1. INTRODUCTION

The Brooklyn College Environmental Health and Safety (EHS) office has implemented the rules, regulations and other mandated practices in this protocol to comply with the OSHA Hazard Communication Standard set forth in 29 CFR 1910.1200. This standard was enacted in 1994 to reduce the number of illnesses and injuries caused by chemicals in the workplace. The standard ensures that the hazards of all chemicals produced or imported are evaluated by manufacturers and that this information is provided to employers and employees.

2. TABLE OF CONTENTS

3. OBJECTIVE

The hazard communication program is designed to ensure evaluation of the hazards of all chemicals present in the workplace, and ensure that both employers and employees receive relevant information about those hazards.

This program is established to:

- Safeguard the health and safety of employees.
- Ensure compliance with local, state, and federal standards.
- Create guidelines to follow for implementation and maintenance of a hazard communication program.

4. SCOPE

The Hazard Communication Program has five major components:

- Chemical inventory
- Safety Data Sheets (SDS)
- Container labeling and other forms of warning
- Employee education and training including non-routine tasks
- Written program
- Contractors

The Hazard Communication Program applies to all chemical use (refer to **Appendix H**-Definitions) at Brooklyn College, except laboratory areas (Laboratory Standard 29 CFR 1910.1450 covers chemical use in laboratories) and operations where chemicals are only handled in sealed containers (e.g., a warehouse). Warehouse type operations only require proper labeling, SDSs, and information and training for employees. Certain chemicals are exempt from the OSHA Hazard Communication Standard, including hazardous wastes, food, wood, tobacco, and potentially hazardous substances such as drugs and cosmetics brought to Brooklyn College for personal consumption (rubbing alcohol in a first aid kit would not be covered).

5. HAZARDOUS CHEMICALS

The definition of hazardous chemicals as given by OSHA is "any chemical which is a physical hazard or health hazard."

OSHA defines each as:

- *Physical hazard* means a chemical for which there is scientifically valid evidence that it is a combustible liquid, a compressed gas, explosive, flammable, an organic peroxide, an oxidizer, pyrophoric, unstable (reactive) or water-reactive.
- *Health hazard* means a chemical for which there is statistically significant evidence based on at least one study conducted in accordance with established scientific principles that acute or chronic health effects may occur in exposed employees. The term "health hazard"

includes chemicals which are carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, neurotoxins, agents which act on the hematopoietic system, and agents which damage the lungs, skin, eyes, or mucous membranes.

6. CHEMICAL INVENTORY

A chemical inventory will be completed and will contain all hazardous chemicals used in the workplace. Each department has the responsibility to maintain the chemical inventory list. As new chemicals are purchased, the list should be updated.

Each department must appoint a person to manage the chemical inventory list. The Office of Environmental Health and Safety must receive an electronic spreadsheet of the chemical inventory list (updated as necessary). **A current inventory of non-lab chemicals used on the College campus are included in Appendix A.** Labs and research settings are required to maintain the inventory via the ChemTracker Online Inventory Management system (see **Appendix E**). Employees who have questions about the chemical inventory list should contact the department point of contact e.g. Departmental Chair or their supervisor.

7. LABELING

The primary information to be obtained from an OSHA-required label is the identity of the material, the appropriate hazard warnings, and the name and address of the producer or other responsible party. The identity is any term that appears on the label, the SDS, and the list of chemicals, which links these three sources of information. The identity used by the supplier may be a common or trade name (“Super Formula”), or a chemical name (1, 1, 1 -trichloroethane). The hazard warning is a brief statement of the hazardous effects of the chemical (“flammable,” “causes lung damage”).

The manufacturer’s label must not be removed or defaced. If the product is transferred from one container to another, the new container must be labeled with either an extra copy of the original manufacturer’s label or with labels that have the identity and the appropriate hazard warning.

If the chemical is transferred from a labeled container into a process container, that is, if the person performing the transfer will use the transferred material within the same workday, the container does not need to be labeled as described above.

Each department will be required to appoint a person to manage the labeling system. Employees who have questions about the labeling system should contact the department’s point of contact or their supervisor.

See **Appendix B** for an example of a chemical label.

8. SAFETY DATA SHEETS (SDSs)

8.1 GENERAL

SDSs are the most basic source of hazardous chemical information. The *Hazard Communication Standard* requires chemical manufacturers and importers to develop or obtain an SDS for each hazardous chemical produced or imported. Employers must have an SDS for each hazardous chemical that they use.

The role of SDSs is to provide detailed information on each hazardous chemical, including potential hazardous effects, physical and chemical characteristics, and recommendations for appropriate protective measures. Employees who have questions about Safety Data Sheets should contact departmental point of contact or supervisor.

8.2 OBTAINING SDSs

The departmental point of contact or supervisor must obtain a SDS from the chemical supplier at the time of purchase and maintain a SDS for each hazardous material in the workplace. These SDSs must be readily accessible to employees working with the products during all work hours. If an SDS is not received with a chemical shipment, the departmental point of contact or supervisor must obtain the SDS within a reasonable amount of time. These requests for SDSs must be documented, either by copy of a letter (see Appendix C for an example SDS Request letter) or email (wording from Appendix C can be used) or a note regarding telephone conversations.

Chemicals (in research, laboratories) in the Central Inventory database (ChemTracker) are linked directly to online Safety Data Sheets. **See Appendix E.** In addition to being maintained by the respective departments, chemical inventories not maintained using ChemTracker are maintained on file by EHS (ehs@brooklyn.cuny.edu, x5400).

8.3 SDS REVIEW

SDSs are written or printed material concerning product hazard determination, which are prepared and distributed with chemicals by chemical manufacturers and distributors. SDSs are written in English and contain the following information:

- Identity of the chemical as provided on the container label
- Physical and chemical characteristics of the material
- Physical hazards of the material
- Health hazards of the material
- Primary route(s) of entry
- Exposure limits: NIOSH Threshold Limit Value (TLV), OSHA Permissible Exposure Limit (PEL), or Supplier recommended limits
- Whether or not the material or components have been found to be a potential carcinogen by the International Agency for Research on Cancer (IARC), National Toxicology Program (NTP), or by OSHA
- Applicable precautions for safe handling and use

- Applicable control measures
- Emergency and first-aid procedures
- Date of preparation or date of last change
- Name, address and telephone number of the chemical manufacturer, importer, employer or other responsible party, who can provide additional information

8.4 REVIEW OF SDSS

Departments are responsible for reviewing all incoming SDSs for new and significant health/safety information. Any new information will be transmitted to the employees so that appropriate measures can be taken (PPE, engineering controls, etc.). If deficiencies exist or additional information is needed concerning SDSs, the chemical manufacturer or supplier will be contacted to obtain necessary information.

8.5 SDS MAINTENANCE

Individual departments are responsible for maintaining the SDSs. Additionally, departments must appoint a person to manage SDSs. The appointed person must maintain the chemical inventory list and SDSs for chemicals in a notebook entitled "Hazard Communication Program." If SDSs are not available or new chemicals in use do not have SDSs, employees should contact the department point of contact or supervisor. **Employees may also contact EHS as the Office maintains a library of SDSs for non-lab chemicals reflected in the Appendix A inventory.**

8.6 HAZARD DETERMINATION

Brooklyn College relies upon the hazard determination supplied by the chemical manufacturer or distributor to determine the hazards of all chemicals bought, used or stored in the facility.

9. WRITTEN HAZARD COMMUNICATION PROGRAM

Each department must develop a written Hazard Communication Program (see **Appendix F**- Model Hazard Communication Program) that details how the department will comply with the provisions of the OSHA Hazard Communication Standard. The program must include an inventory of hazardous materials used or stored by the department point of contact or supervisor; handling of SDSs, including where they will be maintained, how they will be obtained, and how to access them; labeling requirements; training requirements; contractor requirements; and provisions for non-routine tasks.

The written program must be accessible to individuals during all work hours, and must be reviewed and updated at least annually. The annual review date/time must be recorded into a log in the notebook. Refer to section 12.0 IMPLEMENTATION for specific department responsibilities.

10. EMPLOYEE INFORMATION AND TRAINING

The department point of contact or supervisor are responsible for reviewing SDSs and transmitting relevant information to employees on hazardous chemicals in the work area at the initial assignment and whenever a new hazard category is introduced. The information will include the requirements of this section, any operations in the work area where hazardous chemicals are present and the location and availability of the written hazard communication program (including the chemical inventory and SDSs location). Additional areas of training will include the following:

- Physical and health hazards of the chemicals in the work area
- The details of the hazard communication program including an explanation of the labeling system, interpreting SDSs, and how to use appropriate hazard information
- Measures employees can take to protect themselves from these hazards, including specific procedures the department has implemented to protect employees from exposure, including work practices, engineering controls, emergency procedures and personal protective equipment (PPE)
- Methods and observations that may be used to detect the presence or release of a hazardous chemical

EHS will perform Hazard Communication training upon initial hire, on an annual basis, and as requested.

The Hazard Communication training will contain the following elements:

- An overview of the requirements contained in the OSHA Hazard Communication Standard, 1910.1200
- Explanation of the labels and the labeling system
- Explanation of SDSs and how employees can use this information
- Location and availability of the written Hazard Communication Program
- Measures employees can take to protect themselves from hazards in their workplace, including specific procedures the employer has implemented to prevent exposure to hazardous chemicals such as appropriate work practices, engineering controls, emergency procedures, and personal protective equipment
- Any operations in the work area where hazardous chemicals are present
- Physical and health hazards of the chemical categories in the work area

Departments are responsible for assuring that workers attend the training.

11. NON-ROUTINE TASKS

Some College employees are periodically required to perform non-routine tasks. The department is responsible for identifying and informing employees of the hazardous substances that may be involved **prior** to the performance of non-routine work.

Employees will be given the following information:

- The specific chemical hazard
- Any protective safety measures the employee can take, such as wearing gloves or protective clothing
- Procedures for decreasing the hazard, such as proper ventilation, respiratory protection, or requiring the presence of other employees
- Any established emergency procedures

The will provide assistance in evaluating the hazards and determining the appropriate precautions for non-routine tasks, as requested.

12. CONTRACTORS

Contractors working at Brooklyn College must comply with all OSHA standards and requirements, where applicable. The *Hazard Communication Standard* requires that contractors be:

- Given access to SDSs
- Informed of any precautionary measures to take during normal operating conditions and in foreseeable emergencies
- Informed of the labeling system

Similarly, contractors are expected to inform and provide departments with a chemical inventory and SDSs for the materials that will be introduced into the work area during the course of work at Brooklyn College. Contractors must also provide information regarding the location of chemical use and storage.

13. HAZARDOUS WASTE DISPOSAL

Please refer to CUNY 'Hazardous Waste Standards' for hazardous waste disposal information.

14. IMPLEMENTATION

Each department is responsible for creating a Hazard Communication notebook. The notebook must contain:

- Complete chemical inventory (see Appendix A)
- Complete SDS collection for all chemicals listed on chemical inventory (see Appendix A)
- SDS request correspondence (letter, email, log of telephone conversations)
- Completed Model Written Hazard Communication Program (See **Appendix F**)

Departments are responsible for reviewing SDSs and transmitting relevant information to employees on hazardous chemicals in the work area:

- At the initial assignment
- Whenever a new hazard category is introduced

Departments must assure that workers attend annual Hazard Communication training.

15. SIGNIFICANT CHANGES

On May 25, 2012 OSHA issued a major revision to the Hazard Communication Standard designed to align with the Globally Harmonized System of Classification and Labeling of Chemicals (GHS) used internationally. Major changes included:

- Replacement of the use of Material Safety Data Sheets (MSDSs) with newly formatted SDSs.
- All current MSDSs must be replaced with updated SDSs by January 1, 2016.
- Laboratories that develop new chemicals must ensure that any containers of hazardous chemicals leaving the laboratory are labeled in accordance with this plan and that a SDS is provided to all recipients of those chemicals.
- All labels must comply with the updated standard by June 1, 2016.

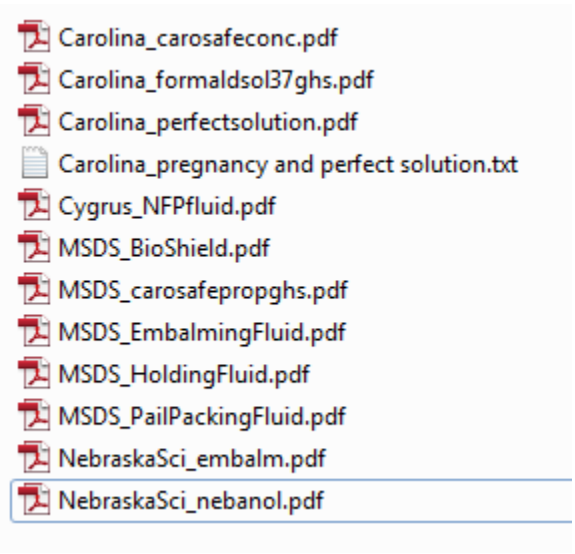
APPENDIX A: BROOKLYN COLLEGE CHEMICAL INVENTORY *(as of 11/2016)*
(Contact ehs@brooklyn.cuny.edu, x5400 to include in the College's central inventory database)

Department: _____ Contact: _____ Date: _____

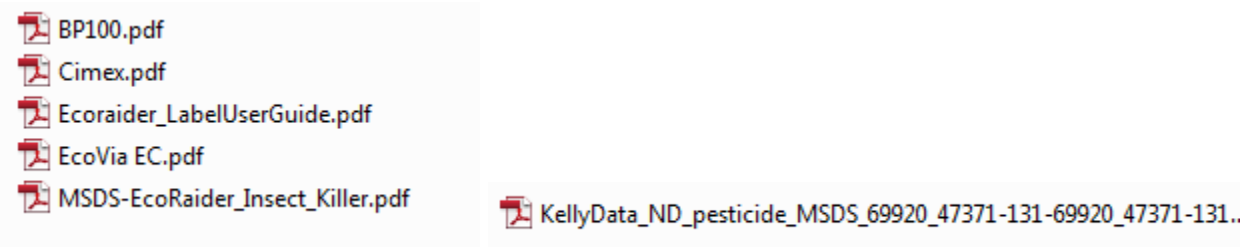
Product Name (Alphabetical)	**Chemical Constituents** (Alphabetical)	**Quantity**	**Location**

APPENDIX A: BROOKLYN COLLEGE CHEMICAL INVENTORY *(as of 11/2016)*

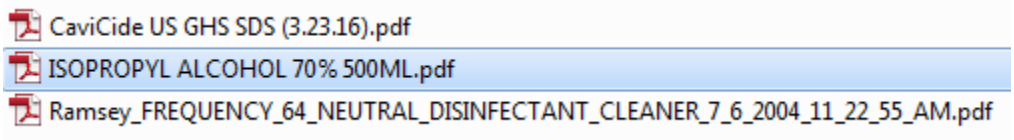
Products Associated With Dissection Specimens
USERS: Biology Department, Kinesiology Department, EHS Office



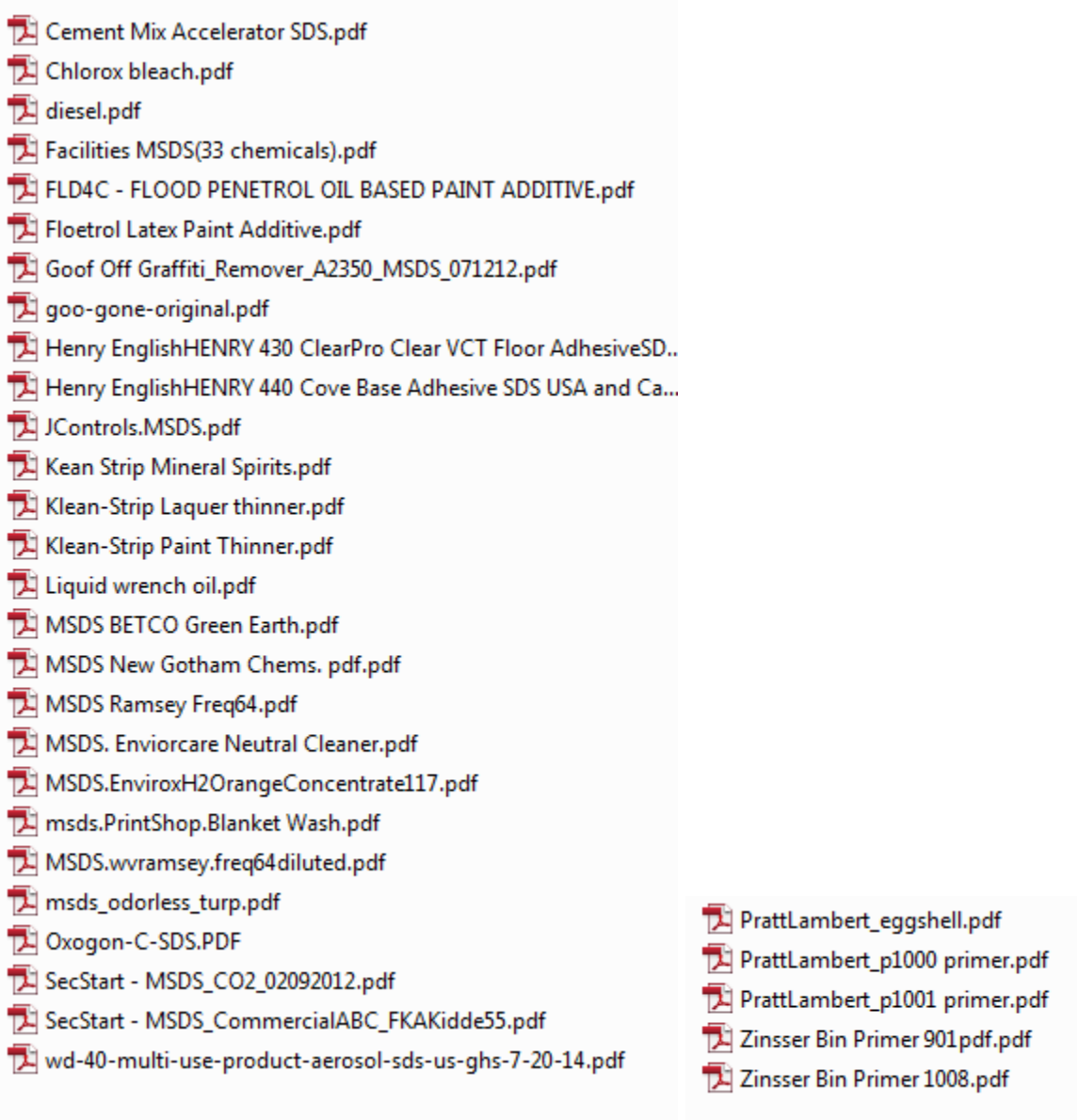
Pesticides
USERS: Facilities Pesticide Applicator



Health Clinic
USERS: Clinicians

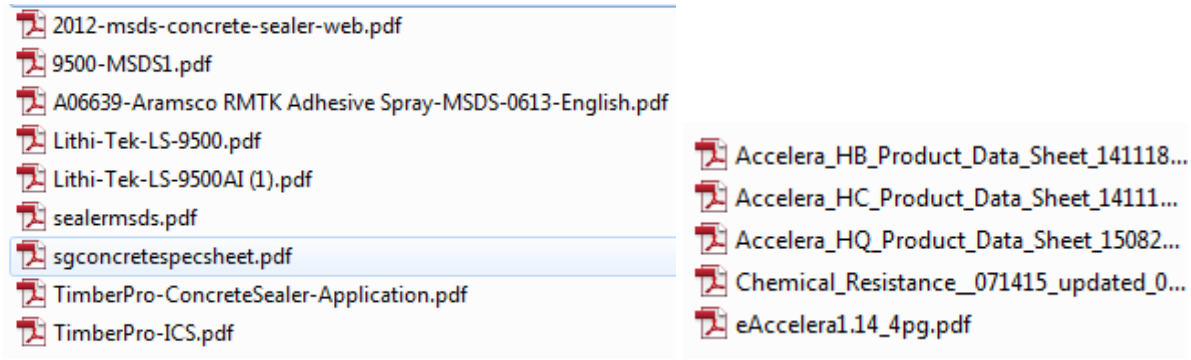


APPENDIX A: BROOKLYN COLLEGE CHEMICAL INVENTORY *(as of 11/2016)*
Paints, Adhesives, Solvents, Water Treatment etc.
USERS: Facilities Carpenters, Masons, Painters, Engineers



APPENDIX A: BROOKLYN COLLEGE CHEMICAL INVENTORY *(as of 11/2016)*

USERS: Contractors

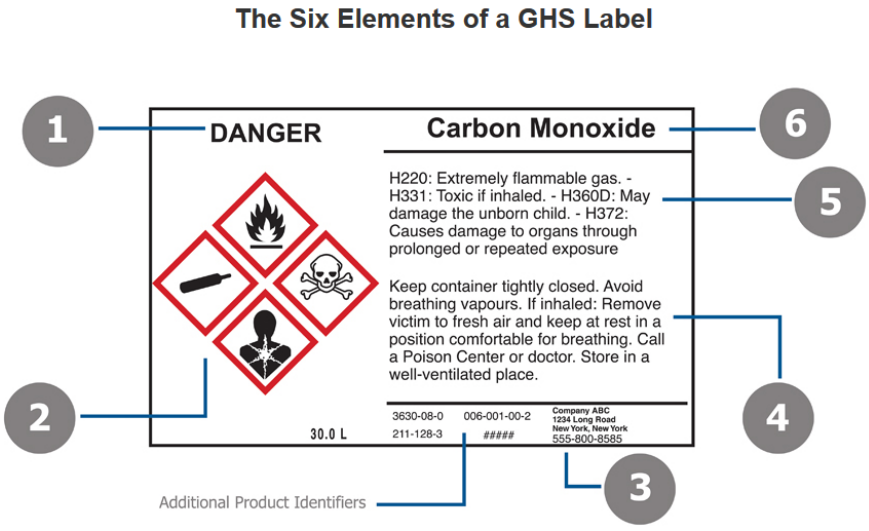


APPENDIX A: BROOKLYN COLLEGE CHEMICAL INVENTORY *(as of 11/2016)*

Cleaners *USERS: Facilities Custodial*

- Baseboard Clnr& Wax Striper.pdf
- Buckey Cirene.pdf
- Buckeye Arena 300.pdf
- Buckeye Base hit.pdf
- Buckeye Green Light.pdf
- Buckeye Penetrate.pdf
- Buckeye Screen Clean.pdf
- Buckeye Shelter.pdf
- Buckeye Verde.pdf
- Carpet defoamer L-661B,NYSID#D4664.pdf
- Carpet Protector.pdf
- Envircare floor finish restorer NYSID#D-4521.pdf
- Enviro Care, carpet & upholstery cleaner.pdf
- Enviro Glass Cleaner.pdf
- Envirocare floor striper NYSID#D4508.pdf
- Envirocare Glass Cleaner.pdf
- Envirocare low foam all purpose clnr.pdf
- Envirocare neutral disinfectant.pdf
- Envirocare tough job clnr.pdf
- Fiber Pro Spot Bet.pdf
- Gum Remover.pdf
- Hillyard Furn. Polish.pdf
- Hillyard Ind. Basebd Strpr..pdf
- Hillyard NutraRinse.pdf
- Host Dry Crpt. Clnr..pdf
- Host PreClean.pdf
- Host Spot Remover.pdf
- J-works strate nonButt Clnr Degreser.pdf
- Liberty Foam Hand Soap.pdf
- MC800 Liqd Grafiti Remover.pdf
- Mineral Shock RTU.pdf
- Noxon 7 metal cleaner polish.pdf
- Optimize Clnr Glos Restore.pdf
- Pollet CleanProtect.pdf
- Pollet LinPol Green.pdf
- Prod#5122, EraseB.pdf
- Prodcut & Co. I.D.pdf
- Product Identifier.pdf
- Purell Hand Sanitizer.pdf
- Resolve high traffic foam carpet clnr.pdf
- Rinsoft.pdf
- Ruber Safe Flor Stripr.pdf
- Shield Plus carpet protection.pdf
- Simix-SMX1150-02 AllPurpose Clnr.pdf
- Steamette Liquid Extract. Cleaner.pdf
- Taski Ice-It Strpr.pdf
- Tenacity.pdf
- Tough Bowl Toilet Bowl Clnr..pdf
- WiWax Clng Maint Emuls.pdf

APPENDIX B (1): CHEMICAL, Primary Container LABEL EXAMPLE



The GHS label example above includes these six elements:

1. **Signal Word.** The signal word indicates hazard level. It's like a safety sign header for your chemicals. "Danger" is used for the most severe instances, while "Warning" is less severe.
2. **GHS Symbols (Hazard Pictograms).** These are used to identify hazardous products and are commonly grouped by chemical/physical risk, health risk and environmental risk.
3. **Manufacturer Information.** This identifies the manufacturer's company name, address and telephone number.
4. **Precautionary Statements/First Aid.** These are phrases that are tied to each hazard statement. They describe general preventative, response, storage or disposal precautions. These statements will be found on the chemical's Safety Data Sheet. Similar to Hazard Statements, Precautionary Statements can be identified by a P-Code (like P100).
5. **Hazard Statements.** These are phrases that describe the nature of hazardous products and the degree of hazard. Hazard statements should be found on the chemical's Safety Data Sheet (SDS) and identified by an H-Code (like H100).
6. **Product Name or Identifiers.** Simply identify the product or chemical name. Additional identifiers can be noted to the right of the Manufacturer's information (#1).

APPENDIX B (2): CHEMICAL, Portable (Secondary) Container LABEL EXAMPLE

[Insert Chemical Name]

DANGER or WARNING [*Choose proper signal word from the SDS]

[Insert Hazard Statements from the SDS]

Transferred By:	Date Transferred:

APPENDIX C: SDS EXAMPLE

AZER SCIENTIFIC

SDS Safety Data Sheet – Methyl Alcohol

Section 1: IDENTIFICATION OF SUBSTANCE AND SUPPLIER

PRODUCT NAME: Methyl Alcohol

SYNONYMS: Methyl hydrate; Methyl hydroxide; Methanol, Wood alcohol; Methylol

PRODUCT CODES: ES607, ES627, ES628, ES629, ES654

MANUFACTURER: Azer Scientific, Inc.
ADDRESS: 701 Hemlock Rd, Morgantown, PA 19543

CHEMTREC PHONE: 1.800.424.9300 (USA)
+1.703.527.3887 (International)

SUPPORT: 610-524-5810
FAX: 610-901-3046

PRODUCT USE: General purpose organic solvent

PREPARED BY: CB

Section 2: HAZARDS IDENTIFICATION

OSHA Hazards: Flammable Liquid, Target organ effect, Toxic by inhalation, Toxic by ingestion, Toxic by skin absorption

Target Organs: Central nervous system, Eyes, Heart, Kidney, Liver

NFPA:

GHS label elements (including precautionary statements)

Signal Word: DANGER!

Hazard Statement(s):

H225	Highly flammable liquid and vapor
H301 + H311	Toxic if swallowed or in contact with skin
H331	Toxic if inhaled
H370	Causes damage to organs

Precautionary Statement(s):

Azer Scientific Inc | 701 Hemlock Road | Morgantown | PA | 19543 | 610.524.5810 Rev.03/2015

AZER SCIENTIFIC

SDS Safety Data Sheet – Methyl Alcohol

P263	Avoid contact during pregnancy/while nursing.
P501	Dispose of contents and container to an approved waste disposal plant.
P260	Do not breathe dust/ fume/ gas/ mist/vapors/ spray.
P270	Do not eat, drink, or smoke when using this product.
P240	Ground/ bond container and receiving equipment.
P307 + P311	IF exposed: Call a POISON CENTER or doctor/ physician.
P304 + P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P303 + P361 + P353	IF ON SKIN (or hair): Remove immediately all contaminated clothing. Rinse skin with water.
P301 + P310	IF SWALLOWED: Immediately call a POISON CENTER or a doctor/physician.
P370 + P378	In case of fire: Use dry sand, dry chemical, or alcohol-resistant foam for extinction.
P210	Keep away from heat, sparks, open flames and hot surfaces. No smoking.
P233	Keep container tightly closed
P322	Specific measures (see first aid measures on this label)
P321	Specific treatment (see supplemental first aid instructions on this label).
P403 + P233	Store in a well-ventilated place. Keep container tightly closed.
P403 + P235	Store in a well-ventilated place. Keep cool.
P405	Store locked up
P243	Take precautionary measures against static discharge
P241	Use explosion-proof electrical, ventilating, and lighting equipment
P242	Use only non-sparking tools
P271	Use only outdoors or in a well-ventilated area
P264	Wash hands thoroughly after handling
P280	Wear protective gloves and eye and face protection

GHS Classification(s):
Acute Toxicity, Dermal (Category 3)
Acute Toxicity, Inhalation (Category 3)
Acute Toxicity, Oral (Category 3)
Flammable Liquids (Category 2)
Specific Target Organ Toxicity – single exposure (Category 1)

Other hazards which do not result in classification:

Potential Health Effects:

Organ	Description
Eyes	Can cause irritation to the eyes
Ingestion	Toxic if ingested. Ingesting as little as 2 teaspoon (10mL) can result in blindness. Ingestion of 60mL – 200mL is considered to be fatal does for most adults.
Inhalation	Can be harmful if inhaled causing irritation to the respiratory tract.
Skin	Toxic if absorbed through skin. Can cause visible skin irritation.

Section 3: COMPOSITION AND INFORMATION ON INGREDIENTS

Chemical Identity:	Methyl Alcohol
Common name / Synonym:	Methanol; Methyl hydrate; Methyl hydroxide; Methylol; Wood alcohol
CAS #:	67-56-1
EINECS #:	200-659-6
ICSC #:	0057
RTECS #:	PC1400000
UN #:	1230
EC #:	603-001-00-X

% Weight	Material	CAS
100	Methyl Alcohol	67-56-1

AZER SCIENTIFIC

SDS Safety Data Sheet – Methyl Alcohol

Section 4: FIRST AID MEASURES

General Advice
Take proper precautions to ensure your own health and safety before attempting rescue and providing first aid. Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
Skin
Immediately flush skin with plenty of soap and water for at least 15 minutes while removing contaminated clothing/shoes and acquire medical attention. Note contaminated clothing can be a fire hazard.
Inhalation
Remove person to fresh air. Seek medical attention. Give oxygen or artificial respiration as needed.
Eyes
Thoroughly flush the eyes with large amounts of clean low-pressure water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Seek medical attention.
Ingestion
Do NOT induce vomiting. If victim is conscious and alert, rinse mouth with water. Never give anything by mouth to an unconscious person. Get medical aid immediately.
Note to Physician
Treat symptomatically

Section 5: FIRE FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media:
Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide
Specific hazards arising from the chemical (e.g., nature of any hazardous combustion products):
Carbon oxides expected to be the primary hazardous combustion product
Special protective equipment and precautions for fire fighters:
Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes. Keep unopened containers cool by spraying with water.
Unusual Fire and Explosion Hazards:
- May produce a floating fire hazard.
- Static ignition hazard can result from handling and use.
- Vapors may travel to source of ignition and flash back
- Vapors may settle in low or confined spaces

Flammable Properties

Classification	OSHA/NFPA Class IB Flammable Liquid
Flash Point	11° C (52°F) – closed cup
Autoignition temperature	464° C (867°F)

Section 6: ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures:
Wear respiratory protection. Do not inhale vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.
Environmental precautions:
Stop leak. Contain spill if possible and safe to do so. Prevent product from entering drains.
Methods and materials for containment and clean up:
Contain spill, then collect with an electrically protected vacuum cleaner or by wet-brushing and put material into a convenient waste disposal container. Keep container closed.

Section 7: HANDLING AND STORAGE

AZER SCIENTIFIC

SDS Safety Data Sheet – Methyl Alcohol

Precautions for safe handling:
Do not get on skin or in eyes. Do not inhale vapors or mist. Keep away from sources of ignition-no smoking. Take measures to prevent the buildup of electrostatic charge.

Conditions for safe storage, including any incompatibilities:
Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage.

Section 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters, e.g., occupational exposure limit values or biological limit values:
Occupational Exposure Limits

Component	Source	Type	Value	Note
Methyl Alcohol	US (OSHA)	TWA	200 ppm	
Methyl Alcohol	US (ACGIH)	TWA	200 ppm	
Methyl Alcohol	US (ACGIH)	STEL	250 ppm	

Appropriate engineering controls:
General room or local exhaust ventilation is usually required to meet exposure limit(s). Electrical equipment should be grounded and conform to applicable electrical code.
Individual protection measures, such as personal protective equipment:
Respiratory Protection
Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).
Hand protection:
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove's outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands.
Eye protection:
Use chemical safety goggles and/or a full face shield where splashing is possible. Use equipment approved by appropriate government standards, such as NIOSH (US) or EN166 (EU). Maintain eye wash fountain and quick-drench facilities in work area.
Skin and body protection:
Wear impervious, flame retardant, antistatic protective clothing, including boots, gloves, lab coat, apron or coveralls, as appropriate, to prevent skin contact.
Hygiene measures:
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance *(physical state, color, etc.)*	Liquid. Colorless. Clear
Odor	Sharp, Pungent
Odor threshold	Specific data not available
pH	Specific data not available
Freezing point	-98° C (-144° F)
Initial boiling point and boiling range	64°C (147°F)
Flash point	11°C (52°F) – Closed cup
Evaporation rate	Specific data not available
Flammability (solid, gas)	Flammable
Upper / Lower flammability or explosive limits	36.0% (V) / 6.0%(V)
Vapor pressure	130.3 kPa (97.7 mHg) at 20°C (68°F)
Vapor density	1.1

AZER SCIENTIFIC

SDS Safety Data Sheet – Methyl Alcohol

Relative density	0.791g/cm^3 at 25°C (77°F)
Solubility(ies)	Completely Miscible
Partition coefficient n-octanol/water(ies)	log Pow: -0.77
Auto-ignition temperature	464°C (867°F)
Decomposition temperature	Specific data not available
Formula (METHYL ALCOHOL)	CH_4O
Molecular weight (METHYL ALCOHOL)	32.04 g/mol

Section 10: STABILITY AND REACTIVITY

Chemical Stability	Stable under recommended storage conditions
Possibility of hazardous reactions	Vapors may form explosive mixture with air
Conditions to avoid (e.g., static discharge, shock or vibration)	Heat, flames and spark. Extreme temperatures and direct sunlight.
Incompatible materials	Acid chlorides, Acid anhydrides, Oxidizing agents, Alkali metals, Reducing agents, Acids
Hazardous decomposition products	Carbon oxides are expected to be, under fire conditions, the primary hazardous decomposition products

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Section 11: TOXICOLOGICAL INFORMATION

Methyl alcohol 67-56-1

Product Summary: Classification of teratogenicity or reproductive toxicity cannot be determined with available data for this product. No data available to designate the product as causing specific target organ toxicity through repeated exposure. No data available to designate product as an aspiration hazard.

Acute Toxicity:

LC50 Inhalation	Rat	128.2 mg/L	4 hours
LD50 Inhalation	Rat	87.6 mg/L	6 hours
LD50 Dermal	Rabbit	17,100 mg/kg	
LD50 Oral	Rat	1,187-2,769 mg/kg	
LDlo	Human	143 mg/kg	Signs and symptoms of dyspnea and gastrointestinal disturbances such as nausea, vomiting, and diarrhea

Irritation:
Eyes
Rabbit – no eye irritation

Respiratory or Skin Sensitization
Maximization Test – Guinea Pig – Sensitization not displayed in laboratory animals when following OECD Test Guideline 406.

Skin
No data available

Germ cell mutagenicity
Genotoxicity in vitro – in vitro assay – S. typhimurium – with and without metabolic activation – negative

Specific target organ toxicity – single exposure (Globally Harmonized System)
May cause damage to organs

Carcinogenicity

AZER SCIENTIFIC

SDS Safety Data Sheet – Methyl Alcohol

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by IARC
ACGIH: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Other Hazards

Organ	Description
Eyes	Direct contact with the eyes produces a mild, reversible irritation, assuming treatment is initiated promptly.
Ingestion	Toxic. Can be fatal or cause blindness through ingestion. Ingestion may cause gastrointestinal disturbances such as nausea, vomiting and diarrhea.
Inhalation	Toxic by inhalation. Vapor harmful. Can cause irritation to the respiratory tract.
Skin	Toxic in contact with skin. Irritating to skin.

Section 12: ECOLOGICAL INFORMATION

Methyl Alcohol 67-56-1
Ecotoxicity (aquatic and terrestrial, where available):
Acute Fish Toxicity (METHANOL)
LD50 / 96 hours Lepomis macrocirus: 15,400 mg/L / LC50 / 96 hours Fathead minnow: 29,400 mg/L

Toxic to Daphnia and Other Aquatic Invertebrates
EC50 / 48 h / Water Flea – >10,000.00 mg/L

Toxicity to Aquatic Plants (METHANOL)
EC50 / 96 hours Scenedesmus capricornutum 22,000 mg/L

Persistence and degradability:
72% - Readily biodegradable

Bioaccumulative potential:
Bioaccumulation: Carp / 72d / BCF: 1.0

Other adverse effects:
BOD; 600 mg/g – 1120 mg/g COD : 1420 mg/g

Section 13: DISPOSAL CONSIDERATIONS

Description of waste residues and information on their safe handling and methods of disposal, including the disposal of any contaminated packaging:
Vapors may collect in empty containers. Treat empty containers as hazardous. Dispose of spill- cleanup and other wastes in accordance with federal, state, and local regulations. Offer surplus and non-recyclable solutions to a licensed disposal company.

Section 14: TRANSPORT INFORMATION

AZER SCIENTIFIC

SDS Safety Data Sheet – Methyl Alcohol

DOT
UN-Number: UN1230 Class: 3 Packing Group: II
Label Statement:
Reportable Quantity 5,000 lbs.

IMDG
UN-Number: UN1230 Class: 3 Packing Group: II
EMS-No: F-E, S-D
Proper shipping name: METHANOL
Marine pollutant: No

IATA
UN-Number: UN1230 Class: 3 (6.1) Packing Group: II
Proper shipping name: Methanol

Section 15: REGULATORY INFORMATION

Safety, health and environmental regulations specific for the product in question:
OSHA Hazards
Flammable liquid, Target Organ Effect, Toxic by inhalation, Toxic by ingestion, Toxic by skin absorption

All ingredients are on the following inventories or are exempted from listing

Country	Notification
Australia	AICS
Canada	DSL
China	IECS
European Union	EINECS
Japan	ENCS/ISHL
Korea	ECL
New Zealand	NZIoC
Philippines	PICCS
United States of America	TSCA

SARA 302 Components
SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components
The following components are subject to reporting levels established by SARA Title III, Section 313: METHANOL (CAS# 67-56-1) Revision date: 2007-07-01

SARA 311/312 Hazards
Acute Health Hazard
Chronic Health Hazard
Fire Hazard

CERCLA
Methanol CAS-No. 67-56-1. RQ: 5,000 lbs

Massachusetts Right to Know Components
Methanol CAS-No. 67-56-1 Revision Date 2007-07-01

Pennsylvania Right to Know Components
Methanol CAS-No. 67-56-1 Revision Date 2007-07-01

New Jersey Right to Know Components
Methanol CAS-No. 67-56-1 Revision Date 2007-07-01

AZER SCIENTIFIC

SDS Safety Data Sheet – Methyl Alcohol

California Prop 65 Components
WARNING! This product contains a chemical known to the State of California to cause birth defects or other reproductive harm. METHANOL CAS-No. 67-56-1 Revision date 2012-03-16
CANADA

WHMIS (Canada):	Class B-2: Flammable liquid Class D-1A: Very toxic material
Canadian lists:	**CEPA Toxic substances**: Listed

Section 16: OTHER INFORMATION: INCLUDING INFORMATION ON PREPARATION AND REVISION OF THE SDS

Disclaimer
Azer Scientific believes that the information on this MSDS was obtained from reliable sources. However, the information is provided without any warranty, expressed or implied, regarding its correctness. Some information presented and conclusions drawn herein are from sources other than direct test data on the substance itself. The conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, Azer Scientific does not assume responsibility and expressly disclaims liability for loss, damage, or expense arising out of or in any way connected with handling, storage, use, or disposal of this product. If the product is used as a component in another product, this MSDS information may not be applicable. Information is correct to the best of our knowledge at the date of the MSDS publication.

APPENDIX D: SDS REQUEST LETTER EXAMPLE

Brooklyn College
2900 Bedford Avenue
Brooklyn, NY, 11210

(Date)

Attn: (enter name of contact person)
(City, State zip code)

Dear Sir:

The Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1920.1200) requires employers be provided Safety Data Sheets (SDSs) for all hazardous substances used in the facility, and to make these SDSs available to employees potentially exposed to these hazardous substances. Brooklyn College, therefore, requests a copy of the SDS and any additional relevant data concerning the safety and health aspects for the product listed as (Insert product name) because the SDS was not received with the initial shipment.

The SDS and any other relevant information should be sent within (select appropriate time) days. Delays in receiving the SDS information may prevent use of the product. Please send the requested information to (Insert name of contact person).

Please be advised that if we do not receive the SDS on the above chemical by (date), we may have to notify OSHA of our inability to obtain this information. It is our intent to comply with all provisions of the Hazard Communication Standard (1910.1200) and the SDS's are integral to this effort.

Thank you. If you have any questions concerning this matter, please contact (Insert name of contact person) at (Insert contact phone number) or our Office of Environmental Health and Safety at ehs@brooklyn.cuny.edu, 718-951-5400.

Sincerely,

(Sign name)

(Enter name of contact person)

APPENDIX E: USER GUIDE TO CHEMTRACKER

ChemTracker
The higher education collaborative for chemical inventory management

Stanford | Environmental Health & Safety

ChemTracker 4.0
Inventory Management User Guide
Part 1: Login/Logout, Layout, ChemInfo & MSDS

- New to ChemTracker?
- Login
- Logout
- Home Screen Layout
- General Screen Layout
- Clearing Fields
- ChemInfo and MSDS

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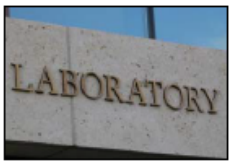
ChemTracker

New to ChemTracker?

- Review http://chemtracker.stanford.edu/web/help/home/v3-help-training/start-up-information/ for information about
  - Supported browsers
  - Necessary computer power/specifications
  - Desktop setup



- Each ChemTracker Consortium member institution has at least one ChemTracker Administrator (CTA) to assist you.
- There is a *Help* link in the upper right on every page in the ChemTracker application.

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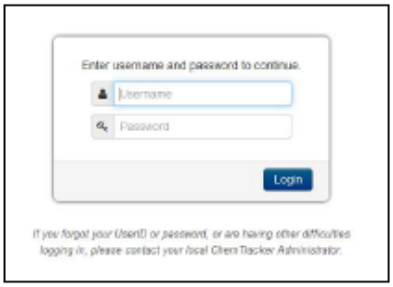
ChemTracker

Login

1. At http://chemtracker.stanford.edu/members/, select the *ChemTracker 4.0* link for your institution. Links will be posted February 2014. Before then, contact your CT Administrator.
2. Enter your ChemTracker *Username* and *Password*; these are case sensitive. Your CT *Username* and *Password* can be obtained from your campus CT Administrator.
3. Press the *Login* button or the *Enter* key.



If you have forgotten your Username or Password, or want to reset your password, contact your local ChemTracker Administrator.

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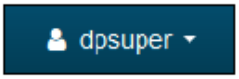
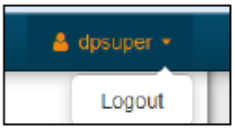
ChemTracker

Logout

1. Click the pull-down tab in the upper right next to your UserID.
2. Click *Logout* and your session ends. You will be returned to the Login page.





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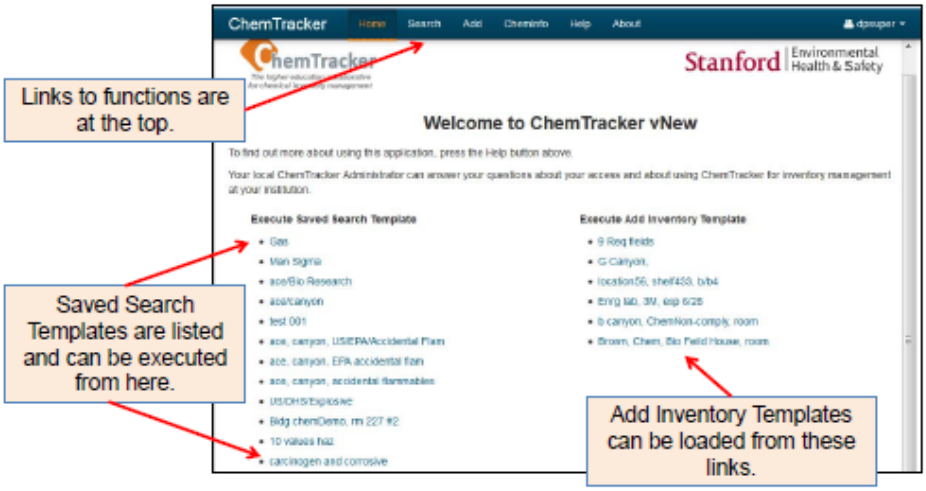
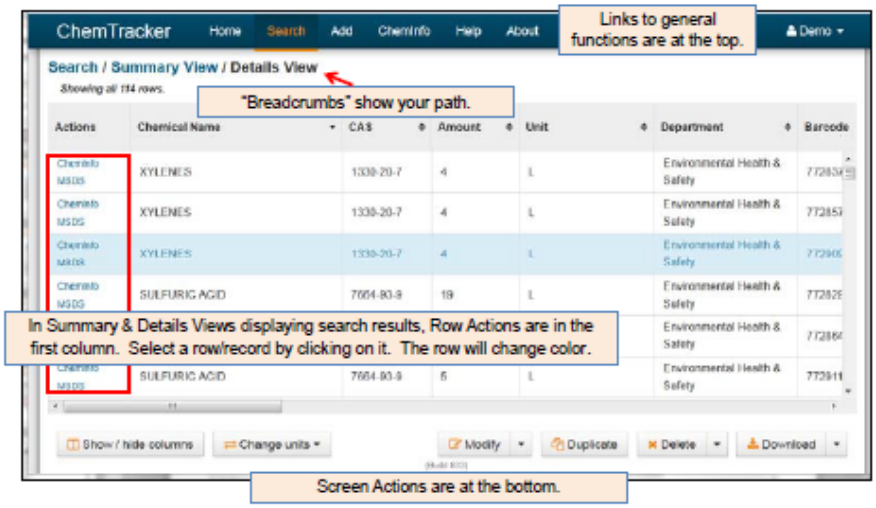
ChemTracker

Home Screen Layout



ChemTracker

General Screen Layout



ChemTracker

Clearing Fields

- Using the *Clear selections* button clears all the fields.

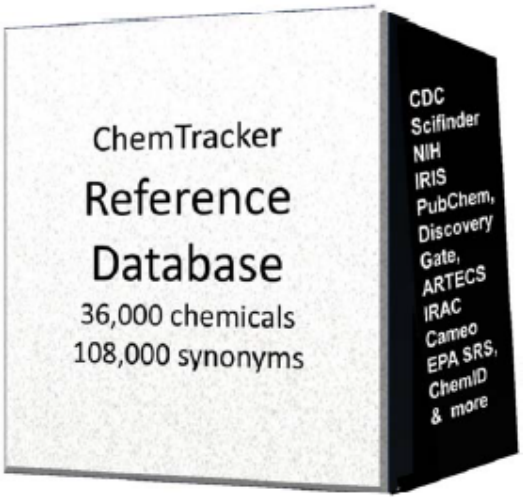
- Press the "X" at the end of a field value entry box.

- Backspace over a date or incompletely-entered value.

ChemTracker

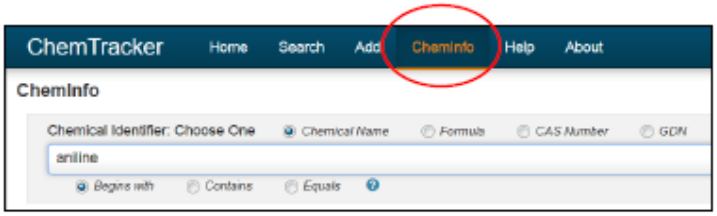
ChemInfo

- *ChemInfo* is a graphical display of information about chemicals classified in ChemTracker's Database. Information is from at least 3 verified sources (such as CDC, Scifinder, NIH, PubChem, ARTECS, IRAC, etc.)
- The chemical you search for does not have to be in your institution's inventory because you are searching the ChemTracker Reference Database (36,000 entries; 108,000 synonyms).



ChemTracker

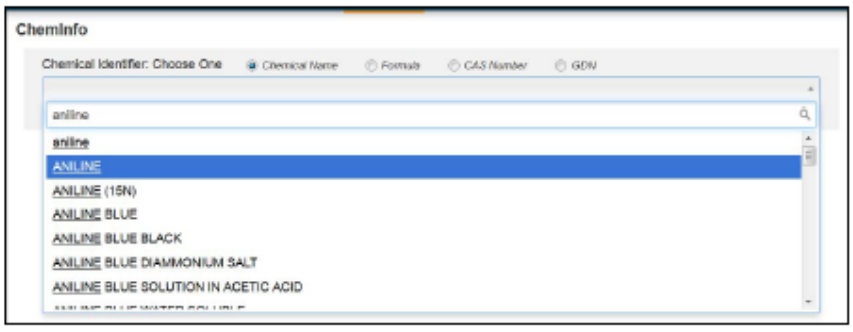
ChemInfo and MSDSs



- Press *ChemInfo* in the navigation bar at the top.
- Select a Chemical Identifier with its appropriate operator:
  - Chemical Name (Begins With, Contains, Equals)
  - Formula (molecular, structural, empirical) (Begins With, Contains, Equals)
  - CAS Number (Equals)
  - GDN (Equals)
- Enter at least 3 characters for a Chemical Name or Formula, and the exact value for a CAS Number or GDN.
- The chemical does not have to be in your institution's inventory; you are searching the reference database.

ChemTracker

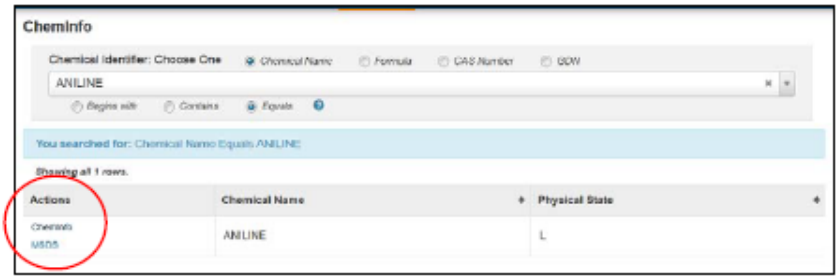
ChemInfo and MSDSs



- Select the correct value in the pull-down list that appears.
- Press the *Search* button at the bottom of the screen.

ChemTracker

ChemInfo and MSDSs

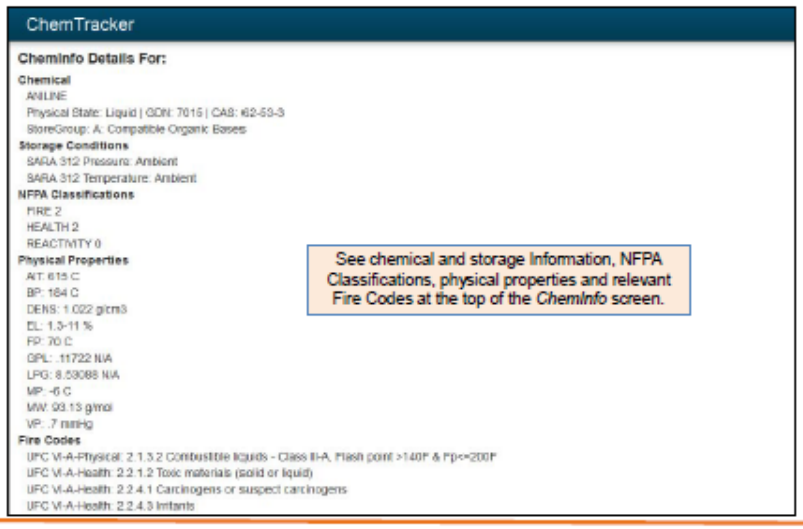


- Press *ChemInfo* or *MSDS** in the Actions column to the left of the item.

*10/18/13: The default MSDS provider's site, Vermont SIRI, has been taken offline, so this functionality does not work for members using the default. The MSDS link is still active for institutions with paid MSDS subscriptions linked to ChemTracker.

ChemTracker

ChemInfo Display, Top



See chemical and storage Information, NFPA Classifications, physical properties and relevant Fire Codes at the top of the *ChemInfo* screen.

ChemTracker

ChemInfo Display, Middle

Hazards
3 - Flammable liquid (main hazard)
13 - Moderately toxic
16 - Combustible
27 - Suspect carcinogen/mutagen
32 - Skin irritant
41 - Lung irritant
42 - Eye irritant
45 - Skin-absorbable poison
65 - California Prop. 65 Carcinogen

Regulations
CALIFORNIA AIR AB2588 Appendix A-I
CALIFORNIA CES Title 19-2770.5 CalARP
DOT Hazard Class or Div. 6.1
DOT PACKING GROUP GROUP II
EPA Clean Air Act 40-CFR-63 HAP
EPA RCRA U Listed
IBC Health Toxic
IBC Physical COMBUSTIBLE LIQUID Class IIIA
Local-NYC SARA-RTK RTK-LISTED
Local-NYC SARA-RTK SARA-313
REG CA PROP65CARC
REG LOCL PA WST H2O
REG US A.H.M.
REG US E.H.S. 40 CFR 355
SARA HAZ 312-D
SARA HAZ 312-F
SARA HAZ 312-I
US OSHA Particularly Hazardous Substance

Hazards and regulations concerning the chemical are in the middle of the ChemInfo screen.

ChemTracker

ChemInfo Display, Bottom

Toxicology
ORAIZE DERM RABBIT 20 MG 24 HOURS
ORAIZE EYE RABBIT 102 MG
IDLH INHAIL NA 100 PPM
LC50 INHAIL MOUSE 175 PPM 7 HOURS
LCLO INHAIL RAT 250 PPM 4 HOURS
LD50 DERM RAT 1400 MG/KG
LD50 IPR RAT 420 MG/KG
LD50 ORAL MOUSE 464 MG/KG
LD50 ORAL RAT 250 MG/KG
TCLO INHAIL RAT 3 MG/M3 22 WEEKS
TDLO ORAL HUMAN - CHILD 5125 MG/KG
TDLO ORAL RAT 913 MG/KG 2 WEEKS
TDLO Reproductive ORAL RAT 4480 MG/KG

Synonyms
DOT Aniline
MAIN Aniline
SYNONYM Aminobenzene
SYNONYM Aniline, free base
SYNONYM Benzenamine
SYNONYM Phenylamine

Additional Identifiers
BELSTEIN 605611
CAS 62-53-3
CERS ID 104209
EC NUMBER 200-539-3
EPA-HAP Grouping EPA HAP (Hazardous Air Pollutants) listed
FORMULA, MOLECULAR C6H7N
FORMULA, STRUCTURAL C6H5NH2
ICSC 0011
IRIS NAME Aniline
MDL NUM MFCD00007629
RCRA U012
RTECS BW6650000
UN/NA UN1547

Toxicology, synonyms and additional identifiers are shown at the bottom.

ChemTracker

ChemInfo and MSDS from Search Results
in Summary or Details View

ChemInfo

- From the Summary View or the Details View, select *ChemInfo* in the *Actions* column on the far left for the chemical you wish to see.

MSDS*

- From the Summary View or the Details View, select *MSDS* in the *Actions* column for the item you want
- A window or tab opens from the third-party MSDS provider's site, and fills in the chemical name (if the provider's site allows)

Actions	Amount	CAS	Chemical Name	Containers	Phys State
ChemInfo MSDS	16.246	62-53-3	ANILINE	37	L

*10/18/13: The default MSDS provider's site, Vermont SIRI, has been taken offline, so this functionality does not work for members using the default. The MSDS link is still active for institutions with paid MSDS subscriptions linked to ChemTracker.

ChemTracker

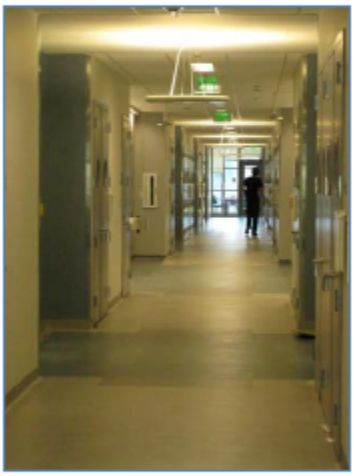
ChemInfo and MSDS from Search Results
in Summary or Details View

If the ChemInfo link shows a broken link icon:

- The item in that row is not linked to the ChemTracker Reference Database (does not have a GDN).
- Copy the chemical name, select the *ChemInfo* button in the navigation bar at the top of the screen, then paste the name into the Chemical Identifier field and select Chemical Name. You probably want to do a Contains search and modify the name to be more general to find the item in the ChemTracker Reference Database.

ChemTracker

Thank you. We appreciate your continued support and use of ChemTracker.



Remember, for help….
Each ChemTracker institution has at least one ChemTracker Administrator to assist you,
and
there is a *Help* link on every ChemTracker page in the upper right.

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APPENDIX F. WRITTEN HAZARD COMMUNICATION PROGRAM

GENERAL INFORAMATION

In order to comply with OSHA 1910.1200, Hazard Communication Standard, the following written Hazard Communication Program has been established for Brooklyn College, Department of [Insert School, Department, or Office Name].

The written program will be available at [Insert Location of HCP] for review by any interested employee.

1. Container Labeling:

[Insert Name of Responsible Person] shall verify that all in-coming containers received for use are clearly labeled to indicate:

- The identity of the contents (the identity must match the corresponding SDS).
- Appropriate hazard warnings (including routes of entry and target organs).
- The name and address of the manufacturer, importer, or responsible party.

Small quantities intended for immediate use may be placed in a container without a label, provided that the individual keeps it in their possession at all times and the product is used up during the work shift or properly disposed of at the end of the work day. However, the container should be marked with its contents. The supervisor of each area will ensure that all secondary containers (those containers other than the original) will be labeled with to be compliant with the Globally Harmonized System with

Where it is infeasible to include all label elements, the departmental responsible person must describe below how label information will be communicated e.g. posted on the wall of the classroom or workroom.

_____

_____

2. Safety Data Sheets (SDS)

Brooklyn College ensures students, faculty and staff access to SDSs for the chemicals they work with. The majority of chemical inventories are stored in the College's central database on Chemtracker (see **Appendix E**). Each chemical is linked to a corresponding SDS online. When the inventory is not maintained via ChemTracker, the department assigns someone responsible for obtaining and maintaining Safety Data Sheets. The responsible person will review the SDS for new and significant health/safety information. [Insert Name of Responsible Person] will see that any new information is passed on to the affected employees. If a SDS is incomplete, a new SDS will be requested from the manufacturer/supplier by [Insert Name of Responsible Person]. **Appendix C** '*SDS Request Letter Example*' can be used to request an SDS. SDSs are available to each employee during his/her work shift. To obtain a copy of the SDS the employee should contact the department supervisor.

3. Employee Training and Information

[Insert Name of Responsible Person] are responsible for reviewing SDSs and transmitting relevant information to employees on hazardous chemicals in the work area at the initial assignment and whenever a new hazard category is introduced.

The Office of Environmental Health and Safety is responsible for providing annual, or as requested, Hazard Communication training. Environmental Health and Safety will ensure that all elements specified below are carried out:

- An overview of the requirements contained in the OSHA Hazard Communication Standard, 1910.1200
- Explanation of the labels and the labeling system
- Explanation of SDSs and how employees can use this information
- Location and availability of the written Hazard Communication Program
- Measures employees can take to protect themselves from hazards in their workplace, including specific procedures the employer has implemented to prevent exposure to hazardous chemicals such as appropriate work practices, emergency procedures, and personal protective equipment
- Any operations in the work area where hazardous chemicals are present
- Physical and health hazards of the chemical categories in the work area

Prior to a new chemical hazard category being introduced into the workplace, each employee of that area will be given information as outlined above.

4. List of Hazardous Chemicals

All locations (e.g., laboratories, clinics, service areas, mechanical rooms, print shops, etc.) which store and/or use hazardous chemicals are required to maintain a complete inventory of all hazardous chemicals. Non-laboratory settings can choose to use the inventory form in **Appendix A** to document all known toxic and hazardous substances used at that workplace. For all labs, Brooklyn College requires that the ChemTracker Chemical Inventory System be used. ChemTracker is a web-based chemical inventory system for inventory management within research laboratories and facilities. Chemical inventories must be maintained in ChemTracker and updated regularly to reflect the typical quantities of chemicals present in the area. Information on how to utilize ChemTracker is available in **Appendix E** and at: https://chemtracker.org/.

5. Hazardous Non-Routine Tasks

Periodically, employees are required to perform hazardous non-routine tasks. Prior to starting work on such projects, each affected employee will be given information by the [Insert Title of Responsible Person] about hazardous chemicals to which they may be exposed during such activity.

This information will include:

- Specific hazards

- Protective/safety measures the employee can take
- Measures the company has taken to lessen the hazards including ventilation, respirators, presence of another employee, and emergency procedures

If employees do not understand any aspect of the above information, they should not perform the task. The [Insert Title of Responsible Person] should be contacted for additional training.

6. Hazardous Substances in Unlabeled Pipes (if applicable)

To ensure that our employees who work on unlabeled pipes have been informed as to the hazardous substances contained within, the following policy has been established. Prior to starting work on unlabeled pipes employees are to contact their supervisor for the following information:

- The hazardous substance in the pipe
- Potential hazards
- Safety precautions that shall be taken

7. Informing Contractors

It is the responsibility of the project manager to provide contractors the following information:

- Notify contractors of the toxic and hazardous substances to which they may be exposed while on the job site and how the appropriate SDS can be obtained
- Precautionary measures that need to be taken to protect contracted employees during the workplace's normal operating conditions and in foreseeable emergencies
- Explanation of labeling systems used by CUNY and/or Brooklyn College

The respective project manager will be responsible for contacting each contractor before work is started at Brooklyn College to gather and disseminate any information concerning chemical hazards that the contractor is bringing to the workplace.

If anyone has questions or does not understand this plan, please contact Environmental Health and Safety at ehs@brooklyn.cuny.edu or x5400. The Brooklyn College Hazard Communication Program will be monitored by Environmental Health and Safety to ensure that the program is carried out and the plan is effective.

APPENDIX G: ACRONYMS

CAS – Chemical Abstracts Service

CFR – Code of Federal Regulations

CUNY – City University of New York

EHS – Environmental Health and Safety

HCP – Hazard Communication Program

HCS – Hazard Communication Standard

IARC – International Agency for Research on Cancer

SDS – Safety Data Sheet

NTP – National Toxicology Program

OSHA – Occupational Safety & Health Administration

PEL – Permissible Exposure Limit

PPE – Personal Protective Equipment

TLV – Threshold Limit Value

APPENDIX H: DEFINITIONS

Acute Effect: A health effect that occurs soon after a brief exposure to the offending agent.

Appropriate hazard warning: Any words, pictures, symbols, or combination thereof appearing on a label or other appropriate form of warning that convey the health and physical hazards, including the target organ effects of the chemical(s) in the container(s).

Carcinogen: A chemical that is capable of causing cancer. Under the HCS a carcinogen is any chemical that has been found to be a carcinogen or potential carcinogen by the International Agency for Research on Cancer, is listed as a carcinogen or potential carcinogen in the *Annual Report on Carcinogens* published by the National Toxicology Program, or is regulated by OSHA as a carcinogen.

Chemical: Any element, chemical compound or mixture of elements and/or compounds

Chemical name: (a) the scientific designation of a chemical in accordance with the nomenclature system developed by the International Union of Pure and Applied Chemistry (IUPAC) or the Chemical Abstracts Service (CAS) rules of nomenclature; or **(b)** a name that clearly identifies the chemical for the purpose of conducting a hazard evaluation.

Chronic Effect: A health effect that occurs over a long period of time as a result of continued or periodic exposure to the offending agent.

Combustible Liquid: Any liquid having a flash point at or above 100 degrees F (37.8 degrees C), but below 200 degrees F (93.3 degrees C).

Container: Any bag, barrel, bottle, box, can, cylinder, drum, reaction vessel, storage tank, or the like that contains a hazardous chemical. For purposes of this section, pipes or piping systems, and engines, fuel tanks, or other operating systems in a vehicle, are not considered to be containers.

Corrosive: A chemical that causes visible destruction of, or irreversible alterations in, living tissue by chemical action at the site of contact.

Employee: A worker who may be exposed to hazardous chemicals under normal operating conditions or in foreseeable emergencies. Workers such as office workers who encounter hazardous chemicals only in non-routine, isolated instances are not covered.

Explosive: A chemical that causes a sudden, almost instantaneous release of pressure, gas, and heat when subjected to sudden shock, pressure, or high temperature.

Expose or **Exposure:** An employee is subjected to a hazardous chemical in the course of employment through any route of entry, including inhalation, ingestion, skin contact, or absorption. The term includes potential, possible, or accidental exposure under normal conditions of use or in a reasonably foreseeable emergency.

Flammable: A chemical that catches on fire easily and burns readily.

Flash Point: The minimum temperature at which a liquid gives off a vapor in sufficient concentration to ignite

Hazard Category: A grouping of hazardous chemicals with similar properties.

Hazardous Chemical: Defined by OSHA as any chemical that is a health hazard or a physical hazard.

Hazard Warning: Any words, pictures, symbols, or combination thereof appearing on a label that conveys the hazards of the chemical(s) in the container.

Health hazard: Means a chemical for which there is statistically significant evidence based on at least one study conducted in accordance with established scientific principles that acute or chronic health effects may occur in exposed employees. The term "health hazard" includes chemicals which are carcinogens, toxic or highly toxic agents, reproductive toxins, irritants, corrosives, sensitizers, hepatotoxins, nephrotoxins, neurotoxins, agents which act on the hematopoietic system, and agents which damage the lungs, skin, eyes, or mucous membranes.

Hematopoietic System - The blood forming mechanism of the human body.

Hepatotoxin - A substance that causes injury to the liver.

Irritant: A chemical that is not corrosive but causes a reversible inflammatory effect on living tissue by chemical action at the site of contact.

Label: Any written, printed, or graphic material displayed on or affixed to containers of hazardous chemicals.

Safety Data Sheet ("SDS"): Written or printed material concerning a hazardous chemical that includes information on the chemical's identity; physical and chemical characteristics; physical and health hazards; primary routes of entry; exposure limits; whether the chemical is a carcinogen; precautions for safe handling and use; control measures; emergency and first aid procedures; the date of preparation of the SDS or the last change to it; and the name, address, and telephone number of the manufacturer, importer, or employer distributing the SDS. SDSs are prepared in accordance with the requirements of the OSHA standard for that document.

Nephrotoxin - A substance that causes injury to the kidneys.

Neurotoxin - A material that affects the nerve cells and may produce emotional or behavioral abnormalities.

Oxidizer: A chemical other than a blasting agent or explosive that initiates or promotes combustion in other materials, thereby causing fire either of itself or through the release of oxygen or other gases.

Permissible Exposure Limit (PEL): An exposure limit that is published and enforced by OSHA as a legal standard.

Physical hazard: Means a chemical for which there is scientifically valid evidence that it is a combustible liquid, a compressed gas, explosive, flammable, an organic peroxide, an oxidizer, pyrophoric, unstable (reactive) or water-reactive.

Pyrophoric: A chemical that will ignite spontaneously in air at a temperature of 130 degrees F (54.4 degrees C) or below.

Readily Available: To be quickly and easily accessible at any time for information and emergency use.

Sensitizer: A chemical that causes a substantial proportion of exposed people or animals to develop an allergic reaction in normal tissue after repeated exposure to the chemical.

Threshold Limit Value (TLV): A time-weighted average concentration under which most people can work consistently for eight hours a day, day after day, with no harmful effects. The American Conference of Governmental Industrial Hygienists publishes the values in a table annually.

Toxic: Causing acute or chronic injury to the human body or suspected of being able to cause disease or injury under some conditions. The HCS defines "toxic" and "highly toxic" specifically by the chemical's median lethal dose and median lethal concentration for laboratory animals.

Unstable (reactive): A chemical that in the pure state, or as produced or transported, will vigorously polymerize, decompose, condense, or will become self-reactive under conditions of shocks, pressure, or temperature.

Use (as defined by OSHA): To package, handle, react, or transfer. This is an intentionally broad scope, and includes any situation where a chemical is present in such a way that employees may be exposed under normal conditions of use or in a foreseeable emergency.

Water-reactive: A chemical that reacts with water to release a gas that either is flammable or presents a health hazard.

Work area: A room, defined space, utility structure, or an emergency response site in a workplace where hazardous chemicals are present, produced, or used and where employees are present.

Workplace: An establishment, job site, or project at one geographical location containing one or more work areas.