

Lessons Learned

What Happened:

On February 12th, 2021, an individual in a research lab used a sodium hypochlorite solution to sterilize pipettes that contained trace amounts of guanidine thiocyanate. Upon contact with the solution, the guanidine thiocyanate began to foam. The individual realized that this mixture creates cyanide gas and immediately put the contents into a chemical fume hood and closed the sash.

What Went Right:

The individual immediately realized what was happening and contained the reaction in the fume hood as well as informing their supervisor and EHS.

Lessons Learned:

This incident emphasizes the importance of all lab workers knowing what common reactions can occur with the chemicals they are using. A Fact Sheet on the chemical incompatibility of sodium

hypochlorite can be found [here](#). Chemical reactions can potentially create byproducts which pose a threat to life and property. These type of issues can be prevented by:

- Storing incompatible chemical categories away from each other
- Clearly stating what chemical should not be mixed or allowed near each other in the lab's Chemical Hygiene Plan and Standard Operating Procedures
- Training all lab personnel regularly on potentially hazardous interactions that are included in the Chemical Hygiene Plan
- Immediately reporting to supervisors and EHS when potentially hazardous chemical reactions have occurred
- Training lab personnel on reporting and spill cleanup measures when these reactions occur

Creation of Cyanide Gas

*Immediate signs and symptoms of exposure to cyanide:

People exposed to a small amount of cyanide by breathing it, absorbing it through their skin, or eating foods that contain it may have some or all of the following signs and symptoms within minutes:

- Dizziness
- Headache
- Nausea and vomiting
- Rapid breathing
- Rapid heart rate
- Restlessness
- Weakness

Exposure to a large amount of cyanide by any route may cause these other health effects as well:

- Convulsions
- Loss of consciousness
- Low blood pressure
- Lung injury
- Respiratory failure leading to death
- Slow heart rate

Showing these signs and symptoms does not necessarily mean that a person has been exposed to cyanide.

How you can get more information about cyanide?

You can contact one of the following:

- Regional poison control center: 1-800-222-1222
- Centers for Disease Control and Prevention
- Public Response Hotline (CDC)
- 800-CDC-INFO
- 888-232-6348 (TTY)
- E-mail inquiries: cdcinfo@cdc.gov

*information provided by the CDC

