Fact Sheet: Nitric Acid

What is Nitric Acid?

Nitric acid is a strong corrosive and strong oxidizer. In terms of reactivity, strong oxidizers react with some materials to produce heat and gas, which increases the flammability and ignitability of materials. Nitric acid ignites on contact with many organic chemicals and powdered metals and produces heat and gas (often flammable hydrogen) upon reaction with some other classes of chemicals. As a strong oxidizer, it can increase the flammability and ignitability of materials.

Nitric acid is highly incompatible with organics, including organic acids, flammables, combustibles, reducing agents, bases, and metals.

Nitric acid also carries serious health hazards. Nitric acid can cause severe burns to the eyes, skin, and respiratory system. Avoid touching or inhaling vapors.

Nitric acid is used as a cleaning/etching material by Hemlock Semiconductor in the manufacture of polysilicon for the semiconductor and solar industries. Once used, it is neutralized and disposed of. HSC does not use fuming nitric acid.

Effects of exposure & first aid

The effects listed below are possible effects of exposure to nitric acid. The actual effects will depend on the duration of exposure, the severity of exposure (concentration) and the particular individual (e.g., age, physical condition, etc.).

	Possible effects	What to do
Eyes	Irritation; slight to severe pain and watering; slight to severe burns.	**Hold eyes open and immediately flush with cool or lukewarm water** for 15 minutes. Seek immediate medical attention.
Skin	Slight irritation to severe burns.	**Immediately flush with cool or lukewarm water** for 15 minutes. Seek immediate medical attention.
Inhalation	Slight irritation to severe burns to the respiratory tract.	Seek fresh air and immediate medical attention. Toxic if inhaled.
Oral	Slight irritation to severe burns to the mouth and/or throat.	Seek immediate medical attention. Do not induce vomiting.

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Shelter-in-place procedures

In case of an airborne release of nitric acid, individuals should follow “shelter-in-place” procedures outlined below. Properly followed, these procedures safely protect people and animals until the hazard has passed.

- Take shelter inside the nearest building.
- Close and securely latch all doors and windows.
- Turn off all fans, air conditioners, furnaces and pilot lights.
- Put out fires in fireplaces or wood stoves. Close all dampers.
- Go to an interior room located on the ground or upper level. **Do not go to basement areas** (vapors are heavier than air). Use duct tape, plastic sheeting, or towels to seal doors and windows.
- If you are in a vehicle, safely stop the vehicle and shut off the engine. Close all doors, windows and vents and turn off the fan.
- Stay inside and wait for the “all clear”. Listen to local television or radio for further instructions.

After the “All Clear”

People who experience any irritation or other medical problems as a result of exposure should seek immediate medical attention.

People, including children, and pets can go outside. As a precaution, normal bathing with soap and water is recommended.

Building windows, dampers and vents should be opened to air out the building Heating or air conditioning systems can be safely used.

Fruits and vegetables from gardens should be washed thoroughly before eating.

Trees, shrubs and lawns near the release may eventually discolor or show other effects of exposure. Thorough rinsing of exposed surfaces with water may minimize these effects.

Rivers, streams, ponds and swimming pools should be unaffected.

More information?

Contact HSC with any questions or concerns.

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