



Environmental Health & Safety

Owner C.H.O	DOC. NO. SOP	REV. 1	DATE Nov, 4 2019
DOC. TITLE SOP FOR CYANIDE SALTS			

STANDARD OPERATING PROCEDURES (SOP) FOR WORKING WITH CYANIDE SALTS AT AMHERST COLLEGE

General Information

Cyanide Salts are white crystalline compounds that are often used in the laboratory as a reactant in organic synthesis as a respiratory inhibitor in the electron transport chain, and in electroplating. They are also commonly used in the gold mining and jewelry making industries.

Cyanide Salts are acutely toxic compounds that pose considerably hazards to humans and the environment. While the dry salts are odorless, they emit hydrogen cyanide gas when moist, which smells like bitter almonds. This gas cannot be detected by about 50% of the population, however.

Cyanide salts that are used at Amherst College include copper cyanide, potassium cyanide, silver cyanide, and sodium cyanide.

Personal Protective Equipment

When working with Cyanide Salts, the following personal protective equipment (PPE) **must** be worn:

Splash goggles

Lab coat

Long pants

Close toed shoes

Nitrile Gloves – Double-gloving is mandatory when using these compounds. Change gloves upon contact (dispose of separately, as P-coded waste)

Safety Devices

Fume hood – always work with Cyanide Salts in a fume hood to prevent exposure by inhalation

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



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Specific Health Hazards

The permissible exposure limits (PEL) for Cyanide Salts are very low - about 5ppm (mg/m³) for most of them. Exposure to Cyanide Salts via all routes of entry (listed below) may affect the heart and cardiovascular system. An exposure could also lead to death



Pictogram:

All Cyanide Salts pose a toxic hazard; however, some of these chemicals might also be characterized by additional hazards.

Consult the SDS for more information about a specific chemical

Routes of Entry

Inhalation, skin/eye contact, ingestion

If *any part of your body* comes in contact with Cyanide Salts, call the Amherst College Emergency phone number 413-542-2111. Also call this number if you begin to feel ill after working with or in the vicinity of Cyanide Salts

Inhalation

If inhaled, move to fresh air, and get help. if you begin to feel ill during / after working with Cyanide Salts, Call the Amherst College Police Department (ACDP) at x2111 to report it

Eye contact

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

Skin Contact

Wash skin with plenty of water for 15 minutes. Use safety shower, if needed.

If in contact with clothes or shoes, remove contaminated clothing – **(do not leave the room with contaminated clothing)**; contact Chemical Hygiene Officer or your department safety personnel

Ingestion

Rinse mouth with plenty of water



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Storage and Special Handling

Cyanide Salts must be stored locked up

Store in a tightly closed container in a cool, dry area that is well ventilated, such as a chemical cabinet

Store in original container inside of a secondary container with a lid

Label containers with the words: "Danger" and "Acutely Toxic"

Do not store on shelf

Do not store in aluminum containers

Store away from: acids, moisture, oxidizers,

If you have Cyanide Salts that you no longer need, please contact Jason Williams, x2736, for disposal

Special Handling

Thoroughly wash hands with soap and water before leaving the lab

Do not handle cell phones or other devices while working with this product

Do not touch skin while/after using this product unless hands have been thoroughly washed

Limit the touching of surfaces, clothing, body, personal items, door handles, lab materials while using this product

Spill clean up

Please do not attempt to clean up a Cyanide Salts spill (regardless of volume or concentration) as these are acutely hazardous compounds

Contact Jason Williams (x2736) or call the emergency phone number, x2111 to report any spills of these compounds

Alert everyone in the area

Leave the room

Close the door behind you

Call Jason Williams (Chemical Hygiene Officer) or The Amherst College emergency number (x2111) to report it.



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Disposal

Gloves, disposable pipets, pipet tips, Kim wipes, and other disposable materials that come in contact with Cyanide Salts must be disposed of separate from other waste (as P-coded Waste)

Cyanide Salts should be disposed of by themselves unless they are already mixed with other liquid chemicals

All dry waste of these compounds must be disposed of in a container **that has a liner.**

If you have Cyanide Salts that you no longer need or if you have questions about waste disposal, 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.