Standard Operating Procedure: Sodium Azide

No SOP is required if a lab has ONLY pre-made kits where sodium azide is present as a preservative at 1% concentration or less

Laboratory Information

Department:	
Principal Investigator(s):	
Laboratory Manager/Supervisor (or designated laboratory-specific chemical hygiene officer):	
Laboratory **emergency contact** (name and phone):	
Laboratory phone:	
Designated area (s) of these procedures with chemicals(s): (building and room):	
Agent storage location (building and room) and specifics regarding location/container/cabinets:	

Chemical Information

Chemical Name(s), including CAS No: 	Sodium azide CAS 26628-22-8

GHS Classification and Hazard Statements (see SDS sheet provided by the chemical's manufacturer):

Example: *Ethanol: H225: Highly Flammable liquid and vapor [Danger Flammable liquids]; H319: Causes serious eye irritation [Warning Serious eye damage/eye irritation]*

ACGIH ceiling limit = 0.29 mg/m3

On contact with water or acid, sodium azide reacts to form a toxic gas (hydrazoic acid) with a pungent odor. However, the odor may not be strong enough to give sufficient warning.

When heated to its decomposition temperature of ~275°C, sodium azide may undergo violent decomposition.

H300+H310: Fatal if swallowed or in contact with skin [Danger Acute toxicity, oral; acute toxicity, dermal]

H373: May causes damage to organs through prolonged or repeated exposure [Warning Specific target organ toxicity, repeated exposure]

H400: Very toxic to aquatic life [Warning Hazardous to the aquatic environment, acute hazard]

H410: Very toxic to aquatic life with long lasting effects [Warning Hazardous to the aquatic environment, long-term hazard]

Signs and symptoms of exposure or release	Inhalation:Cough. Headache. Nasal congestion. Fall in blood pressure. Shortness of breath. Eye Exposure: Redness. Pain. Ingestion Exposure: Abdominal pain. Nausea. Sweating. Fall in blood pressure. Increased heart rate. Weakness. Blurred vision. Shock or collapse. Skin: Irritation
Routes of exposure	Inhalation, skin absorption, ingestion, skin and/or eye contact
Required engineering controls: (i.e., chemical fume hood, biological safety cabinet, glove box, temperature control, humidity control, shielding, luer-lock syringe, in-line HEPA filter,etc.)	If hydrazoic acid or aerosols may be produced, sodium azide (and sodium azide solutions) must be handled in a chemical fume hood, exhausted biological safety cabinet with negative pressure ductwork, or other exhausted enclosure. Aerosols may be produced during any open handling of dry powder, and during open or pressurized manipulations of solutions.
Personal Protective Equipment (PPE) required for procedures:	Fully buttoned lab coat with sleeves extending to the wrists Doubled nitrile gloves Safety glasses. If splashes may occur, wear goggles and a face shield. In cases where the arms or torso may be exposed to liquid suspensions or dry particles, wear Tyvek sleeves and/or gowns (or other air-tight non-woven textile).
Known incompatibilities with chemical(s):	Acids, heavy metals and their salts (Sodium azide reacts with heavy metals and their salts to form heavy metal azides, which are shock-sensitive explosives), nitric acid, bromine, carbon disulfide, dimethylsulfate, benzoyl chloride+potassium hydroxide, dibromalonitrile, barium carbonate
Special storage and handling considerations:	Do not use a HEPA vacuum for cleaning up sodium azide – sodium azide could react with metal inside the vacuum. Keep containers closed as much as possible. Once work with sodium azide is complete, wipe down the work area with a soap and water solution. Avoid storing on metal shelving or using metal utensils (e.g., spatula) when handling.
Please list the approximate amount(s) of chemical(s) utilized in all procedures	

Please describe in the field to the right, in a stepwise fashion, the work practices and procedures involved in the handling and utilization of this agent. **Please be clear and complete in the description of procedures (i.e., measuring, weighing, pouring, mixing, injection, mixing, transporting, administration to animals, heating, etc.).** **Be sure to include any precautionary safety steps undertaken during these procedures.** **Please submit additional pages, if necessary.** **• Set up a designated area for work with sodium azide and suspensions** **• If weighing dry powders and the balance cannot be located in a fume hood or BSC, tare a container then add the powdered sodium azide to the container in a hood and seal the container before returning to the balance to weigh the powder. (Do not use a metal scoop to transfer sodium azide powder!)** **• Change gloves regularly (at least every two hours) and wash hands at the time of the glove change.** **• Keep containers closed as much as possible.** **• Once work with sodium azide is complete, wipe down the work area with a soap and water solution.**	

Waste collection and disposal procedures:	Waste chemicals shall be collected in a secured area. The area shall be free from evidence of spills. A Hazardous Waste label shall be affixed to the collection container and components shall be listed on the label as they are introduced into the container. **Do not date containers until the day of scheduled pickup**. Additionally, the container shall be marked with the hazard class of the chemical waste (i.e., Ignitable, Toxic, Reactive, Corrosive). When the container is no more than 2/3 full, date the container and submit a pick-up request in the UK E-trax system: https://etrax.chematix.com/Chematix/
Spill procedure: Lab Specific Notes on Spill Response: Do not use metal instruments for cleaning up spills.	**Major spills of stock solution**: Leave the area and notify others not to enter. Report the spill to the UK Environmental Quality Management Department (EQMD)at (859) 323-6280 (M-F 8am-5pm) or after hours by dialing 911 from any on-campus phone or by contacting the UK Police at (859) 257-UKPD (8573). **Minor spills of manageable amount:** If necessary, contact EQMD for guidance. Consult manufacturer's SDS for instructions and compatibilities for your chemical (Be aware of any materials such as paper towels or water that could be incompatible with your spilled chemical!
Response procedures in the case of an incident or injury:	UK Employees: • After receiving first aid (refer to the chemical's SDS), report the occupational exposure to a hazardous chemical to UK Worker's Care at 1-800-440-6285. • If needed, an appointment will be made for the employee at UK UHS. • For severe emergency or injury, call 911 or proceed to the UK Chandler Hospital Emergency Department UK Students: • Call UHS at (859) 323-APPT to report an occupational exposure to a chemical hazard. • If needed, an appointment will be made for the employee at UK UHS. **For severe emergency or injury, call 911 or proceed to the UK Chandler Hospital Emergency Department** Additional Lab-Specific Emergency Procedures:

A copy of the manufacturer's SDS for this agent and the PI approved SOP shall be kept in the lab's Chemical Hygiene Plan (CHP). The CHP shall be stored in a location known to all laboratory personnel and is accessible during work hours.

Personnel Training

- Prior to conducting any work with (name of the chemical), designated personnel must be provided training specific to the hazard involved in working with the substance.
- The PI must provide his/her lab personnel with a copy of the SOP and a copy of the SDS provided by the manufacturer. Any further training materials must be documented and stored in the lab's Laboratory Safety Manual and available to internal UK or external oversight agency inspectors.
- The PI must ensure that his/her lab personnel have completed the initial and the consecutive annually required Chemical Hygiene trainings and Hazardous Waste training.

The undersigned have read and understood the content of this SOP and the SDS for:

Sodium Azide

Lab personnel performing procedures with this agent (typed name)	Date of hands-on training for this agent	Name of person who provided the agent specific training (typed name):	Signature of Lab Personnel

SOP Reviewed and Approved by:

PI: (typed name)	
PI: (signature and date)	
Lab Manager/Supervisor (typed name)	
Lab Manager/Supervisor (signature and date)	