# Section 1 - Seal the chip case with UV light.

The following procedure is utilized to seal the chip case using UV light-curable sealant:

1. Hold the fill port of the sealed chip case just above (or in mild contact with) the chip sealant syringe tip. Make sure the sealant hits the port's walls as you slowly fill it into the port.
2. Make a sealant dome to cover the port's top to complete the seal. Only the fill port should receive the sealant.
3. The lid window or the chip case barcode should not be sealed with sealant. To avoid the sealant hardening, place the syringe tip first inside the brown plastic bag while not in use.
4. Turn on the UV light pen in the UV pen stand by turning the cap near the power button. Until each chip is fully loaded, the UV light pen may remain on. After the last chip has been sealed, please be sure to turn off the UV light pen to prolong battery life.
5. Place the chip assembly into the UV pen stand and give the chip sealant 0.5 to 3 minutes to dry.
6. A longer exposure—no more than 3 minutes—makes sure the seal is complete. The fill port must be placed immediately beneath the UV light's beam. Avoid pressing on encapsulated chip.
7. The reactions stored inside the chip wells can be released by applying pressure to the chip lid's surface after the sealant has dried.

Note: To ensure that the chip sealant has completely cured, you can illuminate the fill port for up to three minutes if necessary.

1. Visually check the sealed chip case for any potential issues, such as leaks (make sure no liquid is dripping from the fill port or the seal between the chip and lid) and bubbles (see within the chip case for any sizable or many bubbles).
2. Correct lid orientation (check that the lid is correctly oriented on the chip; one very small air bubble is fine).

Note: If the sealed chip doesn't meet any of the previous requirements, throw it away and make a new one. It is impossible to open and reseal the sealed chip. Check the sealed chip visually for leaks and bubbles with the proper lid orientation.

1. Until you're ready to load it into the instrument, keep the prepared chip in a spot that's clean, dry, and dark.
2. 2 hours after loading the prepared chips, run them. Use a permanent marker to write on the chip's back. The imaging data won't be impacted by this.

# Section 2 Homogenization with RNA Reagent™

Several homogenization methods are detailed below:

Tissues:

Utilize a glass-Teflon® or power homogenizer to homogenize tissue samples in 1 ml of RNA Reagent™ per 50–100 mg of tissue. 10% of the volume of the RNA Reagent™ used for homogenization should not be included in the sample volume.

Cells Grown in Suspension:

Pellet cells by centrifugation. Lyse cells in RNA Reagent™ by repetitive pipetting. 5–10 X 106 animal, plant, or yeast cells, or 1 X 107 bacterial cells, should be treated with 1 L of the reagent. It is best to avoid washing cells before adding RNA Reagent™ because doing so increases the likelihood that mRNA will degrade. Some yeast and bacterial cells may require disruption, which calls for the use of a homogenizer.

Optional: For samples containing large levels of proteins, lipids, polysaccharides, or extracellular material, such as muscles, fat tissue, or tuberous plant parts, an additional isolation step may be essential. After homogenization, the homogenate should be centrifuged at 12,000 X g for 10 minutes at 2–8 °C to remove any insoluble material. Extracellular membranes, polysaccharides, and high-molecular-weight DNA are present in the resultant pellet, whereas RNA is present in the supernatant. A layer of extra fat that forms on top of samples of fat tissue needs to be removed. In each instance, transfer the homogenate solution that has been cleaned to a new tube and carry out the phase separation and chloroform addition as directed.

Phase Separation:

To allow the complete dissociation of nucleoprotein complexes, incubate the homogenized samples for 5 minutes at 15 to 30°C. Add 0.2 ml of chloroform per 1 ml of RNA reagent™. Secure the sample tubes caps. Tubes should be vigorously shaken by hand for 15 seconds before being incubated for 2 to 3 minutes at 15 to 30°C. The samples should be centrifuged at a maximum of 12,000 X g for 15 minutes at 2 to 8°C. After centrifugation, the mixture separates into an upper, colourless aqueous phase, an interphase, and a lower, red, phenol-chloroform phase. Only the aqueous phase is home to RNA. About 60% of the volume of the RNA Reagent™ used for homogenization is made up of the aqueous phase.

# Section 3 DataSeq Software workgroup shared database:

To share specific databases, repositories of DNA/RNA or protein molecules, enzymes, oligonucleotides, and gel markers with other DataSeq Software users on a network, you can construct unique databases. The shared workgroup database's primary function is to store common data.

To add users to a shared workgroup database, you must be an administrator.

You can add users to a workgroup shared database by starting the server by double-clicking **Shared Server** under C:\Programme Files\DataSeq Software Workgroup Shared Database Admin\h2\_setup, opening the login window by double-clicking the **Shared Database** **Administration** icon on your desktop and entering the following credentials: Database Admin is the administrator's username and password, and the hostname or IP is **localhost.**

To open the Shared Database Administrator window, click **Login**. then fill out the Add User window by clicking **Add**. Username should be one word. Spaces unaccepted.

Open the Workgroup Shared Database Admin application and log in as an administrator to edit users in the workgroup shared database.

Double-click the user to open the Edit User window in the Workgroup Shared Database Administrator window. Edit the user's information, and then click **OK** to save the changes.

Open the Workgroup Shared Database Admin application and log in as the administrator to delete users from the workgroup shared database. Select a user in the Workgroup Shared Database Administrator interface, click Delete, and then **OK**.

Connect to the workgroup shared database to upload data from the local database there. Select a subset by clicking Local Database in the Explorer Viewer. Right-click an object in the Records Viewer and choose "Upload to workgroup shared database."

Click Tools in the main menu, followed by **Connect to workgroup shared database**, to disconnect from a workgroup shared database. Click Disconnect in the Connect to Workgroup Shared Database window.