**Standard Operating Procedure for Hazardous Chemicals Use**

**Chemical name: Acetylene**

**Synonyms: Ethyne; Ethine; Welding Gas**

**CAS Number: 74-86-2**

**Principal Investigator(s)       PI e-mail**

For chemical processes, return completed form sections 1-8 and Appendix to the Chemical Safety Committee (CSC) / US&A (sop-approval@uwm.edu)

If this is for IACUC Hazardous Chemical procedure, return completed sections 1-9 and Appendix to the Animal Care program (acp@uwm.edu)

**Information on Chemical Purchasing Procedures are located on our website:** [**University Safety and Assurances Chemical Purchasing Procedure**](https://uwm.edu/safety-health/chemical-purchasing-process/)

1. **Submit a copy of the Safety Data Sheet(s) [SDS] with this form.**

**The SDS is stored in the room at this location:**

1. **Chemical Concentration (as purchased)** **and Health and Physical Hazards:**

|  |  |
| --- | --- |
| **Concentration. As purchased** |       |
| **List all health and Physical Hazards** | **Found on the SDS section 2**Extremely flammable gas; may form explosive mixtures with air; may explode if heated; may displace oxygen and cause rapid suffocation. |
| **Known Incompatibilities** | Oxidizers |
| **Hazardous Decomposition Products** | Decomposition products may include the following materials:carbon dioxidecarbon monoxide |

1. **Authorized Use:**

|  |
| --- |
| [ ]  Principal Investigator [ ]  Laboratory Manager[ ]  Post Doc [ ]  Employees[ ]  Graduate Students [ ]  Technical Staff[ ]  Undergraduate Student [ ]  Adult Volunteer **[ ]** Other      |

1. **Storage Information:**

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| **Chemical Storage Location** | Where will the chemical be used (building and room number) | **Storage** **Requirement** |
|      [ ]  Area inspected regularly by       |       | [ ]  Refrigerator [ ]  Explosion Proof [ ]  Non-Explosion Proof[x] Flammable storage[ ] Corrosive storage[ ]  Shelf[ ]  Locked cabinet[ ]  Secondary containment [ ]  Closed, & labeled container [x] Other Store in a segregated and approved area.Store away from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (see Section 10). Eliminate all ignition sources. Cylinders should be stored upright, with valve protection cap in place, and firmly secured to prevent falling or being knocked over. Cylinder temperatures should not exceed 52 °C(125 °F). Keep container tightly closed and sealed until ready for use. |

1. **Personal Protective Equipment [PPE]**

|  |  |
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| **Personal Protective Equipment Use** | **During Chemical Preparation** |
| Gloves\*Check integrity of gloves before each use. | **[x]  Type** (Specify):  |
| Safety glasses (impact)  | **[ ]**  |
| Safety goggles (splash) | **[x]**  |
| Lab Coat | **[x]**  |
| Apron | **[ ]**  |
| Dust Mask | Specify: N95 [ ]  N100 [ ]  Other      |
| Respirator | **[ ]**  |
| Hearing Protection: | **[ ]**  |
| Other: (i.e. double glove, barrier cream)  | **[ ]** Specify       |
| Describe how you will employ PPE, Engineering and Administrative controls |       |

1. **Engineering Controls**

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| --- |
| [x]  Fume Hood [ ]  Laminar Flow Hood[ ]  Biosafety Cabinet [ ]  Snorkel/ Elephant Trunk[ ]  Glove Box [ ]  Vented Gas Cabinet **[ ]** Other (includes but is not limited to; pressure relief valves, intrinsically safe hot plates. Automatic shut -offs)Close valve after each use and when empty. Use equipment rated for cylinder pressure. Do not open valve until connected to equipment prepared for use.Fusible plugs in top, bottom, or valve melt at 98°C to 107°C (208°F to 224°F). Do not discharge at pressures above 15psig (103kpa). Use a back flow preventative device in the piping. Use only equipment of compatible materials of construction.  |

1. **Chemical Spill Procedure**

**Describe the spill cleanup protocol for the maximum volume of the chemical that would be in use at any one time. Refer to the SDS or guidance from University Safety and Assurances for procedures.** [**http://uwm.edu/safety-health/emergency/**](http://uwm.edu/safety-health/emergency/)

**Check all that apply and explain below:**

|  |
| --- |
| [x]  A spill kit or cleanup materials are present in each lab. Specify special materials required for the chemical cleanup. **Spark proof tools**[x]  Personnel are trained on spill cleanup procedure of each chemical and emergency contacts. [x]  Proper personal protective equipment (PPE) available for spill cleanup. See #5 for PPE.[x]  Emergency eyewash and/or safety shower located nearby (within 10 seconds) and unobstructed. [x]  Personnel trained on eyewash/ shower location and operation[x]  Eyewash/ shower inspected annually and activated weekly to verify operability. Explain spill procedure: **Small spill: immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment.** **Large Spill: Immediately contact emergency personnel. Stop leak if without risk. Use spark-proof tools and explosion-proof equipment.** **Notify others in the area of the spill, including your supervisor. Evacuate the location where the spill occurred. Call 9-911 from any campus phone or 229-9911 from a cell phone. Report any exposure. Remain on-site (at a safe distance) to provide detailed information to first responders.**  |

1. **Chemical Use Process**

**List each step of the procedure including the hazards associated with the step and controls that will be used to ensure safety. Be as specific as possible.**

**NOTE: Identify potential methods of human exposure to the chemicals during sample preparation. Also identify health hazard or routes(s) of entry into the body and explain how they affect the body.**

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| --- | --- | --- |
| **Process Step** | **Hazards** | **Safety Controls** |
| *ex.) Transfer 5 ml of hydrofluoric acid to a plastic 50 ml beaker.* | *Corrosive, splash, fluoride ion**readily penetrates skin and bonds to calcium ions* | *Lab coat, splash goggles, face**shield, nitrile gloves- initial thin glove inside gauntlet glove* |
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1. **Animal Care and Use of Chemicals**

**Fill out section 9 *only* if you have an accompanying IACUC Procedure.**

1. **IACUC Procedure**

**Protocol Title:**       **Protocol Number(s):**

1. **Describe any Special Chemical and Carcass Disposal Requirement**

**Refer to the Waste Disposal Guidelines** [**http://uwm.edu/environmental-protection/disposal-guide/**](http://uwm.edu/environmental-protection/disposal-guide/) **or contact Environmental Protection (****hazwaste@uwm.edu****) for guidance. (Check all that apply)**

|  |  |
| --- | --- |
| **Chemical Disposal** | **Hazardous Chemical** |
| **Routine scheduled hazardous waste pickup****No special disposal requirements** | **[ ]**  |
| **Neutralization** | **[ ]**  |
| **Sanitary Sewer** | **[ ]**  |
| **Other disposal: (Specify):** | **[ ]**  |
|  |  |
| **Carcass** |  |
| **Animal facility freezer and disposal service** | **[ ]**  |
| **Scheduled Hazardous waste pickup** | **[ ]**  |
| **Other disposal (Specify):** | **[ ]**  |
|  |  |
| **Excretion-contaminated Materials****(hazardous)** |  |
| **Disinfection (Specify):** | **[ ]**  |
| **Autoclave** | **[ ]**  |
| **Sanitary Sewer** | **[ ]**  |
| **Other Decontamination Method (Specify)** | **[ ]**  |

**Explain disposal methods:**

1. **IACUC Training**

**List personnel and indicate the type of training the person has received related to the use of the chemical. Also specify the date the person was trained and by whom, as well as the experience that person has with the chemical or procedure.**

|  |  |  |
| --- | --- | --- |
| **Personnel\*\*** | **Type of Training** | **Experience**(Yrs., Type work) |
|       | [ ]  **CHP and Lab Safety**. Date trained      **Conducted By**      [ ]  [Lab Specific CHP](https://uwm.edu/safety-health/chem-hygiene/)  Date trained     **Conducted By**      [ ]  **Hazardous Waste**. Date trained      **Conducted By**      [ ]  **Other(Specify)** Date trained     **Conducted By**       |        |
|       | [ ]  **CHP and Lab Safety**. Date trained      **Conducted By**      [ ]  Lab Specific CHP Date trained     **Conducted By**      [ ]  **Hazardous Waste**. Date trained      **Conducted By**      [ ]  **Other(Specify)** Date trained     **Conducted By**       |       |
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\*\*For approved IACUC procedures notify US&A to update this information when new individuals not listed above will be working with the hazardous chemicals

1. **IACUC SOP Reviewed and Approved (initialed) by:**

|  |
| --- |
| **[ ]  Animal Care Program:****[ ]  Laboratory Safety:****[ ]  Environmental Protection:**  |

**University Safety & Assurances Web Guidance for**

**Hazardous Chemical SOPs**

**Use the following links to go to web page.**

* + Laboratory Safety <http://wwwdev.uwm.edu/safety-health/lab-safety/>
	+ Biosafety <http://wwwdev.uwm.edu/safety-health/biosafety/>
	+ Carcinogens <http://wwwdev.uwm.edu/safety-health/rtk-health-hazards/>
	+ Eyewash/ Safety Shower <http://wwwdev.uwm.edu/safety-health/laboratory-equipment/>
	+ Flammable Liquid Storage <http://wwwdev.uwm.edu/safety-health/chem-safety/>
	+ Fume Hood Procedures <http://wwwdev.uwm.edu/safety-health/laboratory-equipment/#General>
	+ Hazardous Communication <http://wwwdev.uwm.edu/safety-health/chemrtk/>
		- Material Safety Data Sheets (source) <http://uwm.edu/safety-health/chemrtk/>
	+ On-Line Safety Training <http://uwm.edu/safety-health/laboratory-training/>

Including:

* + - Laboratory Safety
		- Bloodborne Pathogens
		- Hazard Communication
		- Hazardous Waste Orientation
		- Mercury Spill Clean-up Procedures
	+ Personal Protective Equipment <http://uwm.edu/safety-health/general-ppe/>
	+ Sharps Disposal <http://uwm.edu/environmental-rotection/non-hazardous-waste/#a7>

**Appendix**

**Documentation of Training**

The individuals listed below have read and fully understand this Standard Operating Procedure. The individuals have received training from their Supervisor, Group Safety Representative (GSR) or Laboratory Manager/Graduate Student and are aware of all potential hazards and countermeasures related to this Standard Operating Procedure.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Name | Signature | E-Mail | Date | Trainer Initials |
|  |  | **@uwm.edu** |  |  |
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