**General Use Chemical Standard Operating Procedure (SOP)**

**Preparation and use of dilute Sodium azide (NaN3) solutions (concentration ≤ 5% or ≤ 0.8M)**

CAS: 26628-22-8

Synonyms: Sodium Trinitride, Azide, Azium, Natriumazid, Smite, Kazoe, Hydrazoic acid sodium salt

**Note 1**: **This document is intended to provide general guidance only.**

Use this generic SOP as a guide to develop a lab specific SOP for “preparation and use of dilute Sodium azide solutions (with NaN3 concentration ≤ 5% or ≤0.8M)”, concentrations typically used as a preservative.

Review the Safety Data Sheet (SDS) for more information. Contact the Principal Investigator/ Laboratory Supervisor or the WSU Chemical Hygiene Officer for questions concerning the applicability of any item listed in this SOP (OEHS: 313-577-1200).

**Note 2: This generic SOP does not provide required guidance for laboratory procedures using:**

* Pure NaN3 solid as a reagent in synthetic chemistry OR
* Solutions with a NaN3 concentration greater than 5% OR 0.8M.

# **Hazard Description**

Sodium azide (NaN3) is an odorless, white crystalline solid and is readily soluble in water [65 g/L at 20 °C (68°F)]. In laboratories, NaN3 is typically used in solutions as a preservative or as a reagent in synthetic chemistry.

| **Hazard Pictograms** | **Hazard Statements** |
| --- | --- |
| **Globally Harmonized System pictogram Indicating a chemical is an Acute Toxic, capable of causing serious adverse health effects (i.e. lethality) after a single or short-term oral, dermal, or inhalation exposure to a substance or mixture.** | Acute toxicity: Oral (Category 2), Inhalation (Category 2), Dermal (Category 1) |
| **Globally Harmonized System pictogram Indicating a chemical is an health hazard, such as a carcinogen, mutagen, reproductive toxic, target organ toxic, or aspiration toxic.** | Specific target organ toxicity - repeated exposure, Oral (Category 2), Brain |
| **Globally Harmonized System pictogram Indicating a chemical has a negative environmental impact** | Short-term (acute) aquatic hazard (Category 1), Long-term (chronic) aquatic hazard (Category 1)  |

1. Physical Hazards
* Sodium azide can form highly toxic, shock sensitive and explosive metal azides and other compounds when it contacts or dries on heavy metal surfaces (e.g. lead, copper, zinc, cadmium, nickel; spatulas or other metal lab equipment including metal plumbing) or other incompatible materials including but not limited to halogenated hydrocarbons (e.g. dichloromethane, chloroform, other halogenated aliphatic or benzylic solvents), carbon disulfide, dimethyl sulfate, bromine, acids (e.g. nitric acid) and water.
* Solid NaN3 is thermally unstable. May undergo violent decompositions at temperatures ≥ 275°C and vapors may form explosive mixtures with air, presenting an explosion hazard indoors, outdoors, and in sewers.
1. Health Hazards
* Sodium azide is more acutely toxic (oral/dermal) than sodium cyanide. Ingesting a small amount can be lethal (LD50 = 27 mg/kg for rats).
* Sodium azide can form strong complexes with hemoglobin and consequently blocks oxygen transport resulting in rapid breathing, restlessness, dizziness, weakness, headache, nausea, vomiting, rapid heart rate, convulsions, and respiratory failure.
* Direct skin contact of NaN3 may cause skin burns and blisters.
* Sodium azide reacts with acids or hydrolyzes with water to form highly toxic hydrazoic acid, a low boiling, volatile liquid. Unlike NaN3, hydrazoic acid gas (produced due to high volatility) has a sharp, pungent order and inhalation may result in serious illness (such as lung irritation, bronchitis, or lung edema).

# **Control of Hazards – General / Work Practice Controls**

* Conduct a hazard assessment to identify proper use and handling techniques specific to the procedure, fire safety, storage, and waste disposal issues specific to NaN3.
* When purchasing:
* Solid NaN3 – order the smallest quantity
* NaN3 solutions - order the lowest concentration that will meet your research needs to avoid excessive storage and the need to dilute or manipulate the stock solution(s).
* Purchase pre-mixed stock solution of NaN3 when using as a preservative agent.
* Review the Safety Data Sheet (SDS) and NaN3 emergency response procedures prior to beginning work.
* Set up a designated area for work with NaN3. Post warnings signs to areas where NaN3 is being used and stored (e.g. “DANGER: Sodium Azide in Use – Highly Toxic”). Include name and contact information of the responsible individual.
* Keep containers closed when not in use.
* Verify your experimental set-up and procedure prior to use. Conduct a dry run.
* Ensure a sink, eyewash, and safety shower are immediately available and accessible.
* DO NOT store in metal containers.
* STORE NaN3 AWAY FROM INCOMPATIBLE CHEMICALS!
* Post the lab specific SOP next to the area where NaN3 will be used, in case of emergency.
* Do not use devices made out of glass/metal such as spatulas or gripping devices when working with azides. Such items cause stronger mechanical stress to the azides than that of wood or Teflon. NEVER scratch solid azides.
* If weighing NaN3 powder inside a chemical fume hood is not feasible, tare an empty container then add the powder to the container inside the CFH then seal the container before returning to the scale to weigh the powder (Do not use a metal scoop to transfer sodium azide powder!).
* Avoid activities causing friction (e.g. grinding, scratching, strong agitation) and heat generation when working with NaN3.
* Regularly clean work areas handling NaN3 to prevent buildup of azides and inadvertent reactions with incompatible materials.
* Use secondary containers when handling and transporting NaN3 to prevent spills.
* Never work alone when working with NaN3 (solid or solutions with NaN3 > 5% or 0.8M). Work within sight and/or hearing of at least one other person who is familiar with the hazards of NaN3 and first aid / emergency response procedures.
* Warn others in the immediate area when working with NaN3.

# **Engineering/Ventilation Controls**

* Pure NaN3 powder or solutions of NaN3 with concentrations greater than 5% must be opened and handled only in a certified chemical hood.
* Diluted solutions of NaN3 (≤ 5% OR ≤ 0.8M) can be handled in certified chemical fume hood, exhausted biological safety cabinet with negative pressure ductwork, or other enclosure exhausted to outdoors.
* Sash height must be set to the lowest set point to avoid escaping dust and gasses and also to provide a physical barrier for the user.

# **Personal Protective Equipment**

In addition to proper street clothing (long pants or equivalent that cover legs and ankles, close-toed non-perforated shoes that completely cover the feet), wear the following Personal Protective Equipment (PPE) when performing lab operations/tasks:

* Eye protection - safety glasses
* Hand protection - standard nitrile laboratory gloves.
* ALWAYS double-glove.
* Immediately change to fresh gloves once gloves become contaminated. Wipe-off splashes before removing contaminated gloves, to reduce possibility of transferring contamination to skin.
* Change disposable gloves frequently during an experimental procedure.
* Dispose of used gloves as hazardous chemical waste.
* Remove gloves using a technique which avoids skin touching the exterior surface.
* Skin and body protection - Chemical protective lab coat- Fully buttoned lab coat made with cotton, polyester or a blend of the two (e.g. [Workrite™ FR/CP™ Lab Coat](https://www.fishersci.com/shop/products/fr-cp-lab-coat-men-s/p-6771070)) with sleeves extending to the wrists.
* If splashes may occur use:
* Goggles and face shield
* Chemical resistant apron and sleeves worn over lab coat [e.g. [Tyvek](file:///C%3A%5CUsers%5Csekanayaka%5CDesktop%5CWSU%20CSC%20meetings%5CCSC%20meetings%202021%5CWSU%20CSC%20September%2023rd%202021%5CSodium%20azide%20SOP%5C19-010F_FactSheet%20Azides_ADA_Final.docx) or other chemical resistant ([Tychem](https://www.thomassci.com/controlled-environment/apparel-garments/disposable-garments/aprons/_/Tychem-QC-Apron-Chemical-Resistant-26-x-52?q=Chemical%20Resistant%20Apron))].
* Respiratory protection: Avoid working outside of a chemical fume hood with solid NaN3. If work must be conducted outside of a chemical fume hood, contact OEHS (577-1200) to evaluate your operations and to determine required respiratory protection. A respiratory protection program that meets MIOSHA requirements must be followed whenever workplace conditions warrant respirator use. Visit [OEHS Respiratory Protection](https://research.wayne.edu/oehs/health-safety/respirators) webpage for more information.
* REMOVAL OF PPE: After clean-up and decontamination of the work area, remove PPE in the following order:
1. Outer gloves
2. Long sleeve acid resistant apron
3. Lab coat
4. Face shield
5. Chemical goggles
6. Inner gloves

Disposable items should be placed in a solid hazardous chemical waste container. Wash hands and forearms immediately after removing PPE.

# **Special Handling Procedures and Storage Requirements**

* Handle sodium azide powder or solutions with >5% or >0.8 M of NaN3 only in a properly functioning chemical fume hood with the sash height set to the lowest set point possible.
* Work over polyethylene secondary containers, or absorbent pads, lab bench paper to contain the NaN3 spills. This will facilitate cleanup and decontamination, and to prevent spilled materials from contacting metal surfaces.
* If using solid sodium azide to prepare the NaN3 solution:
* Weigh the NaN3 (solid) powder inside a chemical fume hood
* If the scale cannot be located inside the enclosure, use the following procedure:
* Tare the container with lid.
* Add the chemical inside the fume hood using a plastic or ceramic spatula. Do NOT use a metal spatula.
* Close the container (before moving out of the CFH).
* Weigh the container.
* Hydrazoic acid generated when preparing sodium azide solution is extremely toxic. Therefore, always prepare the NaN3 solution inside a chemical fume hood.
* If using water as the solvent, use alkaline water (pH > 9) to prevent the rapid hydrolysis of NaN3 in water, which forms toxic hydrazoic acid.
* If open containers of solutions are manipulated in a way that generates aerosols (e.g., sonicating or pressurizing), do this inside a chemical fume hood or an exhausted biological safety cabinet with negative pressure ductwork.
* All NaN3 containers, including waste, MUST be:
* clearly labeled
* kept away from heat and open flame
* used and stored in designated areas (cool, dry area) away from incompatible chemicals [e.g. benzoyl chloride + potassium hydroxide, bromine, carbon disulfide, chromyl chloride, copper, dibromalonitrile, dimethyl sulfate, lead, barium carbonate, acids (especially sulfuric and nitric), metals, metal salts, and water]
* stored in non-metal containers and on non-metal shelves.
* Dry powders must be transported in sealed shatter-resistant containers. If the container is not shatter-resistant, use a non-metal compatible secondary container (Teflon or polyethylene).
* Transport NaN3 solutions in a non-metal, compatible secondary container (Teflon or polyethylene).
1. **Decontamination Procedures**

Personal Protective Equipment:

* Upon leaving work area where NaN3 is used, remove PPE according to procedures listed above, then wash hands, forearms, face, and neck.
* Dispose all NaN3 contaminated disposable PPE as solid hazardous chemical waste. DO NOT rinse NaN3 contaminated disposable items prior to discarding as hazardous waste.
* Thoroughly wipe the NaN3 contaminated reusable PPE with absorbent material and rinse with pH adjusted water (pH > 9). Collect the rinsate and absorbent material as hazardous chemical waste. *Note: Use of alkaline water (pH > 9) will prevent the rapid hydrolysis of NaN3 in water, which forms toxic hydrazoic acid.*

Chemical fume hood interiors, bench tops, equipment, and other laboratory surfaces where NaN3 is used:

* Clean and decontaminate after each use.
* Do not use any type of vacuum for cleaning up spilled NaN3 powder. NaN3 could react with metal inside the vacuum.
* Visible NaN3 liquid or solid powder contamination should be initially wiped off. To wipe off visible NaN3 powder spills without dust generation, use paper towels that have been dampened with alkaline water (pH >9). Safely dispose NaN3 contaminated wipes as solid hazardous chemical waste. After removal of visible liquid droplets/powder, remove any residual NaN3 by thoroughly washing with copious amounts of pH adjusted water (pH > 9).

Dispose all of contaminated materials (including rinsate) as hazardous chemical waste into plastic containers (e.g. 5 gallon carboys or pails provided by OEHS).

# **Waste Disposal**

* Do not dispose of any NaN3 waste by dumping down a drain. Such disposal can result in the precipitation of insoluble explosive azides such as lead azide. Do not discard in regular trash containers.
* NaN3 waste (solutions, solid powder and other NaN3 contaminated solid waste) MUST be collected and disposed as hazardous chemical waste.
* Use plastic containers to collect waste (e.g. 5 gallon carboys or pails provided by OEHS).
* Empty containers of NaN3 should be disposed of as hazardous chemical waste.
* Request NaN3 waste be disposed of by OEHS. [Submit requests to OEHS](https://research.wayne.edu/oehs/forms/chem-waste) for waste containers, labels, and waste collection.
* Extra caution must be taken to make certain that NaN3 waste does not come in contact with acid. Acids will protonate the azide ion and form highly-toxic hydrogen azide (toxicity similar to that of hydrogen cyanide).
* Refer to the [OEHS Hazardous Waste Management web page](http://research.wayne.edu/oehs/hazardous/index.php) and [WSU Chemical Hygiene Plan](http://research.wayne.edu/oehs/pdf/chemical-hygiene-plan.pdf) for more information on waste disposal.

# **Spill Procedures**

1. **All Spills**

For any NaN3 spills (solid or liquid) which have impacted the environment (via the storm drain, soil, or air outside the building) or which cannot be cleaned up by local personnel due to size of spill, hazard level, or hazards are unknown:

* 1. Call WSU Police (313) 577-2222. Available 24 hours a day, 7 days a week.
	2. Evacuate the spill area
	3. Post someone or mark-off the hazardous area with tape and warning signs to keep other people from entering.
	4. Remain in the vicinity until emergency personnel arrive and provide them with information on the chemicals involved.

For additional information regarding spill response procedures, refer to the [OEHS chemical spill response guidelines](http://research.wayne.edu/oehs/chemical/spills), [WSU Chemical Hygiene Plan](http://research.wayne.edu/oehs/pdf/chemical-hygiene-plan.pdf) and [American Chemical Society (ACS) guide for chemical spill response](https://www.acs.org/content/acs/en/about/governance/committees/chemical-safety/publications-resources/guide-for-chemical-spill-response.html).

1. **Small Spills**

In the event of a minor spill or release that can be safely cleaned up by local personnel using readily available equipment (e.g. absorbent materials) and appropriate PPE:

1. DO NOT use metal instruments or metal containers for spill cleanup.
2. Alert personnel in the immediate area of spill and restrict access.
3. If your skin, eyes, or airways have been exposed to NaN3, medical treatment is the priority. Spill clean-up should then be left to another lab personnel familiar with safe NaN3 spill clean-up procedures or OEHS emergency response group.
4. Eliminate all sources of ignition.
	1. Increase ventilation in area of spill (turn on fume hood and open sash, open windows). Vent vapors to outside of building only.
	2. Review the SDS for the spilled material, or use your knowledge, to assess the hazards and to determine the appropriate level of protection.

**DO NOT** clean up spills requiring respiratory protection, such as spills of powder NaN3 outside of a chemical fume hood. Contact OEHS for help (313-577-1200).

* 1. Choose appropriate personal protective equipment (e.g. goggles, face shield, chemical resistant gloves, lab coat or apron).
	2. Protect floor drains, sinks or other potential avenues of environmental release as much as possible. Make a dike around the outside edges of the spill using absorbent materials.
	3. For solid spills: Cover spill with paper towels that have been dampened with alkaline water (pH >9), to minimize dust generation.
	4. For liquid spills: Cover the liquid with absorbent material (paper towel), working from the spill's outer edges toward the center.
	5. Collect spill cleanup materials using a non-metallic scoop or other suitable items and place in a tightly closed non-metallic hazardous waste container.
	6. After spilled material is removed, decontaminate surfaces with alkaline water (pH > 9).
	7. Place all contaminated materials, including contaminated items such as gloves, in the non-metallic hazardous waste container.
	8. Label waste container with completed hazardous waste tag (available from OEHS).
	9. Submit online [waste pickup request](https://research.wayne.edu/oehs/hazardous/chemical-waste.php) to OEHS.

For additional information regarding spill response procedures, refer to the [OEHS chemical spill response guidelines](http://research.wayne.edu/oehs/chemical/spills), [WSU Chemical Hygiene Plan](http://research.wayne.edu/oehs/pdf/chemical-hygiene-plan.pdf) and [American Chemical Society (ACS) guide for chemical spill response](https://www.acs.org/content/acs/en/about/governance/committees/chemical-safety/publications-resources/guide-for-chemical-spill-response.html).

# **Emergency Procedures**

With the exception of dilute solutions containing ≤ 5% NaN3, any exposure to NaN3 (solid any amount, solutions with concentration > 5%) should be treated as a serious medical concern, requiring immediate decontamination and medical treatment. See the Emergency Response section of this SOP for first aid response, which MUST be followed by an evaluation in a medical emergency room.

**\*\*If medical attention required, call WSU police (313-577-2222) immediately\*\***

* **Eyewash/Safety Showers** –Eyewash station and safety shower must be easily accessible, and available within 10 seconds travel time for emergency use when working with NaN3. Instruct personnel on the locations of eyewashes and safety showers, and how to activate them, prior to an emergency. The eyewash must be flushed on a weekly basis and documented using the [Emergency Eyewash Maintenance Log](https://www.google.com/url?client=internal-element-cse&cx=008693872176005135416:hd9kmpeywgi&q=https://research.wayne.edu/oehs/docs/eyewash-log-sheet.doc&sa=U&ved=2ahUKEwj-q5yxzb7tAhXQHc0KHT_1D_kQFjAAegQIABAB&usg=AOvVaw3S2C6UVaJo0jUoFeeUm5qf). Safety showers should be tested yearly by OEHS.
* **Fire Extinguishers** – An ABC dry powder extinguisher is appropriate if there is a fire involving NaN3. If unsure about the type of fire extinguisher in your laboratory, consult with OEHS and the WSU Fire Marshall.
1. **Health Threatening Emergencies**
	1. **Fire, explosion, health threatening hazardous material spill or release.**
		1. Call WSU Police (313) 577-2222.
		2. Alert people in the vicinity and activate the local alarm systems.
		3. Evacuate the area and go to your Emergency Assembly Point.
		4. Remain nearby to advise emergency responders.
		5. Once personal safety is established, call OEHS at (313) 577-1200.
	2. **Injuries and Exposures:**
2. **Call WSU Police (313-577-2222) IMMEDIATELY** **and request an ambulance for anyone exposed** **to** **solid NaN3 or solutions with ≥5% or > 0.8M of NaN3**.
3. **Individuals aiding another worker exposed to NaN3 MUST protect themselves by wearing two pair of NaN3 protective gloves (nitrile) and other safety equipment such as a lab coat and** **safety glasses.**
4. Remove the injured/exposed individual from the area, unless it is unsafe to do so because of the medical condition of the victim or the potential hazard to rescuers. Do not allow individual to remain in contact with NaN3 even if moving the person may expose the victim to addition risk.
5. Until medical assistance arrives, administer first aid as appropriate. In order to prevent cross contamination, if possible the victim should perform the following actions themselves:

**Skin contact:**

* IMMEDIATELY flush all affected areas with water for 15 minutes using the nearest sink or safety shower (depending on size and location of exposure).
* Any clothing that has to be pulled over the head should be cut off the body instead.
* REMOVE GOGGLES LAST.

**Eye contact:** Promptly flush eyes with copious amounts of water using an eyewash station for 15 minutes. If applicable, after washing hands remove contact lenses while flushing with water.

**Inhalation:** Immediately move to a source of fresh air and call WSU Police (313-577-2222). DO NOT perform mouth-to-mouth resuscitation on a victim who is not breathing, due to the risk of exposing yourself.

**Ingestion:** Do not induce vomiting. Rinse mouth with water. Never give anything by mouth to an unconscious person. Seek immediate medical aid.

1. Provide the following information to the EMS team and/or physician:
* NaN3 Safety Data Sheet (SDS) and this SOP
* If exposed to a solution, the concentration of the NaN3
* Body parts exposed, time of exposure, duration of exposure, and how it occurred.
* Summary of first aid measures given.
1. Dispose of contaminated PPE, clothing and other items as hazardous chemical waste.
2. Within 24 hours of exposure, report the exposure toyour PI or manager and complete and submit a WSU [Report of Injury](https://risk.wayne.edu/files/rofi.pdf) form to the Office of Risk Management.
3. **Non-Health-Threatening Emergencies**

For injuries and exposures that are not considered serious or a medical emergency, visit:

Henry Ford Occupational Health – Harbortown

3300 East Jefferson, Suite 100

Detroit MI 48207

(313) 656-1618

Monday – Friday 8:00 AM to 6:30 PM

If Henry Ford Occupational Health Center is closed or for serious injuries, visit:

Henry Ford Hospital – Emergency Room

2799 W. Grand Blvd.

Detroit MI 48202

(313) 916-8742

OR

Detroit Receiving Hospital - Emergency Room (Preferred for NaN3 exposure)

4201 St. Antoine St, Detroit, MI 48201

Phone: (313) 745-3000

#  **Minimum Training Requirements**

1. **General Training:**
* Online through the [Collaborative Institutional Training Initiative (CITI)](https://about.citiprogram.org/en/homepage/).
	+ Laboratory Safety Training (general lab & chemical safety issues) and Hazard Communication
* [Fire Safety](https://risk.wayne.edu/fire-safety).
1. **Laboratory Specific Safety Training:**
* [Laboratory-Specific Safety Training](https://research.wayne.edu/oehs/docs/lab-safety-training-checklist.doc) checklist
* Review of SDS for chemicals involved in process/experiment.
* Review of this SOP.
* Review [WSU Hazardous Waste Management](https://research.wayne.edu/oehs/hazardous/chemical-waste) guidelines.
* Other: \_\_\_\_\_\_\_\_\_

# **References**

1. National Research Council. (2011). Working with Chemicals. In Prudent Practices in the Laboratory (p. 136). Washington, D.C.: The National Academies Press.
2. [Facts About Sodium Azide](https://emergency.cdc.gov/agent/sodiumazide/basics/facts.asp). Centers for Disease Control and Prevention (CDC).
3. [Sodium Azide: Systemic Agent](https://www.cdc.gov/niosh/ershdb/emergencyresponsecard_29750027.html). The National Institute for Occupational Safety and Health (NIOSH).
4. [Lab safety guidelines Sodium Azide](https://www.ehs.harvard.edu/sites/default/files/lab_safety_guideline_sodium_azide.pd) – Environmental Health and Services: Harvard University
5. [Sodium Azide- University of Illinois](https://drs.illinois.edu/Page/SafetyLibrary/SodiumAzid)
6. Sodium Azide SOP - Duke Safety

# **Appendix 01**

**Do’s and Don’ts:**

**Preparation and use of dilute Sodium azide (NaN3) solutions (concentration ≤ 5% or ≤ 0.8M)**

| **Do’s** | Don’ts |
| --- | --- |
| Conduct a hazard assessment to identify proper use and handling techniques specific to the experimental procedure. Review the Safety Data Sheet (SDS) and NaN3 emergency response procedures prior to beginning work. | Do not store in metal containers and on metal shelves. |
| Purchase the smallest quantity (solids) or the lowest concentration (solution) to avoid excessive storage and the need to dilute or manipulate the stock solution(s). Purchasing pre-prepared dilute solutions (≤5%, approximately ≤0.8M) is preferred. | Do not store with incompatible chemicals including but not limited to heavy metals (e.g. lead, copper, zinc, cadmium, nickel) and their salts, halogenated hydrocarbons (e.g. dichloromethane, chloroform, other halogenated aliphatic or benzylic solvents), carbon disulfide, dimethyl sulfate, bromine, acids (e.g. nitric acid) and water. |
| Set up a designated area for work with NaN3. Post warnings signs to areas where NaN3 is being used and stored (e.g. “DANGER: Sodium Azide in Use – Highly Toxic”). Include name and contact information of the responsible individual. | Do not use devices such as glass or metal spatulas or metal gripping devices (metal/glass can cause stronger mechanical stress (friction) than that of wood or Teflon). |
| Verify your experimental set-up and procedure prior to use. Conduct a dry run. | Do not use a metal scoop to transfer sodium azide powder. |
| Keep containers closed when not in use. Use bench paper to limit the potential for contamination of work surfaces in the event of a minor spill. Or place a non-metal secondary container on top of the work surface to contain spills. | Do not perform activities causing friction (e.g. grinding, scratching, strong agitation) and heat generation when working with NaN3. |
| Work within sight and/or hearing of at least one other person who is familiar with the hazards of NaN3 and first aid / emergency response procedures. Warn others in the immediate area when working with NaN3. | Do not work alone when working with NaN3 (solid or solutions with NaN3 > 5%). |
| Ensure a sink, eyewash, and safety shower are immediately available and accessible | Do not pour solutions of sodium azide (any concentration) down the drain. |
| Weigh NaN3 powder inside a chemical fume hood. If not feasible, tare an empty container then add the powder to the container inside the CFH then seal the container before returning to the scale to weigh the powder. | Do not dry sweep spilled NaN3 powder or solution. |
| Regularly clean work areas handling NaN3 to prevent buildup of azides and inadvertent reactions with incompatible materials. Use wet paper towels to prevent solid NaN3 from dispersing into the air. |  |
| Use alkaline water (pH > 9) to prevent the rapid hydrolysis of NaN3 in water, which forms toxic hydrazoic acid. |  |