



Lighthouse Staccato™ Coated Capillary, Alto and Bass Cleaning Procedure

To clean a Staccato dispense capillary, you'll use the flushing method below with Staccato Wash and Flush kit, followed by a gentle cleaning of the piezo tip. This method involves using the Staccato syringe and cleaning solution to push liquid through the capillary and back out, then addressing any remaining residue with a Kimwipe.

Materials:

1. Staccato Wash Kit ST-WS-0 (coated capillaries)
2. Staccato Dispense Capillary

Personal Protective Equipment (PPE):

1. Gloves (Nitrile or latex)
2. Safety goggles
3. Lab coat/apron



Fragile: care must be taken to not break the glass piezo tip.

Step 1. Prepare the Capillary:

- Remove any cartridges or disconnect dampers if applicable.

Step 2. Flush with Cleaning Solution:

- Draw the cleaning solution from the 2mL vile into the syringe.
- Connect the Lure adapter to the syringe.
- Connect the Lure adapter to the threaded Staccato dispense capillary.
- Use the syringe to push a cleaning solution through the capillary into the 2mL vile.
- Push and pull the plunger to circulate the cleaning solution.
- You can also use a Kimwipe to soak up any excess liquid or debris.

3. Repeat Flushing:

- Repeat the flushing process multiple times (2-3 cycles) to ensure thorough cleaning.

4. Clean the Tip:

- Gently clean the piezo tip of the capillary with a Kimwipe.



What to Avoid for All Coatings:

- ✘ **Acetone, DMSO, Chloroform** – High risk of dissolving/swelling coatings.
 - ✘ **Strong acids/bases (HCl, NaOH)** – Can etch coatings or glass.
 - ✘ **Ultrasonication or high-pressure flushing** – May delaminate coatings.
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Validation After Cleaning:

1. **Microscopy** – Check for coating damage (cracks, peeling).
 2. **Contact Angle Test** – Compare before/after for hydrophobic/hydrophilic coatings.
 3. **Functional Test** – Dispense a test liquid to verify performance.
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Safety Precautions

1. Personal Protective Equipment (PPE)

- **Gloves** (Nitrile or latex) – IPA can dry skin; Tergitol may cause mild irritation.
- **Safety goggles** – Prevent accidental splashes to eyes.
- **Lab coat/apron** – Protect clothing from spills.

2. Ventilation

- **Use in a well-ventilated area** (e.g., fume hood or open window).

3. Fire Safety

- **Keep away from sparks/open flames** – IPA is flammable (flash point: ~12°C/53°F).
- **No smoking** near the workspace.
- Store away from heat sources.

4. Chemical Handling

- **Avoid mixing with bleach** (creates toxic chloroform).
- **Tergitol/Tween 20:**
 - Do not ingest (non-toxic but not food-safe).



5. Waste Disposal

- **Collect used solvent** in a labeled waste container (IPA is hazardous waste in some regions).
- **Do not pour down the drain** if mixed with surfactants (check local regulations).

6. Capillary Handling

- **Avoid high-pressure flushing** – Can damage coatings or glass.
- **Do not use metal wires** for unclogging (scratches coatings).

7. First Aid

- **Skin contact:** Rinse with water for 15 minutes.
- **Eye contact:** Flush with water for 15 minutes; seek medical help if irritation persists.
- **Inhalation:** Move to fresh air.

Additional Notes for Labs

- **Label all containers** with contents and hazards.
- **Store IPA in a flammable liquids cabinet.**
- **Keep surfactants sealed** (Tergitol degrades in light).

This solution is low-risk but still requires basic lab safety practices.



MSDS

MSDS (Material Safety Data Sheet)-style breakdown for the **universal coating-safe cleaning solution**:

1. Product & Composition

Component	CAS No.	Hazard Class
Deionized (DI) Water	7732-18-5	Non-hazardous
Isopropyl Alcohol (IPA, 70%)	67-63-0	Flammable Liquid (Category 2), Eye Irritant (Category 2)
Tergitol	9002-93-1	Skin Irritant (Category 2), Hazardous to Aquatic Life



2. Hazards Identification

- **Flammability:** IPA is flammable (flash point: 12°C/53°F).
 - **Health Effects:**
 - **IPA:** Vapors may cause dizziness (inhalation); dry skin (contact).
 - **Tergitol:** Mild skin/eye irritation; harmful if swallowed.
 - **Environmental:** Tergitol is toxic to aquatic organisms.
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3. First Aid Measures

- **Inhalation (IPA vapors):** Move to fresh air; seek medical help if breathing difficulties occur.
 - **Skin Contact:** Wash with soap/water for 15 minutes.
 - **Eye Contact:** Rinse with water for 15 minutes; consult physician.
 - **Ingestion:** Rinse mouth; do NOT induce vomiting—seek medical attention.
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4. Fire-Fighting Measures

- **Extinguishing Media:** Use **CO₂, dry chemical, or alcohol-resistant foam.**
 - **Do NOT use water jets** (spreads flammable liquids).
 - **Protective Equipment:** Wear self-contained breathing apparatus (SCBA) for large fires.
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5. Accidental Release Measures

- **Small Spills:** Absorb with inert material (e.g., sand, kitty litter); dispose as hazardous waste.
 - **Large Spills:** Contain with barriers; prevent entry into drains/waterways.
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6. Handling & Storage

- **Handling:** Use in well-ventilated areas; ground containers to avoid static sparks.