**Silvering of Chemis-Tree Ornaments Using Tollen’s Test**

*Tollen’s Test is a laboratory test used to detect the presence of an aldehyde or keytone functional groups by an oxidation reaction. The result of a positive test is a precipitation of silver on the inside of the reaction vessel.*



Work with a partner, and travel from station to station during this lab, one of you measuring and adding regents, the other helping to mix and carry equipment. Once you complete the entire circuit, switch roles so that the other partner has the opportunity to make an ornament.

1. At **Station 1**: Measure 2.5 mL of silver nitrate solution into a graduated cylinder. Transfer this solution to a 50 mL beaker. Take this beaker with you to Station 2.
2. At **Station 2**: Measure 2.5 mL of ammonium nitrate solution into a graduated cylinder. Transfer this solution to the 50 mL beaker containing the silver nitrate solution from step 2.
3. At **Station 3**: Obtain a tree ornament and gently remove its metal topper. Remember that the ornament that you are silvering is glass, and it needs to be treated as fragile. Measure 5.0 mL of dextrose solution into a graduated cylinder. POUR THIS SOLUTION INTO THE GLASS ORNAMENT.
4. At **Station 4**: Measure 5.0 mL of sodium hydroxide solution into a graduated cylinder.
5. Add the silver nitrate/ammonium nitrate solution from step 2 to the ornament. IMMEDIATELY pour the sodium hydroxide from step 4 into the ornament as well.
6. Cover the opening of the ornament with a square piece of Parafilm. Wrap it tightly around the neck of the ornament. Rotate the ornament to swirl the solution around to cover the entire inner surface of the bulb. Continue to swirl until the ornament’s inside is shiny silver.
7. **At Station 5**: Remove the Parafilm and empty the remaining reagent solution from the ornament into the waste bottle.
8. **At Station 6**: Add an ornament topper cap to your ornament. Decorate your ornament with Sharpies. Repeat the entire procedure for your lab partner. Happy Holidays!

Instructor Notes:

125 students=

0.5 M AgNO3 = 42.47 g/500 mL

1.5 M NH4NO3 = 60.00g/500 mL

5% dextrose = 50 g/1 L

10% NaOH = 100g/1 L