



NEW YORK CITY COLLEGE OF TECHNOLOGY

The City University of New York
300 Jay Street, Brooklyn, NY 11201-1909

Hazardous Communication Plan

2021

1. INTRODUCTION

The City University of New York (CUNY) 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 as enforced by PESH (Public Employee Safety and Health Division) of New York State Department of Labor). 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.

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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 G-Definitions) at NYC College of Technology, 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 CUNY 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 Environmental Health and Safety Officer must receive a copy of the chemical inventory list (updated as necessary). Employees who have questions about the chemical inventory list should contact the Director of the Department.

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 MDS, 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 Duper 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 Director of the Department.

See Appendix B for an example of a chemical label.

8. SAFETY DATA SHEETS (SDS)

8.1 GENERAL

MDSs 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 Material Safety Data Sheets should contact the Director of the Department.

8.2 OBTAINING SDSS

8.3 Each department 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 department 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. EHS does maintain a central file of SDSs. However, SDSs for many products are available through the Internet.

8.4 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

8.5 REVIEW OF SDSS

Each department is 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.

8.6 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 Director of the Department.

8.7 HAZARD DETERMINATION

NYC College of Technology 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. RECORDKEEPING

The New York State Right To Know Law requires all employers to maintain records for 40 years of all employees who handle or use substances included in OSHA's Subpart Z for which OSHA has established exposure standards (CFR Title 29, part 1910, Subpart Z see pages 20 – 25). These records must include the name, address and social security number, the chemical and trade name, Chemical Abstract Service Number (CAS) and the name and manufacturer of each product to which the employee has been exposed. These records are kept in the EHS and Human Resources offices.

10. EMPLOYEE INFORMATION AND TRAINING

Supervisors 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

The Environmental Health and Safety Officer 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 as enforced by PESH (Public Employee Safety and Health Division) of New York State Department of Labor)
- 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. Supervisors are 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 Environmental Health and Safety Officer will provide assistance in evaluating the hazards and determining the appropriate precautions for non-routine tasks, as requested.

12. CONTRACTORS

Contractors working at NYC College of Technology 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 the Environmental Health and Safety Officer with a chemical inventory and SDSs for the materials that will be introduced into the work area during the course of work at NYC College of Technology. Contractors must also provide information regarding the location of chemical use and storage.

13. HAZARDOUS WASTE DISPOSAL

Please refer to the NYC College of Technology 'Hazardous Waste Plan' 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
- SDS request correspondence (letter, email, log of telephone conversations)
- Completed Model Written Hazard Communication Program (See Appendix E)

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.

APPENDIX A: CHEMICAL INVENTORY

Department: _____ Contact: _____ Date: _____

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

APPENDIX B: CHEMICAL LABEL EXAMPLE

Ethanol

CAS RN: 64-17-5

Danger



H225 - Highly flammable liquid and vapor.
H302 - Harmful if swallowed.
H315 - Causes skin irritation.
H319 - Causes serious eye irritation.
H335 - May cause respiratory irritation.
H370 - Causes damage to organs <or state all organs affected, if known> <state route of exposure if it is conclusively proven that no other routes of exposure cause the hazard>.
P210 - Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233 - Keep container tightly closed.
P235 - Keep cool.
P240 - Ground and bond container and receiving equipment.
P241 - Use explosion-proof [electrical/ventilating/lighting/...] equipment.
P242 - Use non-sparking tools.
P243 - Take action to prevent static discharges.
P260 - Do not breathe dust/fume/gas/mist/vapors/spray.
P264 - Wash ... thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P271 - Use only outdoors or in a well-ventilated area.
P280 - Wear protective gloves/protective clothing/eye protection/face protection.
P301 + P312 - IF SWALLOWED: Call a POISON CENTER/doctor/... if you feel unwell.
P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing Rinse skin with water [or shower].
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P370 + P378 - In case of fire: Use... for extinction.
P403 + P235 - Store in a well-ventilated place. Keep cool.
P405 - Store locked up.
P501 - Dispose of contents/container to ...

Company / Supplier:

Sigma-Aldrich
3050 Spruce Street
Saint Louis, MO 63103
USA

APPENDIX C: SDS EXAMPLE

SIGMA-ALDRICH

sigma-aldrich.com

SAFETY DATA SHEET

Version 3.6
Revision Date 07/09/2015
Print Date 11/14/2016

1. PRODUCT AND COMPANY IDENTIFICATION

1.1 Product identifiers

Product name : Ethanol

Product Number : 652261
Brand : Sigma-Aldrich
Index-No. : 603-002-00-5

CAS-No. : 64-17-5

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet

Company : Sigma-Aldrich
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +1 800-325-5832
Fax : +1 800-325-5052

1.4 Emergency telephone number

Emergency Phone # : +1-703-527-3887 (CHEMTREC)

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Flammable liquids (Category 2), H225
Eye irritation (Category 2A), H319

For the full text of the H-Statements mentioned in this Section, see Section 16.

2.2 GHS Label elements, including precautionary statements

Pictogram



Signal word

Danger

Hazard statement(s)

H225 Highly flammable liquid and vapour.
H319 Causes serious eye irritation.

Precautionary statement(s)

P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/ eye protection/ face protection.
P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing.

P305 + P351 + P338	Rinse skin with water/shower. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P337 + P313 P370 + P378	If eye irritation persists: Get medical advice/ attention. In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish.
P403 + P235 P501	Store in a well-ventilated place. Keep cool. Dispose of contents/ container to an approved waste disposal plant.

2.3 Hazards not otherwise classified (HNOC) or not covered by GHS - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms	: Ethyl alcohol
Formula	: C ₂ H ₆ O
Molecular weight	: 46.07 g/mol
CAS-No.	: 64-17-5
EC-No.	: 200-578-6
Index-No.	: 603-002-00-5

Hazardous components

Component	Classification	Concentration
Ethanol		
	Flam. Liq. 2; Eye Irrit. 2A; H225, H319	<= 100 %

For the full text of the H-Statements mentioned in this Section, see Section 16.

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11

4.3 Indication of any immediate medical attention and special treatment needed

No data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture

Carbon oxides

5.3 Advice for firefighters

Wear self-contained breathing apparatus for firefighting if necessary.

5.4 Further information

Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. Avoid breathing vapours, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

For personal protection see section 8.

6.2 Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

6.3 Methods and materials for containment and cleaning up

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations (see section 13).

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.

Use explosion-proof equipment. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

For precautions see section 2.2.

7.2 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.

hygroscopic

Storage class (TRGS 510): Flammable liquids

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Components with workplace control parameters

Component	CAS-No.	Value	Control parameters	Basis
Ethanol	64-17-5	TWA	1,000.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
	Remarks	Upper Respiratory Tract irritation Confirmed animal carcinogen with unknown relevance to humans		
		TWA	1,000 ppm 1,900 mg/m ³	USA. OSHA - TABLE Z-1 Limits for Air Contaminants - 1910.1000
		TWA	1,000 ppm 1,900 mg/m ³	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		The value in mg/m ³ is approximate.		
		TWA	1,000.000000 ppm 1,900.000000 mg/m ³	USA. Occupational Exposure Limits (OSHA) - Table Z-1 Limits for Air Contaminants
		The value in mg/m ³ is approximate.		

		TWA	1,000.000000 ppm 1,900.000000 mg/m3	USA. NIOSH Recommended Exposure Limits
		STEL	1,000.000000 ppm	USA. ACGIH Threshold Limit Values (TLV)
		Upper Respiratory Tract irritation Confirmed animal carcinogen with unknown relevance to humans		

8.2 Exposure controls

Appropriate engineering controls

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection

Face shield and safety glasses Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU).

Skin 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.

Full contact

Material: butyl-rubber

Minimum layer thickness: 0.3 mm

Break through time: 480 min

Material tested: Butoject® (KCL 897 / Aldrich Z677647, Size M)

Splash contact

Material: Nitrile rubber

Minimum layer thickness: 0.2 mm

Break through time: 38 min

Material tested: Dermatrill® P (KCL 743 / Aldrich Z677388, Size M)

data source: KCL GmbH, D-36124 Eichenzell, phone +49 (0)6659 87300, e-mail sales@kcl.de, test method: EN374

If used in solution, or mixed with other substances, and under conditions which differ from EN 374, contact the supplier of the CE approved gloves. This recommendation is advisory only and must be evaluated by an industrial hygienist and safety officer familiar with the specific situation of anticipated use by our customers. It should not be construed as offering an approval for any specific use scenario.

Body Protection

impervious clothing, Flame retardant antistatic protective clothing., The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

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 a 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).

Control of environmental exposure

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

- | | |
|---------------|---|
| a) Appearance | Form: liquid, clear
Colour: colourless |
| b) Odour | No data available |

c) Odour Threshold	No data available
d) pH	No data available
e) Melting point/freezing point	Melting point/range: -114 °C (-173 °F) - lit.
f) Initial boiling point and boiling range	78.3 °C (172.9 °F) at 1,013 hPa (760 mmHg) 78 °C (172 °F) - lit.
g) Flash point	14.0 °C (57.2 °F) - closed cup
h) Evaporation rate	No data available
i) Flammability (solid, gas)	No data available
j) Upper/lower flammability or explosive limits	Upper explosion limit: 19 %(V) Lower explosion limit: 3.3 %(V)
k) Vapour pressure	59.5 hPa (44.6 mmHg) at 20.0 °C (68.0 °F)
l) Vapour density	No data available
m) Relative density	0.789 g/cm ³ at 25 °C (77 °F) 0.816 g/cm ³ at 25 °C (77 °F)
n) Water solubility	completely soluble
o) Partition coefficient: n-octanol/water	log Pow: -0.349 at 24 °C (75 °F)
p) Auto-ignition temperature	363.0 °C (685.4 °F)
q) Decomposition temperature	No data available
r) Viscosity	No data available
s) Explosive properties	No data available
t) Oxidizing properties	No data available

9.2 Other safety information

No data available

10. STABILITY AND REACTIVITY

10.1 Reactivity

No data available

10.2 Chemical stability

Stable under recommended storage conditions.

10.3 Possibility of hazardous reactions

Vapours may form explosive mixture with air.

10.4 Conditions to avoid

Heat, flames and sparks.

10.5 Incompatible materials

Alkali metals, Oxidizing agents, Peroxides

10.6 Hazardous decomposition products

Other decomposition products - No data available
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity

LD50 Oral - Rat - 10,470 mg/kg

LC50 Inhalation - Rat - 4 h - 30,000 mg/l

LD50 Dermal - Rabbit - 15,800 mg/kg

No data available

Skin corrosion/irritation

Skin - Rabbit

Result: No skin irritation - 24 h

(OECD Test Guideline 404)

Serious eye damage/eye irritation

Eyes - Rabbit

Result: Moderate eye irritation

(OECD Test Guideline 405)

Respiratory or skin sensitisation

No data available

Germ cell mutagenicity

No data available

Carcinogenicity

Carcinogenicity - Mouse - Oral

Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Liver: Tumors. Blood: Lymphomas including Hodgkin's disease.

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

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.

Reproductive toxicity

No data available

Reproductive toxicity - Human - female - Oral

Effects on Newborn: Apgar score (human only). Effects on Newborn: Other neonatal measures or effects. Effects on Newborn: Drug dependence.

Specific target organ toxicity - single exposure

No data available

Specific target organ toxicity - repeated exposure

No data available

Aspiration hazard

No data available

Additional Information

RTECS: KQ6300000

Central nervous system depression, narcosis, Damage to the heart., To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

Stomach - Irregularities - Based on Human Evidence

Stomach - Irregularities - Based on Human Evidence

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish LC50 - Pimephales promelas (fathead minnow) - 14,200 mg/l - 96 h

Toxicity to daphnia and other aquatic invertebrates LC50 - Ceriodaphnia dubia (water flea) - 5,012 mg/l - 48 h

NOEC - Daphnia magna (Water flea) - 9.6 mg/l - 9 d
Toxicity to algae EC50 - Chlorella vulgaris (Fresh water algae) - 275 mg/l - 72 h
(OECD Test Guideline 201)

12.2 Persistence and degradability

Biodegradability Result: 95 % - Readily biodegradable

12.3 Bioaccumulative potential

Due to the distribution coefficient n-octanol/water, accumulation in organisms is not expected.

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

PBT/vPvB assessment not available as chemical safety assessment not required/not conducted

12.6 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN number: 1170 Class: 3 Packing group: II
Proper shipping name: Ethanol
Reportable Quantity (RQ):

Poison Inhalation Hazard: No

IMDG

UN number: 1170 Class: 3 Packing group: II EMS-No: F-E, S-D
Proper shipping name: ETHANOL

IATA

UN number: 1170 Class: 3 Packing group: II
Proper shipping name: Ethanol

15. REGULATORY INFORMATION

SARA 302 Components

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

SARA 313 Components

This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

Ethanol	CAS-No. 64-17-5	Revision Date 2007-03-01
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Pennsylvania Right To Know Components

CAS-No.	Revision Date
---------	---------------

Ethanol

64-17-5

2007-03-01

New Jersey Right To Know Components

Ethanol

CAS-No.
64-17-5

Revision Date
2007-03-01

California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

16. OTHER INFORMATION

Full text of H-Statements referred to under sections 2 and 3.

Eye Irrit.	Eye irritation
Flam. Liq.	Flammable liquids
H225	Highly flammable liquid and vapour.
H319	Causes serious eye irritation.

HMIS Rating

Health hazard:	2
Chronic Health Hazard:	*
Flammability:	3
Physical Hazard	0

NFPA Rating

Health hazard:	2
Fire Hazard:	3
Reactivity Hazard:	0

Further information

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Preparation Information

Sigma-Aldrich Corporation
Product Safety – Americas Region
1-800-521-8956

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APPENDIX D: SDS REQUEST LETTER EXAMPLE

(Company Name)
(Company Address)
(City, State zip code)

(Date)

[College Name]
Attn: (enter name of contact person)
(Address)
(City, State zip code)

Dear Sir:

The Occupational Safety and Health Administration (OSHA) Hazard Communication Standard (29 CFR 1920.1200) as enforced by PESH (Public Employee Safety and Health Division) of New York State Department of Labor) 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.

(Insert college name), 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).

Sincerely,

(Sign name)

(Enter name of contact person)

APPENDIX F: 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

PESH – Public Employee Safety and Health Division

TLV – Threshold Limit Value

APPENDIX F: 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.