

SOFTWARE/PRODUCT/FINISHING/MAINTENANCE

OVERVIEW

ABS soluble support material presents several different considerations from the breakaway type supports used with some Fortus materials. One is the loading, unloading, and general handling of the material itself, and the other concerns the solution used to dissolve the support material. This document will describe the best practices to follow for both of these.

1. SR10/SR20 SOLUBLE SUPPORT MATERIAL CHANGE: FORTUS 360MC, FORTUS 400MC

1.1 Unloading a partial canister

Step 1: Unloading a partial canister (when changing to a different material): Select the canister to be removed in the user menu and press the Enter button.

Step 2: Pull the handle on the drive block lever, lift the drive mechanism up, and then release the lever to lock it in place.

Step 3: Slide the canister out of the bay – the material will snap off.

NOTE: make sure to replace the foam square in the door before removing to prevent the filament from falling back inside the canister and replace the cap over the canister outlet to seal out moisture before storing.

Step 4: After a short period of time, the material will begin to extract itself through the drive block. Let it feed out completely until the green indicator light stops flashing.

1.2 Replacing an empty canister

Step 1: Lift the drive mechanism and lock it in place as described above, and then slide the canister out so the material snaps off. This must be done quickly, because the material that is left between the canister and the drive block will begin to back itself out after approximately five seconds. Make sure that this piece of filament has fallen out and that the green indicator has stopped flashing.

Step 2: Remove the anti-rotation plug, filament exit cap, and foam cutout from the new canister (see instructions in box).

- Step 3:** Slide the canister into the empty bay and lower the drive block, making sure that the cone on the block lines up with the taper in the filament exit area.
- Step 4:** Using the thumbwheel, advance the material until you can feel it being pulled into the feed rollers and the green light starts flashing. This canister is now ready to be loaded.

2. SR10/SR20 SOLUBLE SUPPORT MATERIAL CHANGE: FORTUS 200MC

Step 1: Press the Unload button and wait for the liquefier to heat up – the material should start to feed back out of the rollers.

Step 2: When unloading the SR10/SR20 soluble support material, pull firmly on the filament but do not yank, twist, or bend it sharply, as this could cause it to break off inside the feed tube. If the material does not seem to unload from the head, there could be a “mushroom” jam preventing it from reversing through the feed rollers. In this case, inspect the head and clear any obstructions before trying to unload again.

3. CHANGING THE SR10/SR20 SOLUBLE SUPPORTS CONCENTRATE SOLUTION

In order to maintain the best possible part quality and insure efficient dissolution of support material, the water-based solution in the cleaning tank must be refreshed regularly. As more support is dissolved in the tank, the water will turn dark brown and may leave a yellowish tint on the parts, particularly with white ABS. Other indicators include shiny parts or parts that are sticking together. In addition, the longer the solution is used the longer it will take for the support to wash off. A good rule of thumb is to replace the solution after approximately 25 cubic inches (410 cc) of support material has been removed.

Always use caution when working with the SR10/SR20 soluble support concentrate or solution, as it can irritate the skin, eyes, and respiratory tract. A face shield or splash goggles and gloves are recommended when filling the tank or disposing of the used solution. Familiarize yourself with the precautions and emergency measures listed on the MSDS sheet (available from StratasyS).

A good practice to prolong the life of the solution is to manually remove as much support as possible before placing parts in the tank. Large areas of SR10/SR20 soluble support material can easily be broken out of accessible areas, and deep or blind holes can be cleaned out with a drill or scribe. This will also shorten the amount of time the parts will need to be left in the tank.

Use caution when manually removing SR10/SR20 soluble support from a part - the material can break into sharp pieces! Always wear safety glasses and gloves when performing this operation.

When the concentrate is ready to be changed, it is safe to pour down a standard drain, similar to laundry detergent. Generally, the only issue is with the pH level of the solution, and a level of around 10 is typically acceptable in most drain systems. An effective method of insuring the solution is safe to be disposed of is to check it with standard pH test paper. Inexpensive pH test strips or rolls are readily available in a range of levels. Electronic testers are also an option, although they may be rather expensive.

Different municipalities and / or companies may have specific regulations regarding waste disposal, so it is always best to check with the proper authorities to determine what is acceptable.

After using the tank, or even after a period of inactivity, you may notice that the level of solution has gone down. This is due to normal evaporation of the water, and adding more water to bring the level back up is acceptable and will not affect the dissolution process. However, do not add more concentrate powder to the tank – this will increase the pH level again and prolong the interval until the solution can be safely replaced, which could have an adverse effect on your parts!

CONTACT:

To obtain more information on this application, contact:

Stratasys Application Engineering
ApplicationSupport@Stratasys.com

Stratasys | www.stratasys.com | info@stratasys.com

7665 Commerce Way Eden Prairie, MN 55344 +1 888 480 3548 (US Toll Free) +1 952 937 3000 (Intl) +1 952 937 0070 (Fax)	2 Holtzman St. Science Park, PO Box 2496 Rehovot 76124, Israel +972 74 745-4000 +972 74 745-5000 (Fax)
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