



Owner C.H.O	DOC. NO. SOP	REV. 2	DATE 12/9/2019
DOC. TITLE SOP FOR NITRIC ACID			

Environmental Health & Safety

STANDARD OPERATING PROCEDURES (SOP) FOR WORKING WITH NITRIC ACID AT AMHERST COLLEGE

Nitric acid is a commonly used hazardous chemical found in many laboratories. It is commercially used in the production of many products, such as fertilizers. In laboratories, its main uses include the nitrating, oxidizing, and acidifying of other compounds. It is a liquid that ranges from colorless to light yellow, with a strong acidic odor.

Nitric acid can pose considerable risks to humans and the environment and hence special precautions must be taken in its handling, storage, management, and disposal

Personal Protective Equipment

When working with Nitric acid, the following Personal Protective Equipment (PPE) **must** be worn:

Splash goggles

Lab coat

Long pants

Close toed shoes

Neoprene or vinyl gloves (nitrile may be used with low concentrations for a very short period of time – Less than 5 mins). Change gloves immediately upon contact

Safety Devices

Fume hood – always work with Nitric Acid in a fume hood.

Identify the location of all the safety devices in the room before beginning your procedure. Also, familiarize yourself with all the possible means of egress

Specific Health Hazards

Note that the exposure limit for this compound is very low.

Throughout an eight-hour workday, personnel shall not be exposed to more than 2ppm (2mg/L) on average (Time Weighted Average, TWA)

Personnel shall not be exposed to more than 4ppm (4mg/L) at any given time



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Pictogram:

Hazards: Corrosive, Oxidizer

Routes of Entry

Inhalation, ingestion, skin/eye contact

If any part of your body comes in contact with Nitric Acid, call the Amherst College Police Department at 413-542-2111. Also call this number if you begin to feel ill after working with or in the vicinity of this compound

Inhalation

If inhaled, move to fresh air, and get help. Call x2111 to report if you begin to feel ill.

Eye contact

Use eyewash to flush eyes with water for at least 15 minutes.

Skin Contact

Wash skin with plenty of water. Use safety shower, if needed.

Ingestion

Do not induce vomiting. Rinse with water

Storage and Special Handling

Store in a tightly closed container in a cool, dry area that is well ventilated; such as a vented cabinet. Do not store on shelf.

Store away from flammable compounds and bases

Store away from ignition sources

Label all solutions of Nitric Acid with the words: "danger", "oxidizer, corrosive"

Special Handling



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When diluting Nitric Acid, add acid to water – not water to acid

If you have Nitric Acid that you no longer need, please contact Jason Williams, x2736, for disposal

Spill clean up

Never attempt to clean up a spill if you're not comfortable doing so.

Never attempt to clean up spills of:

- High concentrations of Nitric Acid (3M or higher)– regardless of the volume
- more than 100ml – regardless of the concentration

Instead, contact the Amherst College Police Department

To clean up spills of less than 100ml and less than 3M, use the sodium bicarbonate in the spill kit to achieve a neutral pH; after the reaction stops, use a dustpan and brush to collect solid. Place sodium bicarbonate / inorganic acid mixture, along with clean-up materials in the Ziploc bag provided in the spill kit; label the bag with a properly filled out hazardous waste label and place it in a secondary container in the Satellite Accumulation Area. Do not dispose of in regular trash. Rinse the surface with water. Be sure to wear the appropriate Personal Protective Equipment while cleaning up the spill

Contact Jason Williams (x2736) or call Amherst College Police Department (x2111)

Disposal

Disposable pipets, pipet tips, other disposable devices, such as gloves, that come in contact with Nitric Acid, may be disposed of into the regular trash, provided that they are not grossly contaminated. If they are grossly contaminated, they shall be disposed of as hazardous waste in the solid hazardous waste container (provided that it is compatible with the other materials in the container)

Nitric Acid should be disposed of by itself or with other oxidizers (DO NOT ADD TO HALOGENATED OR NON-HALOGENATED WASTE CONTAINERS)

If you have Nitric Acid that you no longer need, contact the Chemical Hygiene officer

Questions

Contact Jason Williams or Environmental Health and Safety if you have any questions about this SOP or this compound.

AMHERST COLLEGE



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