**Standard Operating Procedure**

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| **Chemical name/class:** | **Hydrogen Peroxide (>30%)** | **CAS #:** |  | **7722-84-1** |
| **PI:** |  | **Date:** |  |  |
| **Building:** |  | **Room #:** |  |  |

1. **Lab Specific Circumstances of Use:**

***This SOP must be customized for each lab using Hydrogen Peroxide (>30%). 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:**

 Extremely hazardous substance. Oxidizer/corrosive. Not flammable but may start fire in contact with organic materials.

 For further safety information, refer to Prudent Practice’s.

[http://www.nap.edu/openbook.php?record\_id=4911&page=340](http://www.nap.edu/openbook.php?record_id=4911&amp;page=340)

 The OSHA Permissible Exposure Limit for hydrogen peroxide is 1.4 mg/m3 or 1 ppm (8 hours). The American

Conference of Governmental Industrial Hygienists recommends an 8-hour limit of 1.4 mg/m3.

3. **Engineering Controls:**

 An eyewash and safety shower must be available in the immediate work area for any work with hydrogen peroxide.

 When working with hydrogen peroxide, always work in a clean fume hood with the sash closed while reactions are in progress.

 If mists are generated either mechanically or from vapor, work must be performed in a chemical fume hood to avoid inhalation.

4. **Work Practice Controls:**

 Work should be done in a way that avoids contact with any parts of the skin.

 If any personal protective equipment comes in contact with hydrogen peroxide through a splash (or otherwise), they should be removed and changed immediately.

 Once work with hydrogen peroxide is complete, decontaminate the area by wiping it down with a soap and

water solution.

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

 Avoid skin contact, serious burns may result. Gloves made of nitrile, neoprene, PVC, supported natural rubber, and Viton can provide effective skin protection. Wear safety glasses or chemical splash goggles with face shield when using large quantities or chemical splash goggles when using small quantities. Wear rubber, neoprene or PVC apron when using large quantities and splash potential exists.

 Goggles, lab coat, closed-toed shoes, double gloves (nitrile) or chemical resistant gloves (approved for contact

with hydrogen peroxide) if there is an increased risk of glove contact.

6. **Transportation and Storage:**

Hydrogen peroxide is a strong oxidizer. Store in a cool, dark, area away from combustibles materials, organic materials, heat, strong bases, reducing agents, powdered metals, metallic salts and alkalies. Minimize quantities stored and rotate stock. Inspect periodically for bulging containers. Contamination from any source (dust, metals) may cause rapid decomposition with generation of large quantities of oxygen and high pressures. Hydrogen peroxide should not be stored directly on wooden shelves. Store in secondary containment such as plastic tub.

 **Group VI – Oxidizing Liquid**

 Transport corrosives in secondary containment, preferably a polyethylene or other non-reactive bottle carrier.

 Store below eye level.

 Avoid storing on the floor.

7. **Waste Disposal:**

Handle and store hydrogen peroxide wastes following the guidelines above while accumulating wastes and awaiting chemical waste pickup. Waste must be disposed of following your laboratory specific procedures and the requirements of UNC Charlotte’s Hazardous Waste Management Practices [http://safety.uncc.edu/laboratory-](https://safety.uncc.edu/services/laboratory-research-safety/hazardous-universal-waste)

Research-[safety/hazardous-universal-waste](http://safety.uncc.edu/laboratory-safety/hazardous-materialswaste) .

8. **Exposures/Unintended contact:**

 If skin contact occurs, immediately remove contaminated clothing and rinse with water for at least 15 minutes.

 For eye exposures, immediately rinse eyes with copious amounts of water for at least 15 minutes, while occasionally lifting upper and lower lids, then promptly seek medical attention.

 If large amounts of vapors are inhaled, move person to fresh air immediately and seek medical attention.

 If hydrogen peroxide is ingested, seek medical attention immediately.

 Call 911 from a campus phone or 704-687-2200 from any phone to request assistance if needed.

Contact the Student Health Center at 704-687-7400 for medical advice on occupational chemical exposures. For an actual chemical exposure, complete the work-related injury or illness report found at:

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

9. **Spill Procedure:**

**Small spills**: Wear protective equipment indicated above. Flood area with excess water to dilute solution. Use a broad spectrum absorbent to clean up the spill. Do not attempt cleanup if you feel unsure of your ability to do so or if you perceive the risk to be greater than normal laboratory operations. Use a large quantity of water to wash down spills and reduce the flammable vapors. Keep hydrogen peroxide out of confined space, such as a sewer, because of the possibility of an explosion.

On the UNC Charlotte campus, “large” spills of hazardous materials must be referred to the Campus Police by calling

911 from a campus phone or 704-687-2200 from any phone.

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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