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| ISU |  |

1. STANDARD OPERATING PROCEDURE

Use this form to document the Health & Safety information associated with the procedure.

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| **Procedure Title:** | | Hot Plates | | | | | | |
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| **Dept:** |  | |  | **Bldg/Rm:** |  |  | **Supervisor:** |  |

**Procedure Overview:** (brief description of the project)

**WARNING:**

1. Use extreme caution when heating volatile materials, as the top surface and heating element can reach the flash point of many chemicals, creating a fire danger. The hot plates are not explosion proof or spark proof, and vapors can be ignited.
2. Do not use heater dial setting above three when using any metal container, sand bath, foil or other insulating material on the hot plate.

**Procedure:**

1. Place the object to be heated on the plate and turn on the dial. A setting of 3-4 can boil water, so usually the lower settings are sufficient for most work.
2. If stirring is desired, be sure to follow the precautions relevant to using magnetic stirrers.
3. Do not allow empty containers to be heated on a hot plate. This can damage the hot plate and the vessel being heated.

**CAUTIONS:**

1. Gross weight of material placed on hot plate should not exceed 75 lbs.
2. Do not use support rod mount to support hot plate or stirrer on lattice or for support of heavy loads. A hot plate may be mounted on a lattice if heating/stirring a beaker or flask, although caution should be exercised.
3. Do not remove or modify the grounded power plug.
4. Do not modify stir plate either electrically or mechanically.

**MAINTENANCE:**

Keep top surface clean. Use a non-abrasive cleaner. Alkali spills, hydrofluoric acid spills or phosphoric acid spills may damage top and lead to thermal failure. Unplug unit and remove spills promptly. Do not immerse unit for cleaning. If the top is cracked or heavily contaminated by a chemical spill, replace the unit.

**Hazard Control Measures:**

(Lab coat, eye and hand protection, and closed toe/heel shoes must be selected as required by Section D of the ISU Laboratory Safety Manual.)

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|  | **Latex gloves** |  | **Insulated gloves** |  | **Face Shield** |  | **Respirator** |
|  | **Nitrile gloves** |  | **Safety glasses** |  | **Lab Coat** |  | **Fume hood** |
|  | **Neoprene gloves** |  | **Vented goggles** |  | **Apron** |  | **Biosafety cabinet** |
|  | **Vinyl gloves** |  | **Splash goggles** |  | **Dust mask** |  | **Glove box** |
|  | **Closed Toe/Closed Heel Shoes** | | |  | **Flame Resistant Lab coat** | | |

***Other Control Measures:***

**First Aid Procedures:**

Minor burns are typically small, red, have swelling, and can blister. Cool burns with cold water and continue until the pain lessens. After cooling, cover with a dry, sterile bandage or clean dressing. Consult a physician as needed. Report all injuries to a supervisor.

**All accidents and injuries occurring at work or in the course of employment must be reported to the employee's supervisor as soon as possible (even if no medical attention is required).**

<http://www.ehs.iastate.edu/occupational/accidents-injuries>

**Using Substances Requiring Special Procedures?** No  Yes

(If Yes; identify authorized personnel, designate a use area and specify specialized safety precautions here. Refer to Section B in the ISU Laboratory Safety Manual for details.)

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| **Written By:** |  |  | **Date:** |  |
|  |  |  |  |  |
| **Approved By:** |  |  | **Date:** |  |

(PI or Lab Supervisor)

1. **HAZARD ASSESSMENT**

Use the hierarchy of controls to document the hazards and the

corresponding control measure(s) involved in each step of the procedure.

Consider *elimination or substitution* of hazards, if possible.

*Engineering Control(s):* items used to isolate the hazard from the user (i.e. fume hood, biosafety cabinet).

*Administrative Control(s):* policies/programs to limit the exposure to the hazard (i.e. authorizations, designated areas, time restrictions, training).

*Required PPE*: indicate PPE including specific material requirements if applicable (i.e. flame resistant lab coat, type of respirator or cartridge).

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| **Hazard** | **Engineering Control(s)** | **Administrative Control(s)** | **Required PPE** |
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1. **Training Record**

Use the following table to record the training associated with this Standard Operating Procedure.

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| --- | --- | --- |
| **Print Name** | **Signature** | **Date** |
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**Note: Attach to or file with written materials and methods**