User Bulletin

ABI PRISM® 310 Genetic Analyzer

October 26, 1999 (updated 11/2000)

SUBJECT: Syringe Care and Maintenance

Overview

This user bulletin describes the care, use, and maintenance of the syringes used with the ABI PRISM® 310 Genetic Analyzer.

This information applies to the syringes manufactured by the Kloehn company. Following the simple care, use, and maintenance tips in this bulletin will ensure maximum syringe life and satisfactory results with normal use.

We recommend storing this user bulletin in the *ABI PRISM 310 Genetic Analyzer User's Manual* (P/N 903565).

Warranty Information

- Each syringe is manufactured to exact tolerances and is tested with deionized water.
- Warranty replacement policy states that syringes will be replaced free of charge if a problem occurs within the first 3 months (90 days) of use.
- The lifetime of each syringe varies with use and care.

In This User Bulletin

This user bulletin includes the following topics:

Applied Biosystems

Safety

Documentation User Attention Words

Five user attention words appear in the text of all Applied Biosystems user documentation. Each word implies a particular level of observation or action as follows.

Note This word is used to call attention to information.

IMPORTANT This word calls attention to information that is necessary for correct operation of the kit or instrument.

CAUTION **This word informs the user that damage to the instrument could occur if the user does not comply with the information. It also indicates a potentially hazardous situation that could result in minor or moderate injury to the user.**

! WARNING ! This word informs the user that serious physical injury or illness to the user or other persons could occur if these required precautions are not taken.

DANGER Indicates an imminently hazardous situation that, if not avoided, will result in death or serious injury.

General Warning

! WARNING ! CHEMICAL HAZARD. Some chemicals used with Applied Biosystems instruments or kits may be hazardous and can cause injury, illness, or death. Check regularly for chemical leaks and chemical spills, which represent potential safety hazards to the operator. If a leak or a spill occurs, follow clean-up instructions in the Material Safety Data Sheets (MSDSs), or in the Waste Profile in the Site Preparation and Safety Guide. Hazardous Chemical Warnings are prominently displayed on the labels of all hazardous materials. Always read the appropriate MSDSs and Waste Profiles before using the chemicals in any way.

User Safety Precautions

Always wear the appropriate protective gloves, clothing, and eyewear when handling chemicals.

Ordering MSDSs

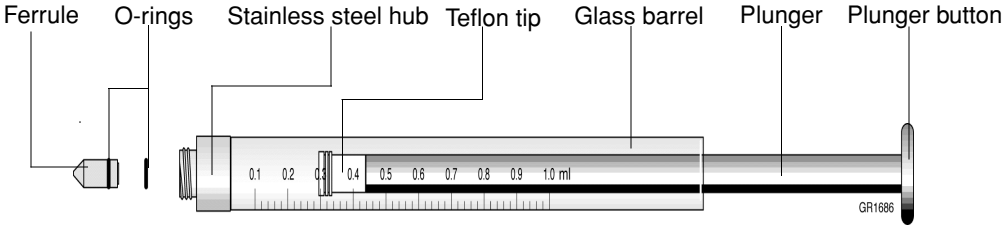
Material Safety Data Sheets (MSDSs) for hazardous chemicals manufactured by Applied Biosystems will accompany your first shipment. To receive additional copies of MSDSs at no extra cost, call Applied Biosystems at (800) 327-3002, or call your local Applied Biosystems service representative.

For chemicals required for this instrument but not manufactured or sold by Applied Biosystems, please obtain the MSDSs from their manufacturers.

Syringe Components

The Basic Components

The elements of the syringe discussed in this user bulletin are shown below.



Liquid Transfer Technique

Filling Syringes

! WARNING ! CHEMICAL HAZARD. POP-6™ polymer may be a potential mutagen. It can cause irritation to the skin, eyes, and respiratory tract. Read the MSDS in the Site Preparation and Safety Guide. Wear appropriate protective eyewear, clothing, and gloves.

To fill a syringe:

Step	Action
1	Grasp the syringe by the glass barrel and plunger button.
2	Slowly draw 1.0 mL of deionized water into the syringe, and then dispense the water completely into a waste container.
3	Slowly draw 0.15 mL of polymer into the syringe. Raise to eye level, and while holding syringe tip up, dispense completely into a lint-free lab tissue (This ensures that the deionized water does not dilute the polymer and, if done correctly, eliminates bubbles from the syringe.)
4	Fill the syringe slightly more than desired volume (for example, if you need 0.5 mL, fill to 0.7 mL).
5	Raise the syringe to eye level, and hold the syringe tip up with graduation scale outlined against a white background. Tap the glass barrel with your fingernail to raise air bubbles, and then gently push them out using the plunger.
6	Move the syringe plunger to the desired volume.
7	Blot the syringe tip with a lint-free lab tissue without drawing any liquid out of the tip.
8	Hold the syringe by the stainless steel hub, and gently screw the filled syringe into the gel block (finger-tight only). CAUTION **Do not screw syringe into the gel block by holding the glass barrel as this will break the glass barrel. Hold only the stainless steel hub.**

Cleaning the Syringe

Cleaning Syringes

Thoroughly clean syringes before loading new polymer.

To clean the syringe:

<table>
<tr><th>Step</th><th colspan="2">Action</th></tr>
<tr><td>1</td><td colspan="2">Remove the plunger by slowly drawing it from the glass barrel (count slowly to 5 — i.e., “one thousand one...one thousand two...”) while keeping the entire syringe submerged in water.

IMPORTANT Moving the dry plunger quickly can damage it, resulting in premature failure or leakage around the plunger.</td></tr>
<tr><td>2</td><td colspan="2">Remove the ferrule from the syringe.
a. Soak the ferrule in warm (not boiling) water for as long as it takes to remove crystals (if any) in the ferrule.
b. Rinse the ferrule with deionized water.</td></tr>
<tr><td>3</td><td colspan="2">Clean the glass barrel with warm water. Dissolve all crystals, if there are any.</td></tr>
<tr><td>4</td><td colspan="2">Rinse the glass barrel with distilled, deionized water.</td></tr>
<tr><td>5</td><td colspan="2">Inspect the O-ring in the stainless steel hub of the syringe for damage, and replace it if necessary.

IMPORTANT Make sure the O-ring does not block the hole in the stainless steel hub.</td></tr>
<tr><td>6</td><td colspan="2">Inspect the O-ring on the ferrule and replace it if necessary.</td></tr>
<tr><td>7</td><td colspan="2">Place the ferrule back onto the syringe.</td></tr>
<tr><td rowspan="3">8</td><td colspan="2">When the syringe is clean, do one of the following:</td></tr>
<tr><td>If…</td><td>Then…</td></tr>
<tr><td>the syring is to be used</td><td>insert the plunger into the barrel (count slowly to 5) using deionzed water as a lubricant.</td></tr>
<tr><td>the syringe is to be stored</td><td>a. dry the plunger and barrel.
b. Insert the plunger into the barrel (count slowly to 5).
c. Store as a matched set.</td></tr>
</table>

Handling and Storage

Matched Sets

Each syringe is shipped with the plunger installed in the barrel as a matched set to ensure that the syringes:

- Do not leak
- Have the proper breakaway force

Note Breakaway force is the pounds of normal force (not psi) needed to start the plunger in motion.

Interchanging plungers and barrels can result in:

- Leakage
- Shortened syringe life (breakaway force too high or too low)
- Capillaries not filled completely (breakaway force too high)

Recommendations

Keep these important facts in mind:

- Do not place O-rings on the syringe plunger. Doing so will alter the syringe breakaway force and cause improper filling of capillaries.
- Do not rapidly heat or cool an assembled syringe, as doing so will crack the glass barrel.
- Allow the polymer to reach room temperature before filling the syringe.
- Remove the plunger from the barrel slowly (count slowly to 5). Moving the dry plunger quickly in the barrel may damage the Teflon plunger and cause leakage around the plunger.
- Resting the plunger on the lab bench may change the shape of the Teflon tip.
- Do not store the syringe barrel and plunger separately.
- Do store syringes:
  - Dry
  - Away from direct sunlight
  - With the plunger in the barrel
- Do not lubricate the plunger with polymer before inserting it into the barrel. Lubricating with polymer can damage the Teflon plunger.
- Use only deionized water to lubricate the syringe.

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