STANDARD OPERATING PROCEDURE: FLAMMABLE LIQUIDS

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| **CONTACT INFORMATION** | | | |
| **Location** | Building: | | Room: |
| **Street Address:** |  | | |
| **Lab Safety Contact:** | Name: | | |
| Lab Phone: | Office Phone: | |
| **Emergency Contact** | Name: | Phone: | |
| **TYPE OF STANDARD OPERATING PROCEDURE** | | | |
| Indicate which type of Standard Operating Procedure applies  Specific Process or Equipment  Specific Hazardous Chemical  Hazard Class for a Group of Chemicals | | | |
| **DESCRIBE PROCESS/EQUIPMENT, HAZARDOUS CHEMICAL or HAZARD CLASS** | | | |
| These guidelines are intended to provide general guidance on how to work safely with Flammable liquids. Flammable liquid means having a flash point of not more than 93°C. Substances and mixtures of this hazard class are assigned to one of four hazard categories based on the flash point and boiling point. Flash Point is determined by closed cup methods.  Category Criteria  1 Flash point < 23°C (73°F) and initial boiling point ≤ 35°C (95°F) examples: Diethyl Ether, Heptane  2 Flash point < 23 °C (73°F) and initial boiling point > 35°C (95°F) examples: Acetone, Ethanol  3 Flash point ≥ 23 °C (73°F) and ≤ 60 °C (140°F) examples: Xylene, Turpentine  4 Flash point > 60 °C (140°F) and ≤ 93 °C (200°F) examples: Diesel Fuel, Formaldehyde | | | |
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| **HAZARD SUMMARY** | | | |
| Flammable liquids pose a risk of burns, fire, and explosions. Some flammable liquids may produce vapors that are heavier than air and may settle in low areas and flash back on contact with an ignition source. | | | |
| **SPECIAL HANDLING AND STORAGE REQUIREMENTS** | | | |
| **Precautions:**  Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Use only with  adequate ventilation. Keep away from heat, sparks and flame. Avoid use in confined spaces.    **Storage:**  Keep container tightly closed in a cool, dry, and well-ventilated area or in a designated flammables storage cabinet. **If flammable liquids must be stored in a refrigerator or freezer it must be rated for flammable storage**. Opened containers must be carefully resealed and kept upright to prevent leakage. Protect from contact with heat, sparks, or flame. **Segregate flammable chemicals from incompatible materials (i.e. oxidizers).** **Generally, no more than 10 gallons of flammable liquids should be stored outside of a flammable cabinet. This may be less depending on the floor where flammable liquids are used and stored.** | | | |
| **ENGINEERING AND VENTILATION CONTROLS** | | | |
| Use a chemical fume hood whenever possible. Use explosion-proof, general and/or local exhaust ventilation. If hazardous atmospheres are anticipated use explosion-proof electrical wiring, equipment, and fixtures, as well as non-sparking tools. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels outside the flammability range and below recommended exposure limits. Access to emergency eyewash and safety shower is required. Take precautionary measures against static discharges (i.e. anti-static foot/wrist straps/fabrics). | | | |
| **PERSONAL PROTECTIVE EQUIPMENT** | | | |
| **PPE Requirements:**  Long pants or clothing that covers all skin below the waist  Shoes that cover the entire foot  Gloves; indicate type: Nitrile and butyl for larger amounts  Inspect gloves before use. Use proper glove removal technique to avoid skin contact with outer surface of glove. Wash hands after removing gloves.  Safety goggles  Safety glasses  Face shield  Lab coat  Flame-resistant lab coat  Other: Click here to enter text.  If the use of an N95, half mask, or full-face respirator is requested, the individual and/or their supervisor must first contact Environmental Health & Safety for a consultation to determine if respirator use is necessary. If EH&S determines the use of a respirator is necessary, the individual must participate in the University’s respirator program. This includes a medical evaluation, respirator fit test, and training. | | | |
| **EMERGENCY PROCEDURES** | | | |
| In case of fire or large and/or extremely hazardous chemical releases pull the fire alarm and evacuate the area  If someone is seriously injured or unconscious  **CALL 911 or CAMPUS POLICE AT <enter your campus PD #>**  From a safe place, provide as much information as possible to the emergency responders including chemical name, volume, hazards, injuries, and location.  **Chemical Exposure:** Flammable liquids pose a risk of burns, fire, and explosions. Some flammable liquids may produce vapors that are heavier than air and may settle in low areas and flash back on contact with an ignition source.  **Inhalation:** Remove person to fresh air and loosen tight clothing if needed. Give artificial respiration if necessary. Consult a doctor/medical service.  **Skin Contact:** Wash immediately with water (15 minutes)/shower. Remove contaminated clothing and shoes. Continue to rinse for at least 10 minutes. Get medical attention if you feel unwell.  **Eye Contact:** Rinse cautiously with water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Consult a doctor/medical service immediately.  **Ingestion:** Do not induce vomiting/Immediately consult a doctor/medical service.  **Evacuation Procedure**   * Immediately evacuate the building via the nearest exit when the fire alarm is activated. * If unable to evacuate due to a disability, shelter in the area of rescue / refuge, typically a stairwell landing, and wait for assistance from drill volunteers or emergency responders. * Instruct visitors and students to evacuate and assist them in locating the nearest exit. * Do not use elevators to exit the building during an evacuation as they may become inoperable. * Carry only those personal belongings that are within the immediate vicinity. * Close doors to limit the potential spread of smoke and fire. * Terminate all hazardous operations and power off equipment. * Close all hazardous materials containers. * Remain outside of the building until the building is released for reentry. * Do not restrict or impede the evacuation. * Convene in the designated grassy gathering area and await instruction from emergency responders or drill volunteers. Avoid parking lots. * Report fire alarm deficiencies, (e.g., trouble hearing the alarm) to facilities personnel for repair. * Notify evacuation drill volunteers or emergency responders of persons sheltering in the areas of rescue/ refuge. * **Never assume that an alarm is a “false alarm”. Treat all fire alarm activations as emergencies. Get out of the building!**   **Incident and Near Miss Reporting**: Report any incident that occurs in any University of South Florida affiliated teaching or research laboratory/studio or field research project. An incident means any unplanned event within the scope of a procedure that causes, or has the potential to cause, an injury or illness and/or damage to equipment, buildings, or the natural environment. Due to medical privacy concerns, no personal medical information of the person involved in the incident shall be entered on or submitted with the form.  <http://www.usf.edu/administrative-services/environmental-health-safety/reporting/index.aspx>  **Workers’ Compensation Procedure:** Supervisor and employee (if possible) call AmeriSys at 800-455-2079 to report a work-related injury or illness. Complete the [Consolidated Injury/Illness Reporting Form](https://www.usf.edu/administrative-services/environmental-health-safety/reporting/injury-illness-reporting.aspx), and send it to EH&S within 24 hours. | | | |
| **WASTE DISPOSAL** | | | |
| Never pour waste flammable liquids down sinks or drains.  All chemical waste generated within USF System laboratories is considered hazardous waste and must be disposed of as hazardous waste in accordance with USF Hazardous Waste Management Procedure, the EPA, and the DEP. The USF Hazardous Waste Management Procedure can be found using the following link, <https://www.usf.edu/administrative-services/environmental-health-safety/documents/hazwaste-managementprocedure.pdf> | | | |
| **TRAINING REQUIREMENTS** | | | |
| All individuals working with chemicals in USF laboratories must take EH&S’s Laboratory Safety Training. To register for Laboratory Safety Training, please use the following link, <https://www.usf.edu/administrative-services/environmental-health-safety/training/course-descriptions.aspx#labsafety>  This procedure may warrant additional safety training per the PI, EH&S, or an authorizing unit such as the Biosafety or Radiation Safety programs. Check training requirements for this activity below:  Research Specific Training from the PI/Lab Supervisor or their designee  EH&S Laboratory Safety Training  EH&S Hazard Communication  EH&S Hazardous Waste Awareness and Handling  EH&S Respirator Fit Test  EH&S Biomedical Waste  EH&S Universal Pharmaceutical Waste Training  EH&S Fire Prevention Safety  EH&S Slips, Trips, and Falls  RIC Biosafety Core Course  RIC Shipping Biohazardous Materials  RIC BSL 3  RIC Radiation Safety  RIC Laser Safety  RIC Boating Safety  RIC Scientific Diving  Other:\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | |
| **PRIOR APPROVALS** | | | |
| This activity requires prior approval from the PI/designee.  If this box is checked, working alone is not allowed. | | | |

By signing and dating here the Principal Investigator/ or a designee certifies that the Standard Operating Procedure (SOP) for ***Flammable Liquids*** is accurate and effectively provides safe standard operating procedures for employees and students in this lab who will handle this hazardous chemical.

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Signature Printed Name Date

I affirm that I have read and understand the Standard Operating Procedure for ***Flammable Liquids*** and have undergone the EH&S Laboratory & Research training and any lab specific training regarding this SOP.

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| Printed Name | Signature | Date |
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