

# SOP **Flammable or Combustible materials**

Purdue University  
Applicable rooms:

Physics Department  
All PRIME Lab areas

PRIME Lab

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## INTRODUCTION

Flammable/combustible materials are materials which under standard conditions can generate sufficient vapor to cause a fire in the presence of an ignition source. Flammable materials can generate sufficient vapors at temperatures below 100°F (38°C); combustibles, at temperatures at or above 100°F (38°C) and below 140°F (60°C). The vapors of these materials are invisible, and a vapor trail to an ignition source away from the immediate area can result in a flashback. Flammables are more hazardous at elevated temperatures due to more rapid vaporization. In addition, flammable and combustible materials react with oxidizers which can result in a fire.

## HAZARDS

Fire or explosion  
May be fatal if inhaled or ingested  
Can cause severe eye damage  
Can cause defatting of skin  
Contact with oxidizing agents may cause a fire

## PROCEDURES

- 1 Read and understand the MSDS or SDS for any chemicals to be used before starting work.
- 2 Eliminate ignition sources such as open flames, smoking materials, hot surfaces, sparks from welding or cutting, operation of electrical equipment, and static electricity.
- 3 Appropriate PPE and engineering controls must be used
- 4 Minimize the quantity kept in the work area  
Ensure that there is proper bonding and grounding when it is required, such as when transferring or
- 5 dispensing a flammable liquid from a large container or drum. Bonding and grounding must be checked regularly.
- 6 Ensure that appropriate fire control systems or extinguishers are available.
- 7 Keep dry ice ethanol mixtures from contact with open flames and as far away from flames as is practical
- 8 Follow accelerator SOP when cleaning inside accelerator tank with alcohol.

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## MINIMUM PPE REQUIREMENTS

Ethanol or acetone

- 1 safety glasses with side shields
- 2 latex or nitrile examination gloves if skin contact is likely.

ALL Others

- 1 Skin cover to throat/wrists/ankles including required lab coat
- 2 Gloves suitable for the material being used
- 3 Eye protection
  - Volume < 15 mL Safety glasses with side shields
  - Volume > 15 mL ≤ 1 L Splash goggles or safety glasses with side shields and face shield
  - Volume > 1L Safety glasses with side shields and face shield or work in hood
- 4 Work in hood with volatile flammable or combustible materials when possible

## STORAGE

- 1 Flammable and combustible materials must be stored separated from oxidizers
- 2 Store in approved flammable liquid containers (safety cans) and storage cabinets  
Flammable liquids stored in glass containers shall not exceed 1 quart. Exception: For
- 3 conditions where chemical purity must be protected, flammable liquids stored in glass containers shall not exceed 1 gallon.
- 4 Refrigerators and freezers used for the storage of flammable or combustible liquids must have no internal sources of ignition (lab-safe).

## DISPOSAL

- 1 All chemical waste must be handled as specified in chapter 7 of the CHP
- 2 All hazardous chemical waste must be placed in appropriate closed containers
- 3 Containers must be properly labeled immediately
- 4 Flammable or combustible materials may not be disposed of in the sink
- 5 REM will provide for disposal of all waste chemicals

## EMERGENCY PROCEDURES

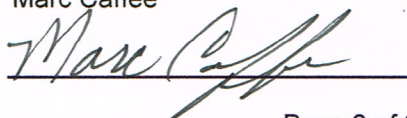
- 1 Spills should be handled as specified in chapter 8 of the CHP and the MSDS of SDS
- 2 Skin or eye contact should be handled as specified in the MSDS or SDS
- 3 For any eye injury or significant other injuries Purdue EMS should be called immediately.
- 4 All injuries must be treated as specified in section 6.7 of the CHP
- 5 Small fires may be extinguished with a fire extinguisher or other means
- 6 In case of larger fires, evacuate and call 911 or activate fire alarm as required in BEP

## APPROVAL

PI

Marc Caffee

Signature:



Date:

7/10/18