS

LIST DOES NOT INCLUDE INDUSTRIAL PROCESSES, RADIATION, VIRUSES OR MEDICAL TREATMENT

Revised: 11/2012

CHEMICAL NAME	CAS #	OSHA	IARC			NTP	
			1	2A	2B	A	B
N-NITROSOMETHYLAMINO-1-(3-PYRIDYL)-1-BUTANONE, 4- (NNK)	064091-91-4		X				X
NNK (4-(N-NITROSOMETHYLAMINO)-1-(3-PYRIDYL)-1-BUTANONE)	064091-91-4		X				
COAL TAR "s"	065996-89-6					X	
COAL TAR DISTILLATE "s"	065996-92-1					X	
COAL-TAR PITCHES "s"	065996-93-2		X			X	
BERYLLIUM OXIDE CARBONATE	066104-24-3		X			X	
ERIONITE	066733-21-9		X			X	
GLU-P-2 (2-AMINODIPYRIDO[1,2-a:3',2'-d]IMIDAZOLE	067730-10-3				X		
GLU-P-1(2-AMINO-6-METHYLDIPYRIDO[1,2-A:3',2'-D]IMIDZOLE	067730-11-4				X		
BLEOMYCIN, HYDROCHLORIDE	067763-87-5				X		
POLYBROMINATED BIPHENYL (FF-1)	067774-32-7						X
MeA-ALPHA-C(2-AMINO-3-METHYL-9H-PYRIDO[2,3-b]INDOLE)	068006-83-7				X		
SHALE-OILS "s"	068308-34-9		X				
DINITROPYRENE, 1,3- "s"	075321-20-9				X		
IQ(2-AMINO-3-METHYLMIDAZO[4,5-f]QUINOLINE)	076180-96-6			X			
AMINO-3,4-DIMETHYL-3h-IMIDAZO(4,5f)QUINOLINE,2-	077094-11-2				X		X
CHLORO-4-(DICHLOROMETHYL)-5-HYDROXY-2(5H)FURANONE, 3-	077439-76-0				X		
AMINO-3,8-DIMETHYL-3H-IMIDAZO(4,5-f)QUINOXALINE, 2-	077500-04-0				X		X
ASBESTOS, ACTINOLITE	077536-66-4	X	X			X	
ASBESTOS, ANTHOPHYLLITE	077536-67-5	X	X			X	
ASBESTOS, TREMOLITE	077536-68-6	X	X			X	
CYCLOSPORIN	079217-60-0		X				
CYCLOSPORIN "s"	079217-60-0		X				
MICROCYSTIN	101043-37-2				X		
PLHP(2-AMINO-1-METHYL-6-PHENYLMIDAZO[4,5-B]PYRIDINE)	105650-23-5				X		X
DINITROFLUOROANTHENE, 3,7-	105735-71-5				X		
CHLORINATED PARAFFINS (CARBON-12, 60% CHLORINE)	108171-26-2				X		X
FUMONISIN B1	116355-83-0				X		

REFERENCE:

International Agency for Research on Cancer, 2012, *Overall Evaluations of Carcinogenicity to Humans. (Monographs Volumes 1-106)*

Sax, Richard, 1999. *Dangerous Properties of Industrial Materials.*

National Toxicology Program, 2011. *12th Annual Report on Carcinogens.*

APPENDIX 5-F

Cole Science Center

Summary of Particularly Hazardous Substances

Please remember that the acute toxins and reproductive toxins lists are only examples and that other chemicals not listed can meet the definitions for those hazards.

SUMMARY OF PARTICULARLY HAZARDOUS SUBSTANCES (by alpha)

Key:

- SC -- Select Carcinogens
- RT -- Reproductive Toxins
- AT -- Acute Toxins
- SA -- Readily Absorbed Through the Skin
- DHS -- Chemicals of Interest

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CHEMICAL NAME	CAS #	SC	RT	AT	SA	DHS
2,4,5-T	000093-76-5		x		x	
ABRIN	001393-62-0			x		
ACETALDEHYDE	000075-07-0	x				
ACETAMIDE	000060-35-5	x				
ACETOHYDROXAMIC ACID	000546-88-3		x		x	
ACETONE CYANOHYDRIN, STABILIZED	000075-86-5			x		x
ACETYLAMINOFLUORENE, 2-	000053-96-3	x				
ACID MIST, STRONG INORGANIC	000000-00-0	x				
ACROLEIN	000107-02-8		x	x	x	
ACRYLAMIDE	000079-06-1	x	x		x	
ACRYLONITRILE	000107-13-1	x	x	x	x	
ACTINOMYCIN D	000050-76-0		x		x	
ADIPONITRILE	000111-69-3			x		
ADRIAMYCIN	023214-92-8	x				
AFLATOXIN B1	001162-65-8	x				
AFLATOXIN M1	006795-23-9	x				
AFLATOXINS	001402-68-2	x		x		
ALL-TRANS RETINOIC ACID	000302-79-4		x		x	
ALPRAZOMAN	028981-97-7		x		x	
ALUMINUM PHOSPHIDE	020859-73-8			x		x
AMANTADINE HYDROCHLORIDE	000665-66-7		x		x	
AMINO-2,4-DIBROMOANTHRAQUINONE	000081-49-2	x				
AMINO-2-METHYLANTHRAQUINONE, 1-	000082-28-0	x				
AMINO-3,4-DIMETHYL-3h-IMIDAZO(4,5f)QUINOLINE, 2-	077094-11-2	x				
AMINO-3,8-DIMETHYL-3H-IMIDAZO(4,5-f)QUINOXALINE, 2-	077500-04-0	x				
AMINO-5-(5-NITRO-2-FURYL)-1,3,4-THIADIAZOLE, 2-	000712-68-5	x				
AMINOANTHRAQUINONE, 2-	000117-79-3	x				
AMINOAZOBENZENE, para-	000060-09-3	x				
AMINOAZOTOLUENE, ortho-	000097-56-3	x	x			
AMINODIPHENYL, 4-	000092-67-1	x	x		x	
AMINOGLUTETHIMIDE	000125-84-8		x		x	
AMINOPTERIN	000054-62-6		x			
AMITROLE	000061-82-5	x				
AMMONIA (GAS)	007664-41-7			x		
AMMONIUM DICHROMATE (VI)	007789-09-5	x			x	
AMSACRINE	051264-14-3	x				
ANGIOTENSIN CONVERTING ENZYME (ACE) INHIBITORS	000000-00-0		x			
ANILINE	000062-53-3			x	x	
ANILINE AND COMPOUNDS	000000-00-0			x	x	
ANISIDINE HYDROCHLORIDE, o-	000134-29-2	x				
ANISIDINE, ORTHO-	000090-04-0	x			x	
ANISINDIONE	000117-37-3		x			
ANTHRAQUINONE, 1,8-DIHYDROXY	000117-10-2	x				
ARAMITE	000140-57-8	x				
ARECA NUT	000000-00-0	x				
ARISTOLOCHIC ACIDS	000000-00-0	x				
ARSENEOUS ACID, CALCIUM SALT	027152-57-4	x	x			
ARSENEOUS ACID, POTASSIUM SALT	010124-50-2	x	x			

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CHEMICAL NAME	CAS #	SC	RT	AT	SA	DHS
ARSENIC ACID	007778-39-4	x	x	x	x	
ARSENIC ACID AND SALTS	000000-00-0			x	x	
ARSENIC ACID, CALCIUM SALT (2:3)	007778-44-1	x	x	x	x	
ARSENIC ACID, DISODIUM SALT, HEPTAHYDRATE	010048-95-0	x	x	x	x	
ARSENIC ACID, LEAD(2+) SALT (1:1)	007784-40-9	x	x	x	x	
ARSENIC ACID, MONOPOTASSIUM SALT	007784-41-0	x	x	x	x	
ARSENIC ACID, SODIUM SALT	007631-89-2	x	x	x	x	
ARSENIC AND COMPOUNDS	007440-38-2	x	x			
ARSENIC PENTAFLUORIDE	007784-36-3	x	x	x		
ARSENIC PENTOXIDE	001303-28-2	x	x	x		
ARSENIC TRICHLORIDE	007784-34-1	x	x	x		x
ARSENIC TRIOXIDE	001327-53-3	x	x	x	x	
ARSENIUS ACID AND SALTS	000000-00-0			x		
ARSENIUS ACID, CALCIUM SALT	027152-57-4	x	x	x		
ARSENIUS ACID, MONOSODIUM SALT	007784-46-5	x	x	x		
ARSINE	007784-42-1	x	x	x		
ARSONIC ACID	000097-44-9	x	x	x		
ARSONIC ACID AND SALTS	000000-00-0			x		
ARSONIC ACID, CALCIUM SALT (1:1)	052740-16-6	x	x	x		
ASBESTOS	001332-21-4	x				
ASBESTOS, ACTINOLITE	077536-66-4	x				
ASBESTOS, AMOSITE	012172-73-5	x				
ASBESTOS, ANTHOPHYLLITE	077536-67-5	x				
ASBESTOS, CHRYSOTILE	012001-29-5	x				
ASBESTOS, CROCIDOLITE	012001-28-4	x				
ASBESTOS, TREMOLITE	077536-68-6	x				
ASPIRIN	000050-78-2		x			
ATENOLO	029122-68-7		x		x	
AURAMINE	000492-80-8	x	x			
AURANOFIN	034031-32-8		x			
AZACYTIDINE	000320-67-2	x				
AZASERINE	000115-02-6	x				
AZATHIOPRINE	000446-86-6	x	x			
AZIRIDINE	000151-56-4	x	x		x	
BARBITURATES	000000-00-0		x			
BIARIUM CHROMATE(VI)	010294-40-3	x				
BECLOMETHASONE DIPROPIONATE	005534-09-8		x			
BENOMYL	017804-35-2		x		x	
BENZ[a]ANTHRACENE	000056-55-3	x			x	
BENZ[c]PHENANTHRENE	000195-19-7	x				
BENZ[j]ACEANTHRYLENE	000202-33-5	x				
BENZENE	000071-43-2	x	x		x	
BENZIDINE AND BENZIDINE BASED DYES	000092-87-5	x			x	
BENZO[a]PYRENE	000050-32-8	x	x			
BENZO[b]FLUORANTHENE	000205-99-2	x				
BENZO[j]FLUORANTHENE	000205-82-3	x				
BENZO[k]FLUORANTHENE	000207-08-9	x				
BENZOFURAN	000271-89-6	x				
BENZOPHENONE	000119-61-9	x				
BENZOYL CHLORIDE (COMBINED EXPOSURE WITH CHLOROTOLUENES)	000098-88-4	x			x	

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CHEMICAL NAME	CAS #	SC	RT	AT	SA	DHS
BENZOYLTRICHLORIDE (COMBINED EXPOSURE W/ BENZOYL CHLORIDE)	000098-07-7	x			x	
BENZPHETAMINE HYDROCHLORIDE	005411-22-3		x		x	
BENZYL CHLORIDE (COMBINED EXPOSURE W/ BENZOYL CHLORIDE)	000100-44-7	x	x		x	
BENZYL VIOLET 4B	001694-09-3	x				
BERYLLIUM ALUMINUM ALLOY	012770-50-2	x				
BERYLLIUM ALUMINUM SILICATE	001302-52-9	x				
BERYLLIUM AND COMPOUNDS	007440-41-7	x				
BERYLLIUM CHLORIDE	007787-47-5	x				
BERYLLIUM FLUORIDE	007787-49-7	x				
BERYLLIUM HYDROGEN PHOSPHATE (1:1)	013598-15-7	x				
BERYLLIUM HYDROXIDE	013327-32-7	x				
BERYLLIUM OXIDE	001304-56-9	x				
BERYLLIUM OXIDE CARBONATE	066104-24-3	x				
BERYLLIUM SULFATE (1:1)	013510-49-1	x				
BERYLLIUM SULFATE, TETRAHYDRATE (1:1:4)	007787-56-6	x				
BERYLLIUM ZINC SILICATE	039413-47-3	x				
BIS(2-CHLOROETHYLTHIO)METHANE	063869-13-6			x		
BIS(2-CHLOROETHYLTHIO)-N-BUTANE, 1,4-	142868-93-7			x		
BIS(2-CHLOROETHYLTHIO)-N-PENTANE, 1,5-	142868-94-8			x		
BIS(2-CHLOROETHYLTHIO)-N-PROPANE, 1,3-	063905-10-2			x		
BIS(2-CHLOROETHYLTHIOMETHYL)ETHER	063918-90-1			x		
BISCHLOROETHYL NITROSOUREA (BCNU)	000154-93-8	x	x	x		
BITUMENS, EXTRACTS OF STEAM-REFINED & AIR-REFINED	008052-42-4	x				
BLEOMYCIN SULFATE	009041-93-4	x				
BLEOMYCIN, HYDROCHLORIDE	067763-87-5	x				
BLEOMYCINS	011056-06-7	x				
BOMOXYNIL OCTANOATE	001689-99-2		x		x	
BORON TRIBROMIDE	010294-33-4			x		
BORON TRIFLUORIDE	007637-07-2			x		
BOTULINUM TOXINS	000000-00-0			x		
BRACKEN FERN	000000-00-0	x				
BROMINE	007726-95-6			x		
BROMINE PENTAFLUORIDE	007789-30-2			x		
BROMINE TRIFLUORIDE	007787-71-5					x
BROMOACETONE	000598-31-2			x		x
BROMODEOXYURIDINE	000059-14-3		x			
BROMODICHLOROMETHANE	000075-27-4	x	x			
BROMOPROPANE, 1-	000106-94-5		x			
BROMOPROPANE, 2-	000075-26-3		x			
BUTADIENE, 1,3-	000106-99-0	x				
BUTANEDIOL DIMETHYLSULPHONATE, 1,4- (BUSULFAN)	000055-98-1	x	x			
BUTYLATED HYDROXYANISOLE (BHA)	025013-16-5	x				
BUTYRIC ACID, 4-(N-BUTYL-N-NITROSAMINO)-	038252-74-3	x				
BUTYROLACTONE, BETA-	003068-88-0	x				
C.I. BASIC RED 9 MONOHYDROCHLORIDE	000569-61-9	x				
CADMIUM AND COMPOUNDS	007440-43-9	x	x			
CADMIUM CARBONATE	000513-78-0	x	x			
CADMIUM CHLORIDE	010108-64-2	x	x		x	
CADMIUM FLUOBORATE	014486-19-2	x	x			
CADMIUM NITRATE	010325-94-7	x	x			

SUMMARY OF PARTICULARLY HAZARDOUS SUBSTANCES (by alpha)

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CHEMICAL NAME	CAS #	SC	RT	AT	SA	DHS
CADMIUM OXIDE	001306-19-0	x	x			
CADMIUM SULFATE (1:1)	010124-36-4	x	x			
CADMIUM SULFIDE	001306-23-6	x	x			
CAFFEIC ACID	000331-39-5	x				
CALCIUM CHROMATE (VI)	013765-19-0	x				
CALCIUM PHOSPHIDE	001305-99-3			x		x
CAPTAFOL	002425-06-1	x				
CARBAMAZEPINE	000298-46-4		x			
CARBON BLACK	001333-86-4	x				
CARBON DISULFIDE	000075-15-0		x		x	
CARBON MONOXIDE	000630-08-0		x			
CARBON TETRACHLORIDE	000056-23-5	x			x	
CARBOPLATIN	041575-94-4		x		x	
CARRAGEENAN, DEGRADED	009000-07-1	x				
CATECHOL	000120-80-9	x			x	
CERAMIC FIBERS (RESPIRABLE SIZE)	000000-00-0	x				
CHLORAMBUCIL	000305-03-3	x	x			
CHLORAMPHENICOL	000056-75-7	x	x			
CHLORDANE	000057-74-9	x	x		x	
CHLORDANE, ALPHA	005103-71-9	x	x		x	
CHLORDANE, BETA	005103-74-2	x	x		x	
CHLORDANE, GAMMA	005566-34-7	x	x		x	
CHLORDIAZEPOXIDE	000058-25-3		x			
CHLORDIAZEPOXIDE HYDROCHLORIDE	000438-41-5		x			
CHLORENDIC ACID	000115-28-6	x				
CHLORINATED PARAFFINS (CARBON-12, 60% CHLORINE)	063449-39-8	x				
CHLORINATED TOULENES, ALPHA- CHLORINE	108171-82-2 007782-50-5	x x		x		
CHLORINE DIOXIDE	010049-04-4					X
CHLORINE PENTAFLUORIDE	013637-63-3			x		x
CHLORINE TRIFLUORIDE	007790-91-2			x		
CHLORO-2-METHYLPROPENE, 1-	000513-37-1	x				
CHLORO-2-METHYLPROPENE, 3-	000563-47-3	x	x			
CHLORO-4-(DICHLOROMETHYL)-5-HYDROXY-2(5H)-FURANONE, 3-	077430-76-0	x				
CHLOROACETYL CHLORIDE	000079-04-9					x
CHLOROANILINE, PARA	000106-47-8	x			x	
CHLOROETHYL(2)-3-(4-METHYLCYCLOHEXYL)-1-NITROSOUREA, 1-	013909-09-6	x				
CHLOROETHYL(2)-3-CYCLOHEXYL-1-NITROSOUREA, 1-(CCNU)	013010-47-4	x				
CHLOROETHYLCHLORO-METHYLSULFIDE, 2-	002625-76-5			x		x
CHLOROFORM	000067-66-3	x	x			
CHLOROMETHYL ETHER, BIS-	000542-88-1	x	x		x	
CHLOROMETHYL ETHER, BIS- (TECHNICAL GRADE)	000107-30-2	x	x		x	
CHLORO-O-PHENYLENEDIAMINE, 4-	000095-83-0	x	x			
CHLORO-O-TOLUIDINE HYDROCHLORIDE, 4-	003165-93-3	x				
CHLORO-O-TOLUIDINE, 4-	000095-69-2	x	x			
CHLOROPHENOXY HERBICIDES	000000-00-0	x			x	
CHLOROPICRIN	000076-06-2			x		
CHLOROPRENE	000126-99-8	x	x		x	
CHLOROSARIN	001445-76-7			x	x	x
CHLOROSOMAN	007040-57-5			x	x	x

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CHEMICAL NAME	CAS #	SC	RT	AT	SA	DHS
CHLOROSULFONIC ACID	007790-94-5	-	-	-	-	x
CHLOROZOTOCIN	054749-90-5	x				
CHROMATE(1-),HYDROXYOCTAOXODIZINCATEDI-, POTASSIUM	011103-86-9	x				
CHROMIC ACID, DISODIUM SALT	007775-11-3	x			x	
CHROMIUM (III) OXIDE (2:3)	001308-38-9	x				
CHROMIUM (VI) OXIDE (1:3)	001333-82-0	x				
CHROMIUM (VI)CHLORIDE	014986-48-2	x				
CHROMIUM CARBONATE	029689-14-3	x				
CHROMIUM PHOSPHATE	007789-04-0	x				
CHROMIUM TRIACETATE	001066-30-4	x				
CHROMIUM, DICHLORODIOXO-	014977-61-8	x				
CHROMIUM, HEXAVALENT AND COMPOUNDS	007440-47-3	x	x			
CHRYSENE	000218-01-9	x				
CI ACID RED 114	006485-34-3	x				
CI DIRECT BLUE 15	002429-74-5	x				
CICLOSPORIN	079217-60-0	x				
CISPLATIN	015663-27-1	x	x			
CITRUS RED NO. 2	006358-53-8	x				
CLOBETASOL PROPIONATE	025122-46-7		x			
CLOMIPHENE CITRATE	000050-41-9		x			
CLORAZEPATE DIPOTASSIUM	057109-90-7		x			
COAL TAR	065996-89-6	x			x	
COAL TAR DISTILLATE	065996-92-1	x			x	
COAL-TAR	008007-45-2	x			x	
COAL-TAR PITCHES	065996-93-2	x			x	
COBALT (2+) SULFIDE	001317-42-6	x				
COBALT (II) ACETATE	006147-53-1	x				
COBALT (III) OXIDE	001308-04-9	x				
COBALT ACETATE	000071-48-7	x				
COBALT ALLOY, CO, CR	011114-92-4	x				
COBALT AND COMPOUNDS	007440-48-4	x				
COBALT CARBONATE	000513-79-1	x				
COBALT CARBONATE, COBALT DIHYDROXIDE (2:3)	012602-23-2	x				
COBALT CARBONYL	017786-31-1	x				
COBALT DINITRATE HEXAHYDRATE	010026-22-9	x				
COBALT HYDROXIDE	001307-86-4	x				
COBALT HYDROXIDE OXIDE	012016-80-7	x				
COBALT MOLYBDATE(VI)	013762-14-6	x				
COBALT NAPHTHATE	061789-51-3	x				
COBALT OXIDE	001308-06-1	x				
COBALT TRIACETATE	000917-69-1	x				
COBALT(2+) OXIDE	001307-96-6	x				
COBALT(II) CHLORIDE	007646-79-9	x				
COBALT(II) CHLORIDE, HEXAHYDRATE	007791-13-1	x				
COBALT(II) HYDROXIDE	021041-93-0	x				
COBALT(II) NITRATE (1:2)	010141-05-6	x				
COBALT(II) SULFATE (1:1)	010124-43-3	x				
COBALT, (MU(CARBONATO(2-)-O:O'))DIHYDROXYDI	012069-68-0	x				
COBALT, DI-MU-CARBONYLNONACARBONYL	010210-68-1	x				
COBALT-CHROMIUM-MOLYBDENUM ALLOY	012629-02-6	x				

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COBALT-CHROMIUM-NICKEL-TUNGSTEN ALLOY	012638-07-2	x				
COLCHICINE	000064-86-8		x	x		
CONESTORAL	000438-67-5	x				
CREOSOTE, WOOD	008021-39-4	x				
CREOSOTES	008001-58-9	x				
CRESIDINE, para-	000120-71-8	x				
CUPFERRON	000135-20-6	x				
CYANAMIDE	000420-04-2			x	x	
CYANIDE	000057-12-5			x	x	
CYANIDE AND COMPOUNDS	000000-00-0			x	x	
CYANOGEN	000460-19-5			x		
CYANOGEN AND COMPOUNDS	000000-00-0			x		
CYANOGEN CHLORIDE	000506-77-4			x	x	x
CYCASIN	014901-08-7	x				
CYCLOHEXIMIDE	000066-81-9		x			
CYCLOPENTA[CD]PYRENE	027208-37-3	x				
CYCLOPHOSPHAMIDE	006055-19-2	x	x			x
CYCLOSPORIN	079217-60-0	x	x			x
CYCLOSPORIN A	059865-13-3	x	x			x
CYTARABINE	000147-94-4		x			
DACARBAZINE	004342-03-4	x				
DANAZOL	017230-88-5		x			
DAUNOMYCIN	020830-81-3	x	x			
DDT	000050-29-3	x	x		x	
DECABORANE	017702-41-9			x	x	
DECABROMOBIPHENYL	013654-09-6	x				
DEMECLOCYCLINE HYDROCHLORIDE (INTERNAL USE)	000064-73-3		x			
DI(2-ETHYLHEXYL)PHTHALATE	000117-81-7	x				
DIACETOXYSCIRPENOL	002270-40-8			x		
DIACETYLBENZIDINE,N,N'-	000613-35-4	x				
DIAMINOANISOLE SULPHATE, 2,4-	039156-41-7	x				
DIAMINOANISOLE, 2,4- (AND ITS SALTS)	000615-05-4	x	x			
DIAMINOBENZENE	000136-35-6	x				
DIAMINODIPHENYL ETHER	000101-80-4	x				
DIAMINOTOLUENE, 2,4-	000095-80-7	x	x			
DIAZEPAM	000439-14-5		x		x	
DIAZOAMINO BENZENE	000136-35-6	x			x	
DIAZOMETHANE	000334-88-3			x		
DIBENZ[a,h]ACRIDINE	000226-36-8	x				
DIBENZ[a,h]ANTHRACENE	000053-70-3	x	x			
DIBENZ[a,j]ACRIDINE	000224-42-0	x				
DIBENZ[c,h]ACRIDINE	000224-53-3	x				
DIBENZO[a,e]PYRENE	000192-65-4	x				
DIBENZO[a,h]PYRENE	000189-64-0	x				
DIBENZO[a,i]PYRENE	000189-55-9	x				
DIBENZO[a,l]PYRENE	000191-30-0	x				
DIBENZO[c,g]CARBAZOLE, 7H-	000194-59-2	x				
DIBORANE	019287-45-7			x		x
DIBROMO-1-PROPANOL, 2,3-	000096-13-9	x				
DIBROMO-3-CHLOROPROPANE, 1,2-	000096-12-8	x	x		x	

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DIBROMOACETIC ACID	000079-43-6	x			x	
DIBROMOACETONITRILE	003252-43-5	x	x		x	
DICHLORO-2-PROPANOL, 1,3-	000096-23-1	x			x	
DICHLORO-4,4'-DIAMINODIPHENYL ETHER, 3,3'-	028434-86-8	x				
DICHLOROACETIC ACID	000079-43-6	x			x	
DICHLOROACETYLENE	007572-29-4			x		
DICHLOROBENZENE, para-	000106-46-7	x				
DICHLOROBENZIDINE, DIHYDROCHLORIDE, 3,3' -	000612-83-9	x			x	
DICHLOROBENZIDINE,3,3'-	000091-94-1	x			x	
DICHLOROETHANE, 1,2-	000107-06-2	x	x		x	
DICHLOROMETHANE	000075-09-2	x	x			
DICHLOROPROPENE, 1,3- (TECHNICAL-GRADE)	000542-75-6	x			x	
DICHLORVOS	000062-73-7	x	x	x	x	
DICUMAROL	000066-76-2		x			
DIEPOXYBUTANE, 3,4-,MESO 1,2	000564-00-1	x			x	
DIESEL EXHAUST	000000-00-0	x				
DIESEL FUEL MARINE	000000-00-0	x				
DIETHANOLAMINE	000111-42-2	x			x	
DIETHYL METHYLPHOSPHONITE	015715-41-0			x	x	x
DIETHYL PHOSPHORAMIDIC DICHLORIDE, N,N-	001498-54-0					x
DIETHYL S-[2-(DIETHYLAMINO)ETHYL] PHOSPHOROTHIOLATE, O,O-	000078-53-5			x		x
DIETHYL SULPHATE	000064-67-5	x			x	
DIETHYLHYDRAZINE, 1,2-	001615-80-1	x				
DIETHYLSTILBOESTROL	000056-53-1	x	x		x	
DIFLUSINAL	022494-42-2		x			
DIGITOXIN	000071-63-6		x	x	x	x
DIGLYCIDYL RESORCINOL ETHER	000101-90-6	x				
DIHYDROSAFROLE	000094-58-6	x				
DIMETHANESULFONATE, 1,4-	000299-75-2		x			
DIMETHOXYBENZIDINE, 3,3'- (o-DIANISIDINE)	000119-90-4	x				
DIMETHOXYBENZIDINE, 3,3'-,DIHYDROCHLORIDE	020325-40-0	x				
DIMETHYL MERCURY	000593-74-8		x	x	x	
DIMETHYL PHOSPHORAMIDIC DICHLORIDE, N,N-	000677-43-0					x
DIMETHYL SULFATE	000077-78-1	x	x	x	x	
DIMETHYLACETAMIDE, N,N-	000127-19-5		x		x	
DIMETHYLAMINOAZOBENZENE, 4-	000060-11-7	x	x			
DIMETHYLARSENIC ACID	000075060-5	x	x			
DIMETHYLBENZIDINE, 3,3'- (o-TOLIDINE)	000119-93-7	x			x	
DIMETHYLCARBAMOYL CHLORIDE	000079-44-7	x	x			
DIMETHYLFORMAMIDE	000068-12-2		x		x	
DIMETHYLHYDRAZINE, 1,1-	000057-14-7	x	x		x	
DIMETHYLHYDRAZINE, 1,2-	000540-73-8		x		x	
DI-N-BUTYL PHTHALATE	000084-74-2		x			
DI-N-HEXYL PHTHALATE	000084-75-3		x			
DINITROFLUOROANTHENE, 3,7-	105735-71-5	x				
DINITROFLUOROANTHENE, 3,9-	022505-53-2	x				
DINITROGEN TETROXIDE	010544-72-6			x		x
DINITROPHENOL, 2,4-	000051-28-5			x	x	
DINITROPYRENE, 1,3-	075321-20-9	x			x	
DINITROPYRENE, 1,6-	042397-64-8	x	x			

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DINITROPYRENE, 1,8-	042397-65-9	x	x			
DINITROTOLUENE, 2,4-	000121-14-2	x	x		x	
DINITROTOLUENE, 2,6-	000606-20-2		x		x	
DINOSEB	000088-85-7		x		x	
DIOCTYL PHTHALATE	000117-81-7		x			
DIOXANE, 1,4-	000123-91-1	x			x	
DIPHENYLHYDANTOIN	000057-41-0	x				
DIPROPYL PHOSPHORAMIDIC DICHLORIDE, N,N-	040881-98-9					x
DIRECT BLACK 38	001937-37-7	x				
DIRECT BLUE 6	002602-46-2	x				
DISPERSE BLUE 1	002475-45-8	x				
DOXORUBICIN HYDROCHLORIDE (ADRIAMYCIN)	023214-92-8		x			
DOXYCYCLINE AND COMPOUNDS (INTERNAL USE)	000564-25-0		x			
E-GLASS	000000-00-0	x				
ENDOSULFAN	000115-29-7		x	x	x	
ENDRIN	000072-20-8			x	x	
EPICHLOROHYDRIN	000106-89-8	x	x		x	
EPOXYBUTANE, 1,2-	000106-88-7	x				
ERGOTAMINE TARTRATE	000379-79-3		x			
ERIONITE	066733-21-9	x				
ESTRA-1,2,5(10),7-TETRAEN-17-ONE,3-(SULFOOXY)-,SODIUM SAL'	016680-47-0	x				
ETHANEDIOL, N,N- (2-DIETHYLAMINO)	000100-38-9					x
ETHANETHIOL, N,N- (2-DIISOPROPYLAMINO)	005842-07-9					x
ETHANETHIOL, N,N- (2-DIMETHYLAMINO)	000108-02-1					x
ETHANETHIOL, N,N- (2-DIPROPYLAMINO)	005842-06-8					x
ETHIDIUM BROMIDE	001239-45-8		x			
ETHIONAMIDE	000536-33-4		x			
ETHYL ACRYLATE	000140-88-5	x			x	
ETHYL METHANESULPHONATE	000062-50-0	x	x			
ETHYL O-2-DIISOPROPYLAMINOETHYL METHYLPHOSPHONITE,O-(QL)	057856-11-8			x	x	x
ETHYL PHOSPHONYL DIFLUORIDE	000753-98-0			x	x	x
ETHYLENE CHLOROHYDRIN	000107-07-3			x	x	
ETHYLENE DIBROMIDE	000106-93-4	x	x		x	
ETHYLENE GLYCOL ETHERS	000000-00-0		x			
ETHYLENE OXIDE	000075-21-8	x	x			
ETHYLENE THIOUREA	000096-45-7	x				
ETHYLHEXANOIC ACID	000149-57-5		x		x	
ETHYL-N-NITROSOUREA,N-	000759-73-9	x	x			
ETHYLPHOSPHONOTHIOIC DICHLORIDE	000993-43-1					x
ETHYL-S-DIMETHYLAMINOETHYLMETHYLPHOSPHONOTHIOATE (VX)	050782-69-9			x	x	x
ETOPOSIDE	033419-42-0	x	x			
ETRETINATE	054350-48-0		x			
FLUORINE	007782-41-4			x		x
FLUOROURACIL	000051-21-8		x			
FLUOXYMESTERONE	000076-43-7		x			
FORMALDEHYDE	000050-00-0	x	x		x	
FOWLER'S SOLUTION	001332-10-1	x	x			
FUMONISIN B1	116355-83-0	x				
FURAN	000110-00-9	x			x	
FURYLAMIDE	003688-53-7	x	x			

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GALLIUM ARSENIDE	001303-00-0	x				
GANCICLOVIR	082410-32-0		x			
GANCICLOVIR HYDROCHLORIDE	107910-75-8		x			
GASOLINE	008006-61-9	x			x	
GASOLINE, ENGINE EXHAUST FUMES	000000-00-0	x				
GERMANE	007782-65-2			x		
GERMANIUM TETRAFLUORIDE	007783-58-6			x	x	x
GLASS FIBERS, SPECIALTY (E-GLASS, '475')	000000-00-0	x				
GLASSWOOL (RESPIRABLE SIZE)	000000-00-0	x				
GLU-P-1 (2-AMINO-6-METHYLDIPYRIDO[1,2-a:3',2'-d]IMIDAZOLE	067730-11-4	x	x			
GLU-P-2(2-AMINODIPYRIDO[1,2-A:3',2'-D]IMIDAZOLE)	067730-10-3	x	x			
GLYCIDALDEHYDE	000765-34-4	x			x	
GLYCIDOL	000556-52-5	x	x		x	
GOSSYPOL	000303-45-7		x			
GRISEOFULVIN	000126-07-8	x	x			
HALOPERIDOL	000052-86-8		x			
HALOTHANE	000151-67-7		x			
HC BLUE 1	002784-94-3	x				
HEPATITIS B VIRUS	000000-00-0	x				
HEPATITIS C VIRUS	000000-00-0	x				
HEPTACHLOR	000076-44-8	x	x	x	x	
HEPTACHLOR EPOXIDE	001024-57-3	x	x	x	x	
HEXACHLOROBENZENE	000118-74-1	x	x		x	
HEXACHLOROBENZENE, GAMMA	000058-89-9	x	x		x	
HEXACHLOROETHANE	000067-72-1	x				
HEXACHLOROHEXANES (ALL ISOMERS)	000608-73-1	x			x	
HEXAMETHYLPHOSPHORAMIDE	000680-31-9	x	x		x	
HN1 (NITROGEN MUSTARD-1)	000538-07-8			x	x	x
HN2 (NITROGEN MUSTARD-2)	000051-75-2			x	x	x
HN3 (NITROGEN MUSTARD-3)	000555-77-1			x	x	x
HUMAN IMMUNODEFICIENCY VIRUS TYPE 1	000000-00-0	x				
HUMAN PAPILOMAS VIRUSES: SOME GENITAL-MUCOSAL	000000-00-0	x				
HYDRAZINE	000302-01-2	x	x		x	
HYDRAZINE SULFATE (1:1)	010034-93-2	x	x		x	
HYDRAZOBENZENE	000122-66-7	x				
HYDROGEN CYANIDE	000074-90-8			x	x	x
HYDROGEN FLUORIDE	007664-39-3			x	x	
HYDROGEN SELENIDE	007783-07-5			x	x	x
HYDROGEN SULFIDE	007783-06-4			x		
HYDROXYUREA	000127-07-1		x			
IDARUBICIN HYDROCHLORIDE	057852-57-0		x			
IFOSFAMIDE	003778-73-2		x			
INDENO[1,2,3-cd]PYRENE	000193-39-5	x				
INIDIUM PHOSPHIDE	022398-80-7	x				
IQ(2-AMINO-3-METHYLMIDAZO[4,5-f]QUINOLINE)	076180-96-6	x				
IRON-DEXTRAN COMPLEX	009004-66-4	x				
ISOPRENE	000078-79-5	x				
ISOPROPYLPHOSPHONOTHIOIC DICHLORIDE	001498-60-8			x	x	x
ISOPROPYLPHOSPHONYL DIFLUORIDE	000677-42-9			x	x	x
ISOTRETINOIN	004759-48-2		x			

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KEPONE (CHLORDECONE)	000143-50-0	x	x		x	
LASIOCARPINE	000303-34-4	x	x			
LEAD PHOSPHATE	007446-27-7	x	x			
LEAD ACETATE	000301-04-2	x	x			
LEAD ACETATE (II) TRIHYDRATE	006085-56-4	x	x			
LEAD AND COMPOUNDS	007439-92-1	x	x			
LEAD CHROMATE	007758-97-6	x				
LEAD CHROMATE (VI) OXIDE	018454-12-1	x	x			
LEVODOPA	000059-92-7		x			
LEWISITE 1	000541-25-3			x	x	x
LEWISITE 2	040334-69-8			x	x	x
LEWISITE 3	040334-70-1			x	x	x
LINDANE, ALPHA	000319-84-6	x				
LINDANE, BETA	000319-85-7	x				
LINURON	000330-55-2		x			
LITHIUM AMIDE	007782-89-0					x
LITHIUM AND COMPOUNDS	007439-93-2		x			
LITHIUM NITRIDE	026134-62-3					x
LORAZEPAM	000846-49-1		x			
MAGENTA (CONTAINING CI BASIC RED 9)	000632-99-5	x				
MAGNESIUM PHOSPHIDE	012057-74-8					x
MANGANESE TRICARBONYL METHYLCYCLOPENTADIENYL	012108-13-3			x	x	
MeA-ALPHA-C(2-AMINO-3-METHYL-9H-PYRIDO[2,3-b]INDOLE)	068006-83-7	x				
MEBENDAZOLE	031431-39-7		x			
MEDROXYPROGESTERONE ACETATE	000071-58-9	x	x			
MEGESTROL ACETATE	000595-33-5		x			
MELPHALAN	000148-82-3	x	x			
MERCURY AND COMPOUNDS	007439-97-6		x		x	
MERPHALAN	000531-76-0	x				
MESTRANOL	000072-33-3		x			
METHIMAZOLE	000060-56-0		x			
METHOTREXATE SODIUM	015475-56-6		x			
METHOXYPORALEN, 5-	000484-20-8	x				
METHYL BROMIDE	000074-83-9		x	x	x	
METHYL CHLORIDE	000074-87-3		x			
METHYL DIFLUOROPHOSPHITE (DF)	000676-99-3			x	x	x
METHYL HYDRAZINE	000060-34-4		x	x	x	
METHYL ISOBUTYL KETONE	000108-10-1	x				
METHYL ISOCYANATE	000624-83-9			x	x	
METHYL MERCURY	022967-92-6			x	x	
METHYL MERCURY AND COMPOUNDS	000000-00-0			x	x	
METHYL METHANESULPHONATE	000066-27-3	x	x			
METHYL-1-NITROANTHRAQUINONE, 2- (UNCERTAIN PURITY)	000129-15-7	x				
METHYLAMINOPTERIN	000059-05-2		x			
METHYLARSONIC ACID	000124-58-3	x	x			
METHYLAZIRIDINE, 2- (PROPYLENEIMINE)	000075-55-8	x	x	x	x	
METHYLAZOXYMETHANOL	000590-96-5	x				
METHYLAZOXYMETHANOL ACETATE	000592-62-1	x	x			
METHYLCHRYSENE, 5-	003697-24-3	x				
METHYLDICHLOROARSINE	000593-89-5	x	x	x		

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METHYLDICHLOROSILANE	000075-54-7	-	-	-	-	x
METHYLENE BIS(2-CHLOROANILINE), 4,4- (MOCA)	000101-14-4	x			x	
METHYLENE BIS(2-METHYLANILINE), 4,4'-	000838-88-0	x				
METHYLENEBIS(N,N-DIMETHYL)BENZENAMINE, 4,4'	000101-61-1	x				
METHYLENEDIANILINE, 4,4'	000101-77-9	x				
METHYLENEDIANILINE, 4,4'-DIHYDROCHLORIDE	013552-44-8	x				
METHYLEUGENOL	000093-15-2	x				
METHYLFLUOROSULFONATE	000421-20-5			x		
METHYLIMIDAZOLE, 2-	000693-98-1	x				
METHYLIMIDAZONE, 4-	000822-36-6	x			x	
METHYL-N-NITRO-N'-NITROSGUANIDINE, N- (MNNG)	000070-25-7	x	x			
METHYL-N-NITROSOUREA, N-	000684-93-5	x	x			
METHYLPHOSPHONOTHIOIC DICHLORIDE	000676-98-2					x
METHYLSTYRENE, ALPHA	000098-83-9	x				
METHYLTESTOSTERONE	000058-18-4		x			
METHYLTHIOURACIL	000056-04-2	x	x			
METRONIDAZOLE	000443-48-1	x	x			
MICHLER'S KETONE	000090-94-8	x				
MICROCYSTIN	101043-37-2	x				
MINERAL OILS, UNTREATED AND MILDLY TREATED	000000-00-0	x			x	
MIREX	002385-85-5	x	x		x	
MISOPROSTOL	059122-46-2		x			
MITOMYCIN C	000050-07-7	x	x	x		
MITOXANTRONE HYDROCHLORIDE	070476-82-3		x		x	
MONOCHLORO-1,2-PROPANDIOL, 3-	000096-24-2	x	x		x	
MONOCROTALINE	000315-22-0	x	x			
MUSTARD GAS (SULPHUR MUSTARD)	000505-60-2	x	x	x	x	
MUSTARD, O- (T)	063918-89-8					x
MYCLOBUTANIL	088671-89-0		x			
N-[4-(5-NITR-2-FURYL)-2-THIAZOYL]ACETAMIDE	000531-82-8	x				
NAFENOPIIN	003771-19-5	x				
NAPHTHALENE	000091-20-3	x				
NAPHTHYL METHYLCARBAMATE	000063-25-2		x			
NAPHTHYLAMINE, 2-	000091-59-8	x	x		x	
NAPHTHYLAMINE, ALPHA-	000134-32-7	x			x	
NAPHTHYLAMINE, N,N-BIS(2CHLOROETHYL)-2-	000494-03-1	x				
NICKEL (II) ACETATE (1:2)	000373-02-4	x				
NICKEL (II) CARBONATE (1:1)	003333-67-3	x				
NICKEL (II) HYDROXIDE	012054-48-7	x				
NICKEL (II) OXIDE (1:1)	001313-99-1	x				
NICKEL (III) HYDROXIDE	012125-56-3	x				
NICKEL BISCYCLOPENDINGADIENE	001271-28-9	x				
NICKEL CARBONYL	013463-39-3	x		x		
NICKEL COMPOUNDS	000000-00-0	x				
NICKEL SULFIDE (3:2)	012035-72-2	x	x			
NICKEL, METALLIC AND ALLOYS	007440-02-0	x				
NICOTINE	000054-11-5		x	x	x	
NIFEDIPINE	021829-25-4		x			
NIRIDAZOLE	000061-57-4	x	x			
NITRIC ACID (FUMING)	007697-37-2			x	x	

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NITRIC OXIDE	010102-43-9			x		x
NITRILOTRIACETIC ACID AND SALTS	000139-13-9	x				
NITRILOTRIACETIC ACID, DISODIUM SALT	015467-20-6	x				
NITRILOTRIACETIC ACID, DISODIUM SALT, MONOHYDRATE	023255-03-0	x				
NITRILOTRIACETIC ACID, MONOSODIUM SALT	018994-66-6	x				
NITRILOTRIACETIC ACID, SODIUM SALT	010042-84-9	x				
NITRILOTRIACETIC ACID, TRISODIUM SALT	005064-31-3	x				
NITRILOTRIACETIC ACID, TRISODIUM SALT, MONOHYDRATE	018662-53-8	x				
NITROACENAPHTHENE, 5-	000602-87-9	x				
NITROANISOLE, 2-	000091-23-6	x				
NITROBENZANTHRONE, 3-	017117-34-9	x				
NITROBENZENE	000098-95-3	x			x	
NITROBIPHENYL, 4-	000092-93-3	x				
NITROCHRYSENE, 6-	007496-02-8	x				
NITROFEN (TECHNICAL-GRADE)	001836-75-5	x			x	
NITROFLUORENE, 2-	000607-57-8	x	x			
NITROFURFURYLIDIENE(5)-AMINO-2-IMIDAZOLIDINONE, 1-	000555-84-0	x				
NITROGEN DIOXIDE	010102-44-0			x		
NITROGEN MUSTARD	000051-75-2	x	x	x	x	
NITROGEN MUSTARD HYDROCHLORIDE	000055-86-7	x	x	x	x	x
NITROGEN MUSTARD N-OXIDE	000126-85-2	x	x	x	x	
NITROGEN MUSTARD N-OXIDE HYDROCHLORIDE	000302-70-5	x	x	x	x	
NITROGEN TETROXIDE	010544-72-6			x		
NITROGEN TRIOXIDE	010544-73-7			x	x	x
NITROMETHANE	000075-52-5	x				
NITROPROPANE, 2-	000079-46-9	x				
NITROPYRENE, 1-	005522-43-0	x	x			
NITROPYRENE, 4-	057835-92-4	x				
NITROSOBUTYL-BUTANOLAMINE, N-	003817-11-6	x				
NITROSODIETHANOLAMINE, N-	001116-54-7	x				
NITROSODIETHYLAMINE, N-	000055-18-5	x	x			
NITROSODIMETHYLAMINE, N-	000062-75-9	x	x			
NITROSODI-n-BUTYLAMINE, N-	000924-16-3	x	x			
NITROSODI-n-PROPYLAMINE, N-	000621-64-7	x	x			
NITROSOMETHYLETHYLAMINE, N-	010595-95-6	x				
NITROSOMETHYLVINYLAMINE, N-	004549-40-0	x		x		
NITROSOMORPHOLINE, N-	000059-89-2	x	x			
NITROSONORNICOTINE, N'-	016543-55-8	x				
NITROSOPIPERIDINE, N-	000100-75-4	x	x			
NITROSOPYRROLIDINE, N-	000930-55-2	x	x			
NITROSOSACOSINE, N-	013256-22-9	x				
NITROSOURETHANE-N-METHYL, N-	000615-53-2	x				
NITROSYL CHLORIDE	002696-92-6					x
NITROTOLUENE, 2-	000088-72-2	x	x			
N-NITROSOMETHYLAMINO-1-(3-PYRIDYL)-1-BUTANONE, 4- (NNK)	064091-91-4	x				
N-NITROSOMETHYLAMINO-PROPIONITRILE, 3-	060153-49-3	x				
NNK(4-(N-(NITROSOMETHYLAMINO)-1-(3-PYRIDYL)-1-BUTANONE)	064091-91-4	x				
NORETHISTERONE	000068-22-4	x	x			
NORGESTREL	006533-00-2		x			
OCHRATOXIN A	000303-47-9	x		x		

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OCTABROMOBIPHENYL	061288-13-9	x				
OIL ORANGE SS	002646-17-5	x				
OSMIUM TETROXIDE	020816-12-0			x		
OXAZEPAM	000604-75-1	x				
OXAZOLIDININE, 2,5-(MORPHOLINOMETHYL)-3-[(5-NITROFURYLIDEN)	003795-88-8	x				
OXYGEN DIFLUORIDE	007783-41-7			x		x
OXYMETHOLONE	000434-07-1	x	x			
OXYTETRACYCLINE AND COMPOUNDS (INTERNAL USE)	000079-57-2		x			
OZONE	010028-15-6		x	x		
PALYGORSKITE (FIBERS >5 MICROMETERS)	012174-11-7	x				
PANFURAN (CONTAINING DIHYDROXMETHYLFURATRIZINE)	000794-93-4	x				
PARAMETHADIONE	000115-67-3		x			
PARATHION	000056-38-2		x	x	x	
PCB (AROCLOR 1254)	011097-69-1	x	x		x	
PCB (AROCLOR 1260)	011096-82-5	x	x		x	
PENICILLAMINE	002219-30-9		x			
PENTABORANE	019624-22-7			x		
PENTACHLOROBIPHENYL	025429-29-2	x				
PENTACHLOROBIPHENYL, 3,4,5,3',4'- (PCB-126)	057465-28-8	x				
PENTACHLOROPHENOL	000087-86-5			x	x	
PENTOSTATIN	053910-25-1		x			
PHENACETIN	000062-44-2	x				
PHENAZOPYRIDINE HYDROCHLORIDE	000136-40-3	x				
PHENOBARBITAL	000050-06-6	x	x			
PHENOTHALEIN	000077-09-8	x				
PHENOXYBENZAMINE HYDROCHLORIDE	000062-92-3	x	x			
PHENYL GLYCIDYL ETHER	000122-60-1	x			x	
PHENYTOIN	000057-41-0	x	x			
PHLP (2-AMINO-1-METHYL-6-PHENYLIMIDAZO[4,5-B]PYRIDINE)	105650-23-5	x				
PHOSGENE	000075-44-5			x		x
PHOSPHINE	007803-51-2			x		x
PHOSPHORUS (YELLOW)	007723-14-0			x		
PHOSPHORUS OXYCHLORIDE	010025-87-3					x
PHOSPHORUS TRICHLORIDE	007719-12-2			x		x
PIPERAZINE ESTRONE SULFATE	007280-37-7	x				
PIPOBROMAN	000054-91-1		x			
PLICAMYCIN	018378-89-7		x			
POLYBROMINATED BIPHENYL (FF-1)	067774-32-7	x	x			
POLYBROMINATED BIPHENYLS	059536-65-1	x	x			
POLYCHLORINATED BIPHENYLS	001336-36-3	x	x			
POLYCHLOROPHENOLS	000000-00-0	x				
POLYCYCLIC AROMATIC HYDROCARBONS	000000-00-0	x				
PONCEAU 3R	003564-09-8	x				
PONCEAU MX	003761-53-3	x				
POTASSIUM BROMATE	007758-01-2	x				
POTASSIUM CHROMATE (VI)	007789-00-6	x	x			
POTASSIUM DICHROMATE (VI)	007778-50-9	x	x			
PROCARBAZINE HYDROCHLORIDE	000366-70-1	x	x			
PROGESTERONE	000057-83-0	x	x			
PROPANE SULTONE, 1,3-	001120-71-4	x	x		x	

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PROPANEDIOL, 2,2-BIS-(BROMOETHYL)-1,3-	003296-90-0	x				
PROPARGYL BROMIDE	000106-96-7			x		
PROPIOLACTONE, BETA	000057-57-8	x	x			
PROPIONIC NITRILE	000107-12-0			x	x	
PROPYLENE OXIDE	000075-56-9	x	x	x	x	
PROPYLPHOSPHONOTHIOIC DICHLORIDE	002524-01-8			x	x	x
PROPYLPHOSPHONYL DIFLUORIDE	000690-14-2			x	x	x
PROPYLTHIOURACIL	000051-52-5	x	x			
QUARTZ [SILICA,CRYSTALLINE (RESPIRABLE)]	014808-60-7	x				
RADON AND ITS DECAY PRODUCTS	010043-92-9	x				
REFRACTORY CERAMIC FIBER	000000-00-0	x				
RESERPINE	000050-55-5	x	x			
RETINOIC ACID, 1,3-CIS-	004759-48-2		x			
RIBVARIN	036791-04-5		X			
RICIN	009009-86-3			x		
RIDDELLINE	023246-96-0	x				
RIFAMPIN	013292-46-1		x			
ROCKWOOL	000000-00-0	x				
SACCHARIN	000081-07-2	x				
SACCHARIN, CALCIUM SALT	006485-34-3	x				
SACCHARIN, SODIUM SALT	000128-44-9	x				
SAFROLE	000094-59-7	x	x			
SARIN	000107-44-8			x	x	x
SAXITOXIN	035523-89-8			x		
SELENIUM HEXAFLUORIDE	007783-79-1			x		x
SENARMONITE	012412-52-1	x				
SESQUIMUSTARD	003563-36-8			x		x
SHALE-OILS	068308-34-9	x			x	
SILICA, CRYSTALLINE CRISTOBALITE	014464-46-1	x				
SILICA, CRYSTALLINE TRIDYMITE	015468-32-3	x				
SILICA, CRYSTALLINE TRIPOLI	001317-95-9	x				
SILICA,CRYSTALLINE (RESPIRABLE)	000000-00-0	x				
SILICIC ACID BERYLLIUM SALT	015191-85-2	x				
SODIUM AZIDE	026628-22-8		x	x	x	
SODIUM DICHROMATE (VI)	010588-01-9	x	x		x	
SODIUM FLUOROACETATE	000062-74-8			x	x	
SODIUM ortho-PHENYLPHENATE	000132-27-4	x				
SOMAN	000096-64-0			x	x	x
SOOTS, TARS, MINERAL OILS	000000-00-0	x				
STEPTOMYCIN SULFATE	003801-74-0		x			
STERIGMATOCYSTIN	010048-13-2	x	x			
STIBINE	007803-52-3			x		x
STREPTOZOTOCIN	018883-66-4	x	x			
STRONTIUM CHROMATE (VI)	007789-06-2	x				
STRYCHNINE	000057-24-9			x		
STYRENE	000100-42-5	x	x		x	
STYRENE-7,8-OXIDE	000096-09-3	x	x		x	
SULFALLATE	000095-06-7	x			x	
SULFUR MUSTARD (MUSTARD GAS (H))	000505-60-2			x	x	x
SULFUR TETRAFLUORIDE	007783-60-0			x		x

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SULFUR TRIOXIDE	007446-11-9	x				
SULFURIC ACID	007664-93-9	x				
SULFURIC ACID, DIISOPROPYL ESTER	002973-10-6	x			x	
SULFURIC ACID, FUMING, MIST	008014-95-7	x				
SULINDAC	038194-50-2		x			
TABUN	000077-81-6			x	x	x
TALC CONTAINING ASBESTIFORM FIBRES	000000-00-0	x				
TAMOXIFEN AND SALTS	010540-29-1	x	x			
TELLURIUM HEXAFLUORIDE	007783-80-4			x	x	x
TERANITROMETHANE	000509-14-8	x				
TESTOSTERONE CYPIONATE	000058-20-8		x			
TESTOSTERONE ENANTHATE	000315-37-7		x			
TETRACHLORODIBENZO-para-DIOXIN, 2,3,7,8- (TCDD)	001746-01-6	x	x	x	x	
TETRACHLOROETHYLENE	000127-18-4	x	x		x	
TETRACYCLINES	000060-54-8		x			
TETRAETHYL LEAD	000078-00-2	x	x	x	x	
TETRAETHYL PYROPHOSPHATE	000107-49-3			x	x	
TETRAETHYLTHIURAM DISULFIDE	000097-77-8		x		x	
TETRAFLUORETHYLENE	000116-14-3	x				
TETRAMETHYL SUCCINONITRILE	003333-52-6			x	x	
TERANITROMETHANE	000509-14-8	x				
TETRODOTOXIN	004368-28-9			x		
THALIDOMIDE	000050-35-1		x		x	
THIAZOLE, 2 (2-FORMYLHYDROZINE)-4- (5-NITRO-2-FURYL)	003570-75-0	x				
THIOACETAMIDE	000062-55-5	x	x			
THIODIANILINE, 4,4'-	000139-65-1	x				
THIODIGLYCOL	000111-48-8					x
THIOGUANINE	000154-42-7		x			
THIOPHENOL	000108-98-5			x	x	
THIOTEPA	000052-24-4	x	x	x		
THIOURACIL	000141-90-2	x	x			
THIOUREA	000062-56-6	x	x			
THORIUM DIOXIDE	001314-20-1	x				
TITANIUM DIOXIDE	013463-67-7	x				
TITANIUM TETRACHLORIDE	007550-45-0					x
TOBACCO PRODUCTS, SMOKELESS	000000-00-0	x				
TOBACCO SMOKE	000000-00-0	x	x			
TOLUENE	000108-88-3		x		x	
TOLUENE DIISOCYANATE, 1,3-	026471-62-5	x	x			
TOLUENE DIISOCYANATE, 2,4-	000584-84-9	x				
TOLUENE DIISOCYANATE, 2,6-	000091-08-7	x				
TOLUIDINE HYDROCHLORIDE, O-	000636-21-5	x				
TOLUIDINE, ORTHO-	000095-53-4	x		x	x	
TONIPOSIDE	029767-20-2	x	x			
TOXAPHENE (POLYCHLORINATED CAMPHENES)	008001-35-2	x	x		x	
TREOSULPHAN	000299-75-2	x	x			
TRICHLOROETHYLENE	000079-01-6	x	x			
TRICHLOROMETHINE	000817-09-4	x				

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TRICHLOROPHENOL, 2,4,6-	000088-06-2	x			x	
TRICHLOROPROPANE, 1,2,3-	000096-18-4	x			x	
TRICHLOROSILANE	010025-78-2					x
TRIMETHADIONE	000127-48-0		x			
TRIPHENYLTIN HYDROXIDE	000076-87-9		x		x	
TRIS (2,3-DIBROMOPROPYLPHOSPHATE)	000126-72-7	x	x		x	
TRP-P-1(3-AMINO-1,4-DIMETHYL-5H-PYRIDO[4,3-b]INDOLE)	062450-07-1	x				
TRP-P-2(3-AMINO-1-METHYL-5H-PYRIDO[4,3-b]INDOLE)	062450-06-0	x	x			
TRYPAN BLUE	000072-57-1	x				
URACIL MUSTARD	000066-75-1	x				
URETHANE	000051-79-6	x	x			
VALPROIC ACID	000099-66-1		x			
VANADIUM PENTOXIDE	001314-62-1			x		
VENOM, SNAKE, CROTALUS ADAMANTEUS	000000-00-0			x		
VENOM, SNAKE, CROTALUS ATROX	000000-00-0			x		
VINBLASTINE SULFATE	000143-67-9		x			
VINCRISTINE SULFATE	002068-78-2		x			
VINYL ACETATE	000108-05-4	x	x			
VINYL BROMIDE	000593-60-2	x				
VINYL CHLORIDE	000075-01-4	x	x			
VINYL FLUORIDE	000075-02-5	x				
VINYL-1-CYCLOHEXENE DIEPOXIDE, 4-	000106-87-6	x			x	
VINYLCYCLOHEXENE, 4-	000100-40-3	x				
WARAFIN	000081-81-2		x		x	
WELDING FUMES	000000-00-0	x				
WOOD DUST	013983-17-0	x				
XYLIDINE	001300-73-8	x		x	x	
ZALCITABINE	007481-89-2	x				
ZIDOVUDINE (AZT)	030516-87-1	x				
ZINC CHROMATE (VI) HYDROXIDE HYDRATE	015930-94-6	x	x			
ZINC CHROMATE (VI)HYDROXIDE	001300-73-8	x	x			

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ACID MIST, STRONG INORGANIC	000000-00-0	x				
ANGIOTENSIN CONVERTING ENZYME (ACE) INHIBITORS	000000-00-0		x			
ANILINE AND COMPOUNDS	000000-00-0			x	x	
ARECA NUT	000000-00-0	x				
ARISTOLOCHIC ACIDS	000000-00-0	x				
ARSENIC ACID AND SALTS	000000-00-0			x	x	
ARSENIUS ACID AND SALTS	000000-00-0			x		
ARSONIC ACID AND SALTS	000000-00-0			x		
BARBITURATES	000000-00-0		x			
BOTULINUM TOXINS	000000-00-0			x		
BRACKEN FERN	000000-00-0	x				
CERAMIC FIBERS (RESPIRABLE SIZE)	000000-00-0	x				
CHLOROPHENOXY HERBICIDES	000000-00-0	x			x	
CYANIDE AND COMPOUNDS	000000-00-0			x	x	
CYANOGEN AND COMPOUNDS	000000-00-0			x		
DIESEL EXHAUST	000000-00-0	x				
DIESEL FUEL MARINE	000000-00-0	x				
E-GLASS	000000-00-0	x				
ETHYLENE GLYCOL ETHERS	000000-00-0		x			
GASOLINE, ENGINE EXHAUST FUMES	000000-00-0	x				
GLASS FIBERS, SPECIALTY (E-GLASS, '475')	000000-00-0	x				
GLASSWOOL (RESPIRABLE SIZE)	000000-00-0	x				
HEPATITIS B VIRUS	000000-00-0	x				
HEPATITIS C VIRUS	000000-00-0	x				
HUMAN IMMUNODEFICIENCY VIRUS TYPE 1	000000-00-0	x				
HUMAN PAPILOMAS VIRUSES: SOME GENITAL-MUCOSAL	000000-00-0	x				
METHYL MERCURY AND COMPOUNDS	000000-00-0			x	x	
MINERAL OILS, UNTREATED AND MILDLY TREATED	000000-00-0	x			x	
NICKEL COMPOUNDS	000000-00-0	x				
POLYCHLOROPHENOLS	000000-00-0	x				
POLYCYCLIC AROMATIC HYDROCARBONS	000000-00-0	x				
REFRACTORY CERAMIC FIBER	000000-00-0	x				
ROCKWOOL	000000-00-0	x				
SILICA, CRYSTALLINE (RESPIRABLE)	000000-00-0	x				
SOOTS, TARS, MINERAL OILS	000000-00-0	x				
TALC CONTAINING ASBESTIFORM FIBRES	000000-00-0	x				
TOBACCO PRODUCTS, SMOKELESS	000000-00-0	x				
TOBACCO SMOKE	000000-00-0	x	x			
VENOM, SNAKE, CROTALUS ADAMANTEUS	000000-00-0			x		
VENOM, SNAKE, CROTALUS ATROX	000000-00-0			x		
WELDING FUMES	000000-00-0	x				
FORMALDEHYDE	000050-00-0	x	x		x	
PHENOBARBITAL	000050-06-6	x	x			
MITOMYCIN C	000050-07-7	x	x	x		
DDT	000050-29-3	x	x		x	
BENZO[a]PYRENE	000050-32-8	x	x			
THALIDOMIDE	000050-35-1		x		x	
CLOMIPHENE CITRATE	000050-41-9		x			

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RESERPINE	000050-55-5	x	x			
ACTINOMYCIN D	000050-76-0		x		x	
ASPIRIN	000050-78-2		x			
FLUOROURACIL	000051-21-8		x			
DINITROPHENOL, 2,4-	000051-28-5			x	x	
PROPYLTHIOURACIL	000051-52-5	x	x			
HN2 (NITROGEN MUSTARD-2)	000051-75-2			x	x	x
NITROGEN MUSTARD	000051-75-2	x	x	x	x	
URETHANE	000051-79-6	x	x			
THIOTEPA	000052-24-4	x	x	x		
HALOPERIDOL	000052-86-8		x			
DIBENZ[a,h]ANTHRACENE	000053-70-3	x	x			
ACETYLAMINOFLUORENE, 2-	000053-96-3	x				
NICOTINE	000054-11-5		x	x	x	
AMINOPTERIN	000054-62-6		x			
PIPOBROMAN	000054-91-1		x			
NITROSODIETHYLAMINE, N-	000055-18-5	x	x			
NITROGEN MUSTARD HYDROCHLORIDE	000055-86-7	x	x	x	x	x
BUTANEDIOL DIMETHYLSULPHONATE, 1,4- (BUSULFAN)	000055-98-1	x	x			
METHYLTHIOURACIL	000056-04-2	x	x			
CARBON TETRACHLORIDE	000056-23-5	x			x	
PARATHION	000056-38-2		x	x	x	
DIETHYLSTILBOESTROL	000056-53-1	x	x		x	
BENZ[a]ANTHRACENE	000056-55-3	x			x	
CHLORAMPHENICOL	000056-75-7	x	x			
CYANIDE	000057-12-5			x	x	
DIMETHYLHYDRAZINE, 1,1-	000057-14-7	x	x		x	
STRYCHNINE	000057-24-9			x		
DIPHENYLHYDANTOIN	000057-41-0	x				
PHENYTOIN	000057-41-0	x	x			
PROPIOLACTONE, BETA	000057-57-8	x	x			
CHLORDANE	000057-74-9	x	x		x	
PROGESTERONE	000057-83-0	x	x			
METHYLTESTOSTERONE	000058-18-4		x			
TESTOSTERONE CYPIONATE	000058-20-8		x			
CHLORDIAZEPOXIDE	000058-25-3		x			
HEXACHLOROBENZENE, GAMMA	000058-89-9	x	x		x	
METHYLAMINOPTERIN	000059-05-2		x			
BROMODEOXYURIDINE	000059-14-3		x			
NITROSOMORPHOLINE, N-	000059-89-2	x	x			
LEVODOPA	000059-92-7		x			
AMINOAZOBENZENE, para-	000060-09-3	x				
DIMETHYLAMINOAZOBENZENE, 4-	000060-11-7	x	x			
METHYL HYDRAZINE	000060-34-4		x	x	x	
ACETAMIDE	000060-35-5	x				
TETRACYCLINES	000060-54-8		x			
METHIMAZOLE	000060-56-0		x			
NIRIDAZOLE	000061-57-4	x	x			
AMITROLE	000061-82-5	x				
PHENACETIN	000062-44-2	x				

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ETHYL METHANESULPHONATE	000062-50-0	x	x			
ANILINE	000062-53-3			x	x	
THIOACETAMIDE	000062-55-5	x	x			
THIOUREA	000062-56-6	x	x			
DICHLORVOS	000062-73-7	x	x	x	x	
SODIUM FLUOROACETATE	000062-74-8			x	x	
NITROSODIMETHYLAMINE,N-	000062-75-9	x	x			
PHENOXYBENZAMINE HYDROCHLORIDE	000062-92-3	x	x			
NAPHTHYL METHYLCARBAMATE	000063-25-2		x			
DIETHYL SULPHATE	000064-67-5	x			x	
DEMECLOCYCLINE HYDROCHLORIDE (INTERNAL USE)	000064-73-3		x			
COLCHICINE	000064-86-8		x	x		
METHYL METHANESULPHONATE	000066-27-3	x	x			
URACIL MUSTARD	000066-75-1	x				
DICUMAROL	000066-76-2		x			
CYCLOHEXIMIDE	000066-81-9		x			
CHLOROFORM	000067-66-3	x	x			
HEXACHLOROETHANE	000067-72-1	x				
DIMETHYLFORMAMIDE	000068-12-2		x		x	
NORETHISTERONE	000068-22-4	x	x			
METHYL-N-NITRO-N'-NITROSOGUANIDINE,N- (MNNG)	000070-25-7	x	x			
BENZENE	000071-43-2	x	x		x	
COBALT ACETATE	000071-48-7	x				
MEDROXYPROGESTERONE ACETATE	000071-58-9	x	x			
DIGITOXIN	000071-63-6		x	x	x	x
ENDRIN	000072-20-8			x	x	
MESTRANOL	000072-33-3		x			
TRYPAN BLUE	000072-57-1	x				
METHYL BROMIDE	000074-83-9		x	x	x	
METHYL CHLORIDE	000074-87-3		x			
HYDROGEN CYANIDE	000074-90-8			x	x	x
VINYL CHLORIDE	000075-01-4	x	x			
VINYL FLUORIDE	000075-02-5	x				
DIMETHYLARSENIC ACID	000075060-5	x	x			
ACETALDEHYDE	000075-07-0	x				
DICHLOROMETHANE	000075-09-2	x	x			
CARBON DISULFIDE	000075-15-0		x		x	
ETHYLENE OXIDE	000075-21-8	x	x			
BROMOPROPANE, 2-	000075-26-3		x			
BROMODICHLOROMETHANE	000075-27-4	x	x			
PHOSGENE	000075-44-5			x		x
NITROMETHANE	000075-52-5	x				
METHYLDICHLOROSILANE	000075-54-7					x
METHYLAZIRIDINE, 2- (PROPYLENEIMINE)	000075-55-8	x	x	x	x	
PROPYLENE OXIDE	000075-56-9	x	x	x	x	
ACETONE CYANOHYDRIN, STABILIZED	000075-86-5			x		x
CHLOROPICRIN	000076-06-2			x		
FLUOXYMESTERONE	000076-43-7		x			
HEPTACHLOR	000076-44-8	x	x	x	x	
TRIPHENYLTIN HYDROXIDE	000076-87-9		x		x	

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PHENOTHALEIN	000077-09-8	x				
DIMETHYL SULFATE	000077-78-1	x	x	x	x	
TABUN	000077-81-6			x	x	x
TETRAETHYL LEAD	000078-00-2	x	x	x	x	
DIETHYL S-[2-(DIETHYLAMINO)ETHYL] PHOSPHOROTHIOLATE, O,O-	000078-53-5			x		x
ISOPRENE	000078-79-5	x				
TRICHLOROETHYLENE	000079-01-6	x	x			
CHLOROACETYL CHLORIDE	000079-04-9					x
ACRYLAMIDE	000079-06-1	x	x		x	
DIBROMOACETIC ACID	000079-43-6	x			x	
DICHLOROACETIC ACID	000079-43-6	x			x	
DIMETHYLCARBAMOYL CHLORIDE	000079-44-7	x	x			
NITROPROPANE, 2-	000079-46-9	x				
OXYTETRACYCLINE AND COMPOUNDS (INTERNAL USE)	000079-57-2		x			
SACCHARIN	000081-07-2	x				
AMINO-2,4-DIBROMOANTHRAQUINONE	000081-49-2	x				
WARAFIN	000081-81-2		x		x	
AMINO-2-METHYLANTHRAQUINONE, 1-	000082-28-0	x				
DI-N-BUTYL PHTHALATE	000084-74-2		x			
DI-N-HEXYL PHTHALATE	000084-75-3		x			
PENTACHLOROPHENOL	000087-86-5			x	x	
TRICHLOROPHENOL, 2,4,6-	000088-06-2	x			x	
NITROTOLUENE, 2-	000088-72-2	x	x			
DINOSEB	000088-85-7		x		x	
ANISIDINE, ORTHO-	000090-04-0	x			x	
MICHLER'S KETONE	000090-94-8	x				
TOLUENE DIISOCYANATE, 2,6-	000091-08-7	x				
NAPHTHALENE	000091-20-3	x				
NITROANISOLE, 2-	000091-23-6	x				
NAPHTHYLAMINE, 2-	000091-59-8	x	x		x	
DICHLOROBENZIDINE, 3,3'-	000091-94-1	x			x	
AMINODIPHENYL, 4-	000092-67-1	x	x		x	
BENZIDINE AND BENZIDINE BASED DYES	000092-87-5	x			x	
NITROBIPHENYL, 4-	000092-93-3	x				
METHYLEUGENOL	000093-15-2	x				
2,4,5-T	000093-76-5		x		x	
DIHYDROSAFROLE	000094-58-6	x				
SAFROLE	000094-59-7	x	x			
SULFALLATE	000095-06-7	x			x	
TOLUIDINE, ORTHO-	000095-53-4	x		x	x	
CHLORO-O-TOLUIDINE, 4-	000095-69-2	x	x			
DIAMINOTOLUENE, 2,4-	000095-80-7	x	x			
CHLORO-O-PHENYLENEDIAMINE, 4-	000095-83-0	x	x			
STYRENE-7,8-OXIDE	000096-09-3	x	x		x	
DIBROMO-3-CHLOROPROPANE, 1,2-	000096-12-8	x	x		x	
DIBROMO-1-PROPANOL, 2,3-	000096-13-9	x				
TRICHLOROPROPANE, 1,2,3-	000096-18-4	x			x	
DICHLORO-2-PROPANOL, 1,3-	000096-23-1	x			x	
MONOCHLORO-1,2-PROPANDIOL, 3-	000096-24-2	x	x		x	
ETHYLENE THIOUREA	000096-45-7	x				

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SOMAN	000096-64-0	-	-	x	x	x
ARSONIC ACID	000097-44-9	x	x	x		
AMINOAZOTOLUENE,ortho-	000097-56-3	x	x			
TETRAETHYLTHIURAM DISULFIDE	000097-77-8		x		x	
BENZOYLTRICHLORIDE(COMBINED EXPOSURE W/ BENZOYL CHLORIDE)	000098-07-7	x			x	
METHYLSTYRENE, ALPHA	000098-83-9	x				
BENZOYL CHLORIDE(COMBINED EXPOSURE WITH CHLOROTOLUENES)	000098-88-4	x			x	
NITROBENZENE	000098-95-3	x			x	
VALPROIC ACID	000099-66-1		x			
ETHANEDIOL, N,N- (2-DIETHYLAMINO)	000100-38-9					x
VINYLCYCLOHEXENE, 4-	000100-40-3	x				
STYRENE	000100-42-5	x	x		x	
BENZYL CHLORIDE(COMBINED EXPOSURE W/ BENZOYL CHLORIDE)	000100-44-7	x	x		x	
NITROSOPIPERIDINE, N-	000100-75-4	x	x			
METHYLENE BIS(2-CHLOROANILINE), 4,4- (MOCA)	000101-14-4	x			x	
METHYLENEBIS(N,N-DIMETHYL)BENZENAMINE, 4,4'	000101-61-1	x				
METHYLENEDIANILINE, 4,4'	000101-77-9	x				
DIAMINODIPHENYL ETHER	000101-80-4	x				
DIGLYCIDYL RESORCINOL ETHER	000101-90-6	x				
DICHLOROBENZENE, para-	000106-46-7	x				
CHLOROANILINE, PARA	000106-47-8	x			x	
VINYL-1-CYCLOHEXENE DIEPOXIDE, 4-	000106-87-6	x			x	
EPOXYBUTANE, 1,2-	000106-88-7	x				
EPICHLOROHYDRIN	000106-89-8	x	x		x	
ETHYLENE DIBROMIDE	000106-93-4	x	x		x	
BROMOPROPANE, 1-	000106-94-5		x			
PROPARGYL BROMIDE	000106-96-7			x		
BUTADIENE,1,3-	000106-99-0	x				
ACROLEIN	000107-02-8		x	x	x	
DICHLOROETHANE, 1,2-	000107-06-2	x	x		x	
ETHYLENE CHLOROHYDRIN	000107-07-3			x	x	
PROPIONIC NITRILE	000107-12-0			x	x	
ACRYLONITRILE	000107-13-1	x	x	x	x	
CHLOROMETHYL ETHER,BIS- (TECHNICAL GRADE)	000107-30-2	x	x		x	
SARIN	000107-44-8			x	x	x
TETRAETHYL PYROPHOSPHATE	000107-49-3			x	x	
ETHANETHIOL, N,N- (2-DIMETHYLAMINO)	000108-02-1					x
VINYL ACETATE	000108-05-4	x	x			
METHYL ISOBUTYL KETONE	000108-10-1	x				
TOLUENE	000108-88-3		x		x	
THIOPHENOL	000108-98-5			x	x	
FURAN	000110-00-9	x			x	
DIETHANOLAMINE	000111-42-2	x			x	
THIODIGLYCOL	000111-48-8					x
ADIPONITRILE	000111-69-3			x		
AZASERINE	000115-02-6	x				
CHLORENDIC ACID	000115-28-6	x				
ENDOSULFAN	000115-29-7		x	x	x	
PARAMETHADIONE	000115-67-3		x			
TETRAFLUORETHYLENE	000116-14-3	x				

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ANTHRAQUINONE, 1,8-DIHYDROXY	000117-10-2	x				
ANISINDIONE	000117-37-3		x			
AMINOANTHRAQUINONE, 2-	000117-79-3	x				
DI(2-ETHYLHEXYL)PHTHALATE	000117-81-7	x				
DIOCTYL PHTHALATE	000117-81-7		x			
HEXACHLOROBENZENE	000118-74-1	x	x		x	
BENZOPHENONE	000119-61-9	x				
DIMETHOXYBENZIDINE, 3,3'- (o-DIANISIDINE)	000119-90-4	x				
DIMETHYLBENZIDINE, 3,3'- (o-TOLIDINE)	000119-93-7	x			x	
CRESIDINE, para-	000120-71-8	x				
CATECHOL	000120-80-9	x			x	
DINITROTOLUENE, 2,4-	000121-14-2	x	x		x	
PHENYL GLYCIDYL ETHER	000122-60-1	x			x	
HYDRAZOBENZENE	000122-66-7	x				
DIOXANE, 1,4-	000123-91-1	x			x	
METHYLARSONIC ACID	000124-58-3	x	x			
AMINOGLUTETHIMIDE	000125-84-8		x		x	
GRISEOFULVIN	000126-07-8	x	x			
TRIS (2,3-DIBROMOPROPYLPHOSPHATE)	000126-72-7	x	x		x	
NITROGEN MUSTARD N-OXIDE	000126-85-2	x	x	x	x	
CHLOROPRENE	000126-99-8	x	x		x	
HYDROXYUREA	000127-07-1		x			
TETRACHLOROETHYLENE	000127-18-4	x	x		x	
DIMETHYLACETAMIDE, N,N-	000127-19-5		x		x	
TRIMETHADIONE	000127-48-0		x			
SACCHARIN, SODIUM SALT	000128-44-9	x				
METHYL-1-NITROANTHRAQUINONE, 2- (UNCERTAIN PURITY)	000129-15-7	x				
SODIUM ortho-PHENYLPHENATE	000132-27-4	x				
ANISIDINE HYDROCHLORIDE, o-	000134-29-2	x				
NAPHTHYLAMINE, ALPHA-	000134-32-7	x			x	
CUPFERRON	000135-20-6	x				
DIAMINO BENZENE	000136-35-6	x				
DIAZOAMINO BENZENE	000136-35-6	x			x	
PHENAZOPYRIDINE HYDROCHLORIDE	000136-40-3	x				
NITRILOTRIACETIC ACID AND SALTS	000139-13-9	x				
THIODIANILINE, 4,4'-	000139-65-1	x				
ARAMITE	000140-57-8	x				
ETHYL ACRYLATE	000140-88-5	x			x	
THIOURACIL	000141-90-2	x	x			
KEPONE (CHLORDECONE)	000143-50-0	x	x		x	
VINBLASTINE SULFATE	000143-67-9		x			
CYTARABINE	000147-94-4		x			
MELPHALAN	000148-82-3	x	x			
ETHYLHEXANOIC ACID	000149-57-5		x		x	
AZIRIDINE	000151-56-4	x	x		x	
HALOTHANE	000151-67-7		x			
THIOGUANINE	000154-42-7		x			
BISCHLOROETHYL NITROSOUREA (BCNU)	000154-93-8	x	x	x		
DIBENZO[a,i]PYRENE	000189-55-9	x				
DIBENZO[a,h]PYRENE	000189-64-0	x				

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DIBENZO[a,l]PYRENE	000191-30-0	x				
DIBENZO[a,e]PYRENE	000192-65-4	x				
INDENO[1,2,3-cd]PYRENE	000193-39-5	x				
DIBENZO[c,g]CARBAZOLE, 7H-	000194-59-2	x				
BENZ[c]PHENANTHRENE	000195-19-7	x				
BENZ[j]ACEANTHRYLENE	000202-33-5	x				
BENZO[j]FLUORANTHENE	000205-82-3	x				
BENZO[b]FLUORANTHENE	000205-99-2	x				
BENZO[k]FLUORANTHENE	000207-08-9	x				
CHRYSENE	000218-01-9	x				
DIBENZ[a,j]ACRIDINE	000224-42-0	x				
DIBENZ[c,h]ACRIDINE	000224-53-3	x				
DIBENZ[a,h]ACRIDINE	000226-36-8	x				
BENZOFURAN	000271-89-6	x				
CARBAMAZEPINE	000298-46-4		x			
DIMETHANESULFONATE, 1,4-	000299-75-2		x			
TREOSULPHAN	000299-75-2	x	x			
LEAD ACETATE	000301-04-2	x	x			
HYDRAZINE	000302-01-2	x	x			x
NITROGEN MUSTARD N-OXIDE HYDROCHLORIDE	000302-70-5	x	x	x		x
ALL-TRANS RETINOIC ACID	000302-79-4		x			x
LASIOCARPINE	000303-34-4	x	x			
GOSSYPOL	000303-45-7		x			
OCHRATOXIN A	000303-47-9	x		x		
CHLORAMBUCIL	000305-03-3	x	x			
MONOCROTALINE	000315-22-0	x	x			
TESTOSTERONE ENANTHATE	000315-37-7		x			
LINDANE, ALPHA	000319-84-6	x				
LINDANE, BETA	000319-85-7	x				
AZACYTIDINE	000320-67-2	x				
LINURON	000330-55-2		x			
CAFFEIC ACID	000331-39-5	x				
DIAZOMETHANE	000334-88-3			x		
PROCARBAZINE HYDROCHLORIDE	000366-70-1	x	x			
NICKEL (II) ACETATE (1:2)	000373-02-4	x				
ERGOTAMINE TARTRATE	000379-79-3		x			
CYANAMIDE	000420-04-2			x		x
METHYLFLUOROSULFONATE	000421-20-5			x		
OXYMETHOLONE	000434-07-1	x	x			
CHLORDIAZEPOXIDE HYDROCHLORIDE	000438-41-5		x			
CONESTORAL	000438-67-5	x				
DIAZEPAM	000439-14-5		x			x
METRONIDAZOLe	000443-48-1	x	x			
AZATHIOPRINE	000446-86-6	x	x			
CYANOGEN	000460-19-5			x		
METHOXYPSORALEN, 5-	000484-20-8	x				
AURAMINE	000492-80-8	x	x			
NAPHTHYLAMINE, N,N-BIS(2CHLOROETHYL)-2-	000494-03-1	x				
MUSTARD GAS (SULPHUR MUSTARD)	000505-60-2	x	x	x		x
SULFUR MUSTARD (MUSTARD GAS (H))	000505-60-2			x		x

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CYANOGEN CHLORIDE	000506-77-4			x	x	x
TERANITROMETHANE	000509-14-8	x				
TETRANITROMETHANE	000509-14-8	x				
CHLORO-2-METHYLPROPENE, 1-	000513-37-1	x				
CADMIUM CARBONATE	000513-78-0	x	x			
COBALT CARBONATE	000513-79-1	x				
MERPHALAN	000531-76-0	x				
N-[4-(5-NITR-2-FURYL)-2-THIAZOYL]ACETAMIDE	000531-82-8	x				
ETHIONAMIDE	000536-33-4		x			
HN1 (NITROGEN MUSTARD-1)	000538-07-8			x	x	x
DIMETHYLHYDRAZINE, 1,2-	000540-73-8		x		x	
LEWISITE 1	000541-25-3			x	x	x
DICHLOROPROPENE, 1,3- (TECHNICAL-GRADE)	000542-75-6	x			x	
CHLOROMETHYL ETHER,BIS-	000542-88-1	x	x		x	
ACETOHYDROXAMIC ACID	000546-88-3		x		x	
HN3 (NITROGEN MUSTARD-3)	000555-77-1			x	x	x
NITROFURFURYLIDIENE(5)-AMINO-2-IMIDAZOLIDINONE, 1-	000555-84-0	x				
GLYCIDOL	000556-52-5	x	x		x	
CHLORO-2-METHYLPROPENE, 3-	000563-47-3	x	x			
DIEPOXYBUTANE, 3,4-,MESO 1,2	000564-00-1	x			x	
DOXYCYCLINE AND COMPOUNDS (INTERNAL USE)	000564-25-0		x			
C.I. BASIC RED 9 MONOHYDROCHLORIDE	000569-61-9	x				
TOLUENE DIISOCYANATE, 2,4-	000584-84-9	x				
METHYLAZOXYMETHANOL	000590-96-5	x				
METHYLAZOXYMETHANOL ACETATE	000592-62-1	x	x			
VINYL BROMIDE	000593-60-2	x				
DIMETHYL MERCURY	000593-74-8		x	x	x	
METHYLDICHLOROARSINE	000593-89-5	x	x	x		
MEGESTROL ACETATE	000595-33-5		x			
BROMOACETONE	000598-31-2			x		x
NITROACENAPHTHENE, 5-	000602-87-9	x				
OXAZEPAM	000604-75-1	x				
DINITROTOLUENE, 2,6-	000606-20-2		x		x	
NITROFLUORENE, 2-	000607-57-8	x	x			
HEXACHLOROHEXANES (ALL ISOMERS)	000608-73-1	x			x	
DICHLOROBENZIDINE, DIHYDROCHLORIDE, 3,3' -	000612-83-9	x			x	
DIACETYL BENZIDINE,N,N'-	000613-35-4	x				
DIAMINOANISOLE, 2,4- (AND ITS SALTS)	000615-05-4	x	x			
NITROSURETHANE-N-METHYL,N-	000615-53-2	x				
NITROSODI-n-PROPYLAMINE, N-	000621-64-7	x	x			
METHYL ISOCYANATE	000624-83-9			x	x	
CARBON MONOXIDE	000630-08-0		x			
MAGENTA (CONTAINING CI BASIC RED 9)	000632-99-5	x				
TOLUIDINE HYDROCHLORIDE, O-	000636-21-5	x				
AMANTADINE HYDROCHLORIDE	000665-66-7		x		x	
METHYLPHOSPHONOTHIOIC DICHLORIDE	000676-98-2					x
METHYL DIFLUOROPHOSPHITE (DF)	000676-99-3			x	x	x
ISOPROPYLPHOSPHONYL DIFLUORIDE	000677-42-9			x	x	x
DIMETHYL PHOSPHORAMIDIC DICHLORIDE, N,N-	000677-43-0					x
HEXAMETHYLPHOSPHORAMIDE	000680-31-9	x	x		x	

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METHYL-N-NITROSOUREA,N-	000684-93-5	x	x			
PROPYLPHOSPHONYL DIFLUORIDE	000690-14-2			x	x	x
METHYLIMIDAZOLE, 2-	000693-98-1	x				
AMINO-5-(5-NITRO-2-FURYL)-1,3,4-THIADIAZOLE, 2-	000712-68-5	x				
ETHYL PHOSPHONYL DIFLUORIDE	000753-98-0			x	x	x
ETHYL-N-NITROSOUREA,N-	000759-73-9	x	x			
GLYCIDALDEHYDE	000765-34-4	x			x	
PANFURAN (CONTAINING DIHYDROXMETHYLFURATRIZINE)	000794-93-4	x				
TRICHLOROMETHINE	000817-09-4	x				
METHYLIMIDAZONE, 4-	000822-36-6	x			x	
METHYLENE BIS(2-METHYLANILINE), 4,4'-	000838-88-0	x				
LORAZEPAM	000846-49-1		x			
COBALT TRIACETATE	000917-69-1	x				
NITROSODI-n-BUTYLAMINE, N-	000924-16-3	x	x			
NITROSOPYRROLIDINE, N-	000930-55-2	x	x			
ETHYLPHOSPHONOTHIOIC DICHLORIDE	000993-43-1					x
HEPTACHLOR EPOXIDE	001024-57-3	x	x	x	x	
CHROMIUM TRIACETATE	001066-30-4	x				
NITROSODIETHANOLAMINE, N-	001116-54-7	x				
PROPANE SULTONE, 1,3-	001120-71-4	x	x		x	
AFLATOXIN B1	001162-65-8	x				
ETHIDIUM BROMIDE	001239-45-8		x			
NICKEL BISCYCLOPENDADIENE	001271-28-9	x				
XYLIDINE	001300-73-8	x		x	x	
ZINC CHROMATE (VI)HYDROXIDE	001300-73-8	x	x			
BERYLLIUM ALUMINUM SILICATE	001302-52-9	x				
GALLIUM ARSENIDE	001303-00-0	x				
ARSENIC PENTOXIDE	001303-28-2	x	x	x		
BERYLLIUM OXIDE	001304-56-9	x				
CALCIUM PHOSPHIDE	001305-99-3			x		x
CADMIUM OXIDE	001306-19-0	x	x			
CADMIUM SULFIDE	001306-23-6	x	x			
COBALT HYDROXIDE	001307-86-4	x				
COBALT(2+) OXIDE	001307-96-6	x				
COBALT (III) OXIDE	001308-04-9	x				
COBALT OXIDE	001308-06-1	x				
CHROMIUM (III) OXIDE (2:3)	001308-38-9	x				
NICKEL (II) OXIDE (1:1)	001313-99-1	x				
THORIUM DIOXIDE	001314-20-1	x				
VANADIUM PENTOXIDE	001314-62-1			x		
COBALT (2+) SULFIDE	001317-42-6	x				
SILICA, CRYSTALLINE TRIPOLI	001317-95-9	x				
ARSENIC TRIOXIDE	001327-53-3	x	x	x	x	
FOWLER'S SOLUTION	001332-10-1	x	x			
ASBESTOS	001332-21-4	x				
CHROMIUM (VI) OXIDE (1:3)	001333-82-0	x				
CARBON BLACK	001333-86-4	x				
POLYCHLORINATED BIPHENYLS	001336-36-3	x	x			
ABRIN	001393-62-0			x		
AFLATOXINS	001402-68-2	x		x		

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CHLOROSARIN	001445-76-7			x	x	x
DIETHYL PHOSPHORAMIDIC DICHLORIDE, N,N-	001498-54-0					x
ISOPROPYLPHOSPHONOTHIOIC DICHLORIDE	001498-60-8			x	x	x
DIETHYLHYDRAZINE, 1,2-	001615-80-1	x				
BOMOXYNIL OCTANOATE	001689-99-2		x		x	
BENZYL VIOLET 4B	001694-09-3	x				
TETRACHLORODIBENZO-para-DIOXIN, 2,3,7,8- (TCDD)	001746-01-6	x	x	x	x	
NITROFEN (TECHNICAL-GRADE)	001836-75-5	x			x	
DIRECT BLACK 38	001937-37-7	x				
VINCRISTINE SULFATE	002068-78-2		x			
PENICILLAMINE	002219-30-9		x			
DIACETOXYSCIRPENOL	002270-40-8			x		
MIREX	002385-85-5	x	x		x	
CAPTAFOL	002425-06-1	x				
CI DIRECT BLUE 15	002429-74-5	x				
DISPERSE BLUE 1	002475-45-8	x				
PROPYLPHOSPHONOTHIOIC DICHLORIDE	002524-01-8			x	x	x
DIRECT BLUE 6	002602-46-2	x				
CHLOROETHYLCHLORO-METHYLSULFIDE, 2-	002625-76-5			x		x
OIL ORANGE SS	002646-17-5	x				
NITROSYL CHLORIDE	002696-92-6					x
HC BLUE 1	002784-94-3	x				
SULFURIC ACID, DIISOPROPYL ESTER	002973-10-6	x			x	
BUTYROLACTONE, BETA-	003068-88-0	x				
CHLORO-O-TOLUIDINE HYDROCHLORIDE, 4-	003165-93-3	x				
DIBROMOACETONITRILE	003252-43-5	x	x		x	
PROPANEDIOL, 2,2-BIS-(BROMOETHYL)-1,3-	003296-90-0	x				
TETRAMETHYL SUCCINONITRILE	003333-52-6			x	x	
NICKEL (II) CARBONATE (1:1)	003333-67-3	x				
SESQUIMUSTARD	003563-36-8			x		x
PONCEAU 3R	003564-09-8	x				
THIAZOLE, 2(2-FORMYLHYDROZINE)-4-(5-NITRO-2-FURYL)	003570-75-0	x				
FURYLAMIDE	003688-53-7	x	x			
METHYLCHRYSENE, 5-	003697-24-3	x				
PONCEAU MX	003761-53-3	x				
NAFENOPIN	003771-19-5	x				
IFOSFAMIDE	003778-73-2		x			
OXAZOLIDININE, 2,5-(MORPHOLINOMETHYL)-3-[(5-NITROFURYLIDEN)	003795-88-8	x				
STEPTOMYCIN SULFATE	003801-74-0		x			
NITROSOBUTYLBUTANOLAMINE, N-	003817-11-6	x				
DACARBAZINE	004342-03-4	x				
TETRODOTOXIN	004368-28-9			x		
NITROSOMETHYLVINYLAMINE, N-	004549-40-0	x		x		
ISOTRETINOIN	004759-48-2		x			
RETINOIC ACID, 1,3-CIS-	004759-48-2		x			
NITRILOTRIACETIC ACID, TRISODIUM SALT	005064-31-3	x				
CHLORDANE, ALPHA	005103-71-9	x	x		x	
CHLORDANE, BETA	005103-74-2	x	x		x	
BENZPHETAMINE HYDROCHLORIDE	005411-22-3		x		x	
NITROPYRENE, 1-	005522-43-0	x	x			

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BECLOMETHASONE DIPROPIONATE	005534-09-8		x			
CHLORDANE, GAMMA	005566-34-7	x	x		x	
ETHANETHIOL, N,N- (2-DIPROPYLAMINO)	005842-06-8					x
ETHANETHIOL, N,N- (2-DIISOPROPYLAMINO)	005842-07-9					x
CYCLOPHOSPHAMIDE	006055-19-2	x	x			x
LEAD ACETATE (II) TRIHYDRATE	006085-56-4	x	x			
COBALT (II) ACETATE	006147-53-1	x				
CITRUS RED NO. 2	006358-53-8	x				
CI ACID RED 114	006485-34-3	x				
SACCHARIN, CALCIUM SALT	006485-34-3	x				
NORGESTREL	006533-00-2		x			
AFLATOXIN M1	006795-23-9	x				
CHLOROSOMAN	007040-57-5			x	x	x
PIPERAZINE ESTRONE SULFATE	007280-37-7	x				
LEAD AND COMPOUNDS	007439-92-1	x	x			
LITHIUM AND COMPOUNDS	007439-93-2		x			
MERCURY AND COMPOUNDS	007439-97-6		x		x	
NICKEL, METALLIC AND ALLOYS	007440-02-0	x				
ARSENIC AND COMPOUNDS	007440-38-2	x	x			
BERYLLIUM AND COMPOUNDS	007440-41-7	x				
CADMIUM AND COMPOUNDS	007440-43-9	x	x			
CHROMIUM, HEXAVALENT AND COMPOUNDS	007440-47-3	x	x			
COBALT AND COMPOUNDS	007440-48-4	x				
SULFUR TRIOXIDE	007446-11-9	x				
LEAD PHOSPHATE	007446-27-7	x	x			
ZALCITABINE	007481-89-2	x				
NITROCHRYSENE, 6-	007496-02-8	x				
TITANIUM TETRACHLORIDE	007550-45-0					x
DICHLOROACETYLENE	007572-29-4			x		
ARSENIC ACID, SODIUM SALT	007631-89-2	x	x	x	x	
BORON TRIFLUORIDE	007637-07-2			x		
COBALT(II) CHLORIDE	007646-79-9	x				
HYDROGEN FLUORIDE	007664-39-3			x	x	
AMMONIA (GAS)	007664-41-7			x		
SULFURIC ACID	007664-93-9	x				
NITRIC ACID (FUMING)	007697-37-2			x	x	
PHOSPHORUS TRICHLORIDE	007719-12-2			x		x
PHOSPHORUS (YELLOW)	007723-14-0			x		
BROMINE	007726-95-6			x		
POTASSIUM BROMATE	007758-01-2	x				
LEAD CHROMATE	007758-97-6	x				
CHROMIC ACID, DISODIUM SALT	007775-11-3	x			x	
ARSENIC ACID	007778-39-4	x	x	x	x	
ARSENIC ACID, CALCIUM SALT (2:3)	007778-44-1	x	x	x	x	
POTASSIUM DICHROMATE (VI)	007778-50-9	x	x			
FLUORINE	007782-41-4			x		x
CHLORINE	007782-50-5			x		
GERMANE	007782-65-2			x		
LITHIUM AMIDE	007782-89-0					x
HYDROGEN SULFIDE	007783-06-4			x		

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HYDROGEN SELENIDE	007783-07-5			x	x	x
OXYGEN DIFLUORIDE	007783-41-7			x		x
GERMANIUM TETRAFLUORIDE	007783-58-6			x	x	x
SULFUR TETRAFLUORIDE	007783-60-0			x		x
SELENIUM HEXAFLUORIDE	007783-79-1			x		x
TELLURIUM HEXAFLUORIDE	007783-80-4			x	x	x
ARSENIC TRICHLORIDE	007784-34-1	x	x	x		x
ARSENIC PENTAFLUORIDE	007784-36-3	x	x	x		
ARSENIC ACID, LEAD(2+) SALT (1:1)	007784-40-9	x	x	x	x	
ARSENIC ACID, MONOPOTASSIUM SALT	007784-41-0	x	x	x	x	
ARSINE	007784-42-1	x	x	x		
ARSENIUS ACID, MONOSODIUM SALT	007784-46-5	x	x	x		
BERYLLIUM CHLORIDE	007787-47-5	x				
BERYLLIUM FLUORIDE	007787-49-7	x				
BERYLLIUM SULFATE, TETRAHYDRATE (1:1:4)	007787-56-6	x				
BROMINE TRIFLUORIDE	007787-71-5					x
POTASSIUM CHROMATE (VI)	007789-00-6	x	x			
CHROMIUM PHOSPHATE	007789-04-0	x				
STRONTIUM CHROMATE (VI)	007789-06-2	x				
AMMONIUM DICHROMATE (VI)	007789-09-5	x			x	
BROMINE PENTAFLUORIDE	007789-30-2			x		
CHLORINE TRIFLUORIDE	007790-91-2			x		
CHLOROSULFONIC ACID	007790-94-5					x
COBALT(II) CHLORIDE, HEXAHYDRATE	007791-13-1	x				
PHOSPHINE	007803-51-2			x		x
STIBINE	007803-52-3			x		x
TOXAPHENE (POLYCHLORINATED CAMPHENES)	008001-35-2	x	x		x	
CREOSOTES	008001-58-9	x				
GASOLINE	008006-61-9	x			x	
COAL-TAR	008007-45-2	x			x	
SULFURIC ACID, FUMING, MIST	008014-95-7	x				
CREOSOTE, WOOD	008021-39-4	x				
BITUMENS,EXTRACTS OF STEAM-REFINED & AIR-REFINED	008052-42-4	x				
CARRAGEENAN, DEGRADED	009000-07-1	x				
IRON-DEXTRAN COMPLEX	009004-66-4	x				
RICIN	009009-86-3			x		
BLEOMYCIN SULFATE	009041-93-4	x				
TRICHLOROSILANE	010025-78-2					x
PHOSPHORUS OXYCHLORIDE	010025-87-3					x
COBALT DINITRATE HEXAHYDRATE	010026-22-9	x				
OZONE	010028-15-6		x	x		
HYDRAZINE SULFATE (1:1)	010034-93-2	x	x		x	
NITRILOTRIACETIC ACID, SODIUM SALT	010042-84-9	x				
RADON AND ITS DECAY PRODUCTS	010043-92-9	x				
STERIGMATOCYSTIN	010048-13-2	x	x			
ARSENIC ACID, DISODIUM SALT, HEPTAHYDRATE	010048-95-0	x	x	x	x	
CHLORINE DIOXIDE	010049-04-4					x
NITRIC OXIDE	010102-43-9			x		x
NITROGEN DIOXIDE	010102-44-0			x		
CADMIUM CHLORIDE	010108-64-2	x	x		x	

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CADMIUM SULFATE (1:1)	010124-36-4	x	x			
COBALT(II) SULFATE (1:1)	010124-43-3	x				
ARSENEOUS ACID, POTASSIUM SALT	010124-50-2	x	x			
COBALT(II) NITRATE (1:2)	010141-05-6	x				
COBALT, DI-MU-CARBONYLNONACARBONYL	010210-68-1	x				
BORON TRIBROMIDE	010294-33-4			x		
BARIUM CHROMATE(VI)	010294-40-3	x				
CADMIUM NITRATE	010325-94-7	x	x			
TAMOXIFEN AND SALTS	010540-29-1	x	x			
DINITROGEN TETROXIDE	010544-72-6			x		x
NITROGEN TETROXIDE	010544-72-6			x		
NITROGEN TRIOXIDE	010544-73-7			x	x	x
SODIUM DICHROMATE (VI)	010588-01-9	x	x		x	
NITROSOMETHYLETHYLAMINE, N-	010595-95-6	x				
BLEOMYCINS	011056-06-7	x				
PCB (AROCLOR 1260)	011096-82-5	x	x		x	
PCB (AROCLOR 1254)	011097-69-1	x	x		x	
CHROMATE(1-),HYDROXYOCTAOXODIZINCATEDI-, POTASSIUM	011103-86-9	x				
COBALT ALLOY, CO, CR	011114-92-4	x				
ASBESTOS, CROCIDOLITE	012001-28-4	x				
ASBESTOS, CHRYSOTILE	012001-29-5	x				
COBALT HYDROXIDE OXIDE	012016-80-7	x				
NICKEL SULFIDE (3:2)	012035-72-2	x	x			
NICKEL (II) HYDROXIDE	012054-48-7	x				
MAGNESIUM PHOSPHIDE	012057-74-8					x
COBALT, (MU(CARBONATO(2-)-O:O'))DIHYDROXYDI	012069-68-0	x				
MANGANESE TRICARBONYL METHYLCYCLOPENTADIENYL	012108-13-3			x	x	
NICKEL (III) HYDROXIDE	012125-56-3	x				
ASBESTOS, AMOSITE	012172-73-5	x				
PALYGORSKITE (FIBERS >5 MICROMETERS)	012174-11-7	x				
SENARMONITE	012412-52-1	x				
COBALT CARBONATE, COBALT DIHYDROXIDE (2:3)	012602-23-2	x				
COBALT-CHROMIUM-MOLYBDENUM ALLOY	012629-02-6	x				
COBALT-CHROMIUM-NICKEL-TUNGSTEN ALLOY	012638-07-2	x				
BERYLLIUM ALUMINUM ALLOY	012770-50-2	x				
CHLOROETHYL(2)-3-CYCLOHEXYL-1-NITROSOUREA,1-(CCNU)	013010-47-4	x				
NITROSOSACOSINE, N-	013256-22-9	x				
RIFAMPIN	013292-46-1		x			
BERYLLIUM HYDROXIDE	013327-32-7	x				
NICKEL CARBONYL	013463-39-3	x		x		
TITANIUM DIOXIDE	013463-67-7	x				
BERYLLIUM SULFATE (1:1)	013510-49-1	x				
METHYLENEDIANILINE,4,4'-DIHYDROCHLORIDE	013552-44-8	x				
BERYLLIUM HYDROGEN PHOSPHATE (1:1)	013598-15-7	x				
CHLORINE PENTAFLUORIDE	013637-63-3			x		x
DECABROMOBIPHENYL	013654-09-6	x				
COBALT MOLYBDATE(VI)	013762-14-6	x				
CALCIUM CHROMATE (VI)	013765-19-0	x				
CHLOROETHYL(2)-3-(4-METHYLCYCLOHEXYL)-1-NITROSOUREA,1-	013909-09-6	x				
WOOD DUST	013983-17-0	x				

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SILICA, CRYSTALLINE CRISTOBALITE	014464-46-1	x				
CADMIUM FLUOBORATE	014486-19-2	x	x			
QUARTZ [SILICA,CRYSTALLINE (RESPIRABLE)]	014808-60-7	x				
CYCASIN	014901-08-7	x				
CHROMIUM, DICHLORODIOXO-	014977-61-8	x				
CHROMIUM (VI)CHLORIDE	014986-48-2	x				
SILICIC ACID BERYLLIUM SALT	015191-85-2	x				
NITRILOTRIACETIC ACID, DISODIUM SALT	015467-20-6	x				
SILICA, CRYSTALLINE TRIDYMITTE	015468-32-3	x				
METHOTREXATE SODIUM	015475-56-6		x			
CISPLATIN	015663-27-1	x	x			
DIETHYL METHYLPHOSPHONITE	015715-41-0			x	x	x
ZINC CHROMATE (VI) HYDROXIDE HYDRATE	015930-94-6	x	x			
NITROSONORNICOTINE, N'-	016543-55-8	x				
ESTRA-1,2,5(10),7-TETRAEN-17-ONE,3-(SULFOOXY)-,SODIUM SAL'	016680-47-0	x				
NITROBENZANTHRONE, 3-	017117-34-9	x				
DANAZOL	017230-88-5		x			
DECABORANE	017702-41-9			x	x	
COBALT CARBONYL	017786-31-1	x				
BENOMYL	017804-35-2		x		x	
PLICAMYCIN	018378-89-7		x			
LEAD CHROMATE (VI) OXIDE	018454-12-1	x	x			
NITRILOTRIACETIC ACID, TRISODIUM SALT, MONOHYDRATE	018662-53-8	x				
STREPTOZOTOCIN	018883-66-4	x	x			
NITRILOTRIACETIC ACID, MONOSODIUM SALT	018994-66-6	x				
DIBORANE	019287-45-7			x		x
PENTABORANE	019624-22-7			x		
DIMETHOXYBENZIDINE, 3,3'-,DIHYDROCHLORIDE	020325-40-0	x				
OSMIUM TETROXIDE	020816-12-0			x		
DAUNOMYCIN	020830-81-3	x	x			
ALUMINUM PHOSPHIDE	020859-73-8			x		x
COBALT(II) HYDROXIDE	021041-93-0	x				
NIFEDIPINE	021829-25-4		x			
INIDIUM PHOSPHIDE	022398-80-7	x				
DIFLUSINAL	022494-42-2		x			
DINITROFLUOROANTHENE, 3,9-	022505-53-2	x				
METHYL MERCURY	022967-92-6			x	x	
ADRIAMYCIN	023214-92-8	x				
DOXORUBICIN HYDROCHLORIDE (ADRIAMYCIN)	023214-92-8		x			
RIDDELLIINE	023246-96-0	x				
NITRILOTRIACETIC ACID, DISODIUM SALT, MONOHYDRATE	023255-03-0	x				
BUTYLATED HYDROXYANISOLE (BHA)	025013-16-5	x				
CLOBETASOL PROPIONATE	025122-46-7		x			
PENTACHLOROBIPHENYL	025429-29-2	x				
LITHIUM NITRIDE	026134-62-3					x
TOLUENE DIISOCYANATE, 1,3-	026471-62-5	x	x			
SODIUM AZIDE	026628-22-8		x	x	x	
ARSENEOUS ACID, CALCIUM SALT	027152-57-4	x	x			
ARSENIUOS ACID, CALCIUM SALT	027152-57-4	x	x	x		
CYCLOPENTA[CD]PYRENE	027208-37-3	x				

SUMMARY OF PARTICULARLY HAZARDOUS SUBSTANCES (by CAS#)

Key:

- SC -- Select Carcinogens
- RT -- Reproductive Toxins
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CHEMICAL NAME	CAS #	SC	RT	AT	SA	DHS
DICHLORO-4,4'-DIAMINODIPHENYL ETHER, 3,3'-	028434-86-8	x				
ALPRAZOMAN	028981-97-7		x		x	
ATENOLO	029122-68-7		x		x	
CHROMIUM CARBONATE	029689-14-3	x				
TONIPOSIDE	029767-20-2	x	x			
ZIDOVUDINE (AZT)	030516-87-1	x				
MEBENDAZOLE	031431-39-7		x			
ETOPOSIDE	033419-42-0	x	x			
AURANOFIN	034031-32-8		x			
SAXITOXIN	035523-89-8			x		
RIBVARIN	036791-04-5		X			
SULINDAC	038194-50-2		x			
BUTYRIC ACID, 4-(N-BUTYL-N-NITROSAMINO)-	038252-74-3	x				
DIAMINOANISOLE SULPHATE, 2,4-	039156-41-7	x				
BERYLLIUM ZINC SILICATE	039413-47-3	x				
LEWISITE 2	040334-69-8			x	x	x
LEWISITE 3	040334-70-1			x	x	x
DIPROPYL PHOSPHORAMIDIC DICHLORIDE, N,N-	040881-98-9					x
CARBOPLATIN	041575-94-4		x		x	
DINITROPYRENE, 1,6-	042397-64-8	x	x			
DINITROPYRENE, 1,8-	042397-65-9	x	x			
ETHYL-S-DIMETHYLAMINOETHYLMETHYLPHOSPHONOTHIOLATE (VX)	050782-69-9			x	x	x
AMSACRINE	051264-14-3	x				
ARSONIC ACID, CALCIUM SALT (1:1)	052740-16-6	x	x	x		
PENTOSTATIN	053910-25-1		x			
ETRETINATE	054350-48-0		x			
CHLOROZOTOCIN	054749-90-5	x				
CLORAZEPATE DIPOTASSIUM	057109-90-7		x			
PENTACHLOROBIPHENYL, 3,4,5,3',4'- (PCB-126)	057465-28-8	x				
NITROPYRENE, 4-	057835-92-4	x				
IDARUBICIN HYDROCHLORIDE	057852-57-0		x			
ETHYL O-2-DIISOPROPYLAMINOETHYL METHYLPHOSPHONITE, O-(QL)	057856-11-8			x	x	x
MISOPROSTOL	059122-46-2		x			
POLYBROMINATED BIPHENYLS	059536-65-1	x	x			
CYCLOSPORIN A	059865-13-3	x	x			x
N-NITROSOMETHYLAMINO-PROPIONITRILE, 3-	060153-49-3	x				
OCTABROMOBIPHENYL	061288-13-9	x				
COBALT NAPHTHATE	061789-51-3	x				
TRP-P-2(3-AMINO-1-METHYL-5H-PYRIDO[4,3-b]INDOLE)	062450-06-0	x	x			
TRP-P-1(3-AMINO-1,4-DIMETHYL-5H-PYRIDO[4,3-b]INDOLE)	062450-07-1	x				
CHLORINATED PARAFFINS (CARBON-12, 60% CHLORINE)	063449-39-8	x				
BIS(2-CHLOROETHYLTHIO)METHANE	063869-13-6			x		
BIS(2-CHLOROETHYLTHIO)-N-PROPANE, 1,3-	063905-10-2			x		
MUSTARD, O- (T)	063918-89-8					x
BIS(2-CHLOROETHYLTHIOMETHYL)ETHER	063918-90-1			x		
N-NITROSOMETHYLAMINO-1-(3-PYRIDYL)-1-BUTANONE, 4- (NNK)	064091-91-4	x				
NNK(4-(N-(NITROSOMETHYLAMINO)-1-(3-PYRIDYL)-1-BUTANONE)	064091-91-4	x				
COAL TAR	065996-89-6	x			x	

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COAL TAR DISTILLATE	065996-92-1	x			x	
COAL-TAR PITCHES	065996-93-2	x			x	
BERYLLIUM OXIDE CARBONATE	066104-24-3	x				
ERIONITE	066733-21-9	x				
GLU-P-2(2-AMINODIPYRIDO[1,2-A:3',2'-D]IMIDAZOLE)	067730-10-3	x	x			
GLU-P-1 (2-AMINO-6-METHYLDIPYRIDO[1,2-a:3',2'-d]IMIDAZOLE)	067730-11-4	x	x			
BLEOMYCIN, HYDROCHLORIDE	067763-87-5	x				
POLYBROMINATED BIPHENYL (FF-1)	067774-32-7	x	x			
MeA-ALPHA-C(2-AMINO-3-METHYL-9H-PYRIDO[2,3-b]INDOLE)	068006-83-7	x				
SHALE-OILS	068308-34-9	x			x	
MITOXANTRONE HYDROCHLORIDE	070476-82-3		x		x	
DINITROPYRENE, 1,3-	075321-20-9	x			x	
IQ(2-AMINO-3-METHYLIMIDAZO[4,5-f]QUINOLINE)	076180-96-6	x				
AMINO-3,4-DIMETHYL-3h-IMIDAZO(4,5f)QUINOLINE,2-	077094-11-2	x				
CHLORO-4-(DICHLOROMETHYL)-5-HYDROXY-2(5H)-FURANONE,3-	077430-76-0	x				
AMINO-3,8-DIMETHYL-3H-IMIDAZO(4,5-f)QUINOXALINE, 2-	077500-04-0	x				
ASBESTOS, ACTINOLITE	077536-66-4	x				
ASBESTOS, ANTHOPHYLLITE	077536-67-5	x				
ASBESTOS, TREMOLITE	077536-68-6	x				
CICLOSPORIN	079217-60-0	x				
CYCLOSPORIN	079217-60-0	x	x			x
GANCICLOVIR	082410-32-0		x			
MYCLOBUTANIL	088671-89-0		x			
MICROCYSTIN	101043-37-2	x				
PHLP(2-AMINO-1-METHYL-6-PHENYLIMIDAZO[4,5-B]PYRIDINE)	105650-23-5	x				
DINITROFLUOROANTHENE, 3,7-	105735-71-5	x				
GANCICLOVIR HYDROCHLORIDE	107910-75-8		x			
CHLORINATED TOULENES, ALPHA-	108171-82-2	x				
FUMONISIN B1	116355-83-0	x				
BIS(2-CHLOROETHYLTHIO)-N-BUTANE, 1,4-	142868-93-7			x		
BIS(2-CHLOROETHYLTHIO)-N-PENTANE,1,5-	142868-94-8			x		