**A Student Safety Guide for Completing “Antibacterial Reactivity of Ag(I) Cyanoximate Complexes”**

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**Description**

This safety protocol is designed to be used in conjunction with the Student Handout created by Kari Young on the Antibacterial Reactivity of Ag(I) Cyanoximate Complexes. <https://www.ionicviper.org/lab-experiment/antibacterial-reactivity-agi-cyanoximate-complexes>

**Learning Objectives:**

Students will know how to safely work with toxic chemicals.

Students will know how to properly dispose of toxic chemicals properly.

Students will know how to work safely with a level 1 biohazard.

Students will know how to properly dispose of materials that have contacted a level 1 biohazard.

**Safety Considerations:**

Cyanoacetamide is an acute oral toxin and an eye and skin irritant. Ethyl cyanoacetate is an eye irritant and an aquatic toxin. Sodium nitrite is an acute oral toxin, eye irritant, carcinogen, and oxidizing solid. Acetic acid and diethyl ether are flammable; keep away from all heat and flame sources. Dimethylformamide (DMF) is a flammable liquid, a carcinogen, and a reproductive toxin. All open solvents should be used in the fume hood. Acetic acid and hydrochloric acid are corrosive which can lead to skin and eye damage. Potassium carbonate causes skin, eye, and respiratory tract irritation. Silver nitrate is an oxidizer and aquatic toxin. It can cause severe skin burns and eye damage. Goggles with full seal around face and nitrile gloves must be worn while handling these chemicals. Gloves should be disposed of in solid hazardous waste after use. Any excess solid and solutions (reaction and first rinse) must be disposed of in the hazardous organic waste.

The hood including flame to maintain a sterile working environment should not contain any flammable solvents. Non-pathogenic *E. coli* is a level 1 biohazard. Your instructor will collect the cotton swabs and used Petri dishes to autoclave before disposal. Tweezers or forceps will be flame sterilized after use. Wash the bench area where you were working with 70% isopropanol. Wash hands with soap and water after working with the bacteria.

**Implementation Notes**

This safety text was combined with Kari Young’s Ag(I) Cyanoximate Complexes procedure to create a lab handout. Students were asked to read the safety and procedural information before lab and to copy important safety information into their notebooks before lab began.

**Related Activities**

<https://www.ionicviper.org/lab-experiment/antibacterial-reactivity-agi-cyanoximate-complexes>