**Standard Operating Procedure**

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| **Chemical name/class:** | **Nitrobenzene** | **CAS #: 98-95-3** |
| **PI:** |  | **Date:** |
| **Building:** |  | **Room #:** |

1. **Circumstances of Use:**

***This SOP must be customized for each lab using Nitrobenzene. Use this section to describe the circumstances of use, including concentration and quantity as well as identification of a designated work area.***

2. **Potential Hazards:**

 Nitrobenzene is **extremely toxic** and can cause death due to respiratory failure.

 Nitrobenzene’s lethal oral dose is very low, between 1 and 5 grams.

 Nitrobenzene is readily absorbed through the skin.

 The OSHA Ceiling limit is 2 ppm. There is also Permissible Exposure Limit of 1 ppm (5 mg/m3 -skin)

over an 8 hour day.

 Nitrobenzene can form explosive mixtures with nitric acid and oxides.

3. **Engineering Controls:**

 Nitrobenzene should be used in a glove box or in a closed system in a certified chemical fume hood.

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| 4. | **W** | **ork Practice Controls:** |
|  |  | ***It is expected that only competent persons with specific training and experience will be handling Nitrobenzene or its mixtures.*** |
|  |  | Nitrobenzene should only be used in areas free from ignition sources. Proper PPE should be worn when working with this chemical. |
|  |  | Work with this chemical should always be conducted with a fully functional and tested safety shower nearby. |

5. **Personal protective equipment (PPE):**

 PPE: Splash goggles, nitrile gloves, and full length lab coats are recommended when handing nitrobenzene. Respiratory protection is generally not practical in most situations, with reliance on engineering controls most acceptable.

* If a respirator is required, a full face respirator with organic vapor cartridges is suitable in most cases.

6. **Transportation and Storage:**

* **Group II – Volatile Toxin.**
* Keep away from heat and sources of ignition.
* Keep away from incompatibles such as oxidizers.
* Keep container tightly closed and sealed.
* Avoid nitric acid, sulfuric acid, aluminum trichloride, potassium hydroxide, sunlight, freezing, and intense heat.

7. **Waste Disposal:**

Handle and store following the guidelines above while accumulating wastes and awaiting chemical waste pickup. Chemical waste must be disposed of following UNC Charlotte’s Laboratory Chemical Waste Management practices: <https://safety.uncc.edu/services/laboratory-research-safety/hazardous-universal-waste>

8. **Exposures/Unintended contact:**

 Skin: Remove all contaminated clothing. Flush the affected area for fifteen minutes with large amounts of water. Seek medical attention.

 Eye: Remove contact lenses. Immediately flush eyes for fifteen minutes. Take victim to a physician as soon as possible.

 Inhalation: Immediately move to fresh air. Seek immediate medical attention.

 Ingestion: Keep respiratory tract clear. Do not attempt mouth to mouth recovery as contamination is likely.

 **Medical attention:** In the event of minimal skin contact, contact Student Health Center at 687-7400. For all other exposures, immediately call 911 from a campus phone, or 687-2200 (police) from a landline.

The work-related injury or illness report found at:

<https://safety.uncc.edu/services/workers-compensation>

9. **Spill Procedure:**

In the event of a small spill of nitrobenzene, remove all ignition sources from the area. Inform personnel in the immediate area of the spill and ensure they are a safe distance from the spill. Cover the spill with plastic sheet , if available, to prevent spreading. Soak up the nitrobenzene with absorbent material (vermiculite) or a spill pillow, place in a container, and label the container with the contents of the container and the words “Hazardous Waste.” DO NOT ALLOW WATER TO GET INTO THE SPILL OR THE CONTAINER. Contact EHS for disposal.

On the UNC Charlotte campus, “large” spills must be referred to the Campus Police by calling 911 from a campus phone or 704-687-2200 from any landline or cellphone.

10.  **Training of personnel:**

All personnel are required to complete the UNC Charlotte EHS Laboratory Environment Training Checklist. This checklist includes an introduction to general chemical safety as well as review of the laboratory specific safety plan. Furthermore, all personnel shall read and fully adhere to this SOP when handling the chemical.

**“I have read and understand this SOP. I agree to fully adhere to its requirements.”**

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| **Last** | **First** | **UNC Charlotte ID** | **Signature** |
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