Principal Investigator: _____ ***Date Approved:*** _____

Nitric Acid

Nitric acid (HNO_3, also known as aqua fortis) is a corrosive acid and strong oxidizing agent. It may be harmful if ingested, inhaled, or absorbed through the skin. It can cause severe skin and eye burns resulting in irreversible damage. It is extremely destructive to the tissue of the mucous membranes and the upper respiratory tract. If you prepare aqua regia (mixture of HNO_3 : HCl at 1:3 ratio), a separate SOP is required.

Personal Protective Equipment & Personnel Monitoring

Lab Coat	Gloves	Eye Protection/Face Shield
		
Traditional lab coat and chemical-resistant apron when working with large volumes.	Butyl viton as outer reusable gloves and disposable nitrile or chloroprene as inner gloves for full contact. Latex, nitrile, or chloroprene for incidental contact.	ANSI Z87.1-compliant safety glasses or safety goggles, or a face shield if a splash hazard is present.

Labeling & Storage

Keep containers tightly closed in a dry and well-ventilated area, away from direct sunlight. Opened containers must be carefully resealed and stored upright to prevent leakage. Always store nitric acid in secondary containment (**note**: Nalgene/polypropylene tray or a tub is the best suited secondary containment). Containers holding nitric acid need to be stored below eye level. Store nitric acid away from flammable and combustible materials. Incompatibles include reducing agents, bases, alkali metals, cyanides, powdered metals, and organic materials (including organic acids). It's advisable to further segregate nitric acid from hydrochloric acid.

Engineering Controls, Equipment, & Materials

Fume Hood

Use fume hood to keep exposure to nitric acid as low as possible. If your protocol does not permit the handling of HNO_3 in a fume hood, contact EH&S to determine whether additional respiratory protection is warranted.

Housekeeping

Spills

Treat all spills of these materials as a major spill. Notify others in the area of the spill, including your supervisor. Evacuate the location. Call 911 and alert TWU DPS (940-898-2911 in Denton; 214-689-6666 in Dallas; 832-870-6128 in Houston). Report any exposure to EH&S at 940-898-4001. Remain on-site (at a safe distance) to provide detailed information to first responders.

Decontamination

Wearing proper PPE, decontaminate equipment and bench tops using soap and water. Dispose of the used chemical and contaminated disposables as hazardous waste following the TWU EH&S guideline.

Waste

Nitric acid waste should never be combined with organics or reducing agents, The best practice is to store all nitric acid-containing waste streams in a dedicated container segregated from all other waste streams. Refer to the TWU Chemical Hygiene Plan for details.

First Aid & Emergencies

Skin or Eye Contact

Remove contaminated clothing and accessories; flush the affected area with water. If symptoms persist, seek medical attention.

Inhalation

Move affected individual(s) into fresh air. If symptoms persist, seek medical attention.

Ingestion

Rinse mouth with water. If symptoms persist, seek medical attention.

By signing and dating the log below, individuals are certifying that they have been informed and understand this Standard Operating Procedure and agree to abide by its contents.

Name	Signature	Date