**Standard Operating Procedure**

**Nitric Acid**





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| **Chemical name, CAS:** | | | **Nitric Acid (HNO3), 7697-37-2** | | | |
| **PI:** |  | | | **Date:** |  | |
| **Building:** | |  | | **Lab #:** | |  |

1. **Material Use:**

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| Nitric acid (HNO3) is a strong oxidizing acid. It is used for cleaning glassware, preserving samples, etching metals, and many more applications at Mines. |

1. **Potential Hazards:**

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| Nitric acid is corrosive and will cause serious skin and eye damage on contact. HNO3 can cause irreversible damage to the respiratory tract if inhaled. Nitric acid is oxidizing and will react violently with many chemicals including: reducing agents, bases, alkali metals, cyanides, and organic materials (including organic acids like acetic acid). Nitric acid is sometimes mixed with other chemicals to alter its properties. For example, nitric acid mixed with hydrochloric acid is called aqua regia, and HNO3 mixed with ethanol or methanol is called nital solution. |

1. **Engineering Controls:**

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| * All work must be conducted in a **laboratory hood**. * Do not store any organic materials or other incompatible chemicals near nitric acid. * Access to an eyewash and safety shower must be readily available. * Laboratory hood sash height should be kept low to minimize escaping fumes and provide protection from splashes. * The lab personnel must have easy access to a telephone (landline or cell phone). |

1. **Work Practice Controls:**

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| * Ensure that you have all the PPE required for handling nitric acid. * **Do not leave any skin exposed** when handing nitric acid. * **Never work alone**, and inform others in the immediate area when you are working with nitric acid. * **Dilute by adding nitric acid to water.** * Wash hands immediately after handling hazardous materials. Wash hands before exiting the lab. * Purchase the smallest feasible quantities of nitric acid and conduct small-scale experiments. * Always use secondary containment when pouring or transferring nitric acid. * Lab emergency contact information must be readily available. |

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

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| Lab Coat | Chemical Resistant Apron | Splash Goggles | Face Shield | Gloves  *Butyl outer gloves & Nitrile inner gloves* | Long Pants/Closed-toe Shoes |

1. **Storage:**

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| Store compounds in containers clearly labeled with contents. Keep containers in secondary containment. Keep containers tightly closed and store in a dry, cool, well ventilated location. |

1. **Waste Disposal:**

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| * Dispose of waste materials in a solid hazardous waste container. * Include contaminated wipes, gloves, or clothing in solid waste containers. Do not put in regular trash. * **Do not mix nitric acid with any other wastes. Clearly label waste.** |

1. **What to do if exposed:**

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| **If inhaled**  Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.  **In case of skin contact**  Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Get medical attention immediately. Wash clothing before reuse. Thoroughly clean shoes before reuse.  **In case of eye contact**  Immediately flush eyes with plenty of water for at least 15 minutes, lifting lower and upper eyelids occasionally. Get medical attention immediately. |

1. **Spill Procedure:**

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| Incidental (small) spill. Wearing lab coat, safety glasses and heavy nitrile gloves use a moistened wipe to clean up debris. Vacuum surface after wipe down with a HEPA filtered vacuum.  Large spill. Call x-3316 and notify EHS personnel for assistance. |

1. **Training and medical monitoring of personnel:**

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| Lab workers must complete Hazardous Waste Generator Training and Laboratory Safety Training with the EHS Department.  Each new lab worker should be oriented to the contents of this SOP and provided with lab specific safety training – such as safety expectations, where personal protective equipment is kept, how to use and store the PPE. |

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

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| **Last** | **First** | **CWID** | **Signature** | **Date** |
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