

TECHNICAL MANUAL

# Maxprep™ Liquid Handler Method for Preprocessing of Maxwell® RSC Viral Total Nucleic Acid from Pooled Samples

Instructions for Use of Products  
AS9100, AS9101, AS9200, AS9201

Use in combination with the *Maxprep™ Liquid Handler Method for Primary Sample Pooling Technical Manual #TM655* and the *Preprocessing Methods for the Maxprep™ Liquid Handler Technical Manual #TM529*



# Maxprep™ Liquid Handler Method for Preprocessing of Maxwell® RSC Viral Total Nucleic Acid from Pooled Samples

All technical literature is available at: [www.promega.com/protocols/](http://www.promega.com/protocols/)  
 Visit the web site to verify that you are using the most current version of this Technical Manual.  
 E-mail Promega Technical Services if you have questions on use of this system: [techserv@promega.com](mailto:techserv@promega.com)

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## 1. Description

The Maxwell® RSC Viral from Pooled Samples method for the Maxprep™ Liquid Handler is designed to automate the preparation of Maxwell® deck trays for the Maxwell® RSC Viral Total Nucleic Acid Purification Kit when using samples that have been pooled using the Maxprep™ Method for Pooling from Primary Samples. The Maxprep™ Liquid Handler will perform the preprocessing of the Viral samples, add preprocessed samples to Maxwell® RSC Cartridges, transfer plungers to Maxwell® RSC Cartridges and dispense Nuclease-Free Water to elution tubes. Administrators can create variant methods in the Maxprep™ software that specify preprocessing options to meet the needs of the laboratory. The creation of variant preprocessing methods is described in the *Maxprep™ Liquid Handler Technical Manual #TM529*.

## 2. Materials to Be Supplied by the User

- Maxwell® RSC Viral Total Nucleic Acid (Cat.# AS1330)
- Maxprep™ 1000µl Conductive Disposable Tips, Filtered (Cat.# AS9303)
- Maxprep™ 300µl Conductive disposable Tips, Filtered (Cat.# AS9302)
- Maxprep™ Reagent Reservoir, 50ml (Cat.# AS9304)
- Maxprep™ 3-Position Reagent Tube Holder (Cat.# AS9409)
- Maxprep™ Plunger Holder (Cat.# AS9408)

### 3. Maxprep™ Preprocessing Protocol

#### 3.A. Maxwell® RSC Viral for Pooled Samples Method Selection and Setup

Prior to running this method, samples must be prepared by running the Maxprep™ method, Primary Sample Pooling. The Primary Sample Pooling method performs sample pooling from sample tubes to a plate based on volumes and factors as determined by the user.

1. In the Maxprep™ software, touch **Start** to access the ‘Methods’ screen. On the ‘Methods’ screen, select a method using one of the two options below:
  - a. Touch the Maxwell® RSC Viral from Pooled Samples.
  - b. Use a bar code reader to scan the 2D bar code on the kit box to filter the available methods for the Maxwell® RSC Viral Total Nucleic Acid Kit. Touch the Maxwell® RSC Viral from Pooled Samples preprocessing method or laboratory-specific variant of the Maxwell® RSC Viral from Pooled Samples preprocessing method.
2. Verify that the appropriate preprocessing method or variant method has been selected and touch the **Proceed** button. Touch the **Run** button on the method run screen to start the run.
3. Enter any method-specific variables (Sample Volume, Elution Volume) on the initial method screen.  
**Note:** The Sample Volume chosen must be the same volume as the volume of total pooled sample after running the Primary Sample Pooling method.
4. Scan or enter the unique identifier of the Sample Plate generated after running the Primary Sample Pooling method and touch **Query Portal** to pull information from the pooling run. Alternatively, touch **Exit** to manually enter sample information in columns 4–9 only.
5. Prior to placing Maxwell® deck tray(s) on the Maxprep™ Liquid Handler, prepare the deck tray(s) with cartridges and elution tubes. Change gloves before handling Maxwell® RSC Cartridges and Elution Tubes (0.5ml). Place the cartridges to be used in the deck tray(s) with well #1 (the largest well in the cartridge) facing away from the elution tubes. Press down on the cartridge to snap it into position. Carefully peel back the seal so that all plastic comes off the top of the cartridge. Ensure that all sealing tape and any residual adhesive are removed before placing cartridges in the instrument. Place an open, empty elution tube into the elution tube position for each cartridge in the deck tray(s).

**Notes:**

1. Specimen or reagent spills on any part of the deck tray should be cleaned with a detergent-water solution, followed by a bacteriocidal spray or wipe and then water. Do not use bleach on any instrument parts.
2. Use only the 0.5ml Elution Tubes provided in the kit; other tubes may be incompatible with the Maxwell® Instrument.

6. Follow instrument setup instructions displayed in the method. You will be directed by the Maxprep™ software where to place the following items on the instrument:
  - Maxprep™ Plunger Holders and Maxwell® RSC Plunger Packs (2; one may be partially full)
  - 24-position Maxwell® Front Deck Tray or 16-position Maxwell® Deck Tray containing Maxwell® RSC Cartridges with seals removed and open elution tubes
  - 24-position Maxwell® Back Deck Tray or 16-position Maxwell® Deck Tray containing Maxwell® RSC Cartridges with seals removed and open elution tubes
  - Maxprep™ 3-Position Reagent Tube Holder with up to 3 Proteinase K tubes
  - Maxprep™ Reagent Reservoir, 50ml with Lysis Buffer
  - Maxprep™ Reagent Reservoir, 50ml with Nuclease-Free Water
  - Nunc 2.0ml Deep Well Plate or Sample Plate (containing pooled samples)
  - Maxprep™ 1000µl Conductive Disposable Tips, Filtered (2; one rack may be partially full)
  - Maxprep™ 300µl Conductive Disposable Tips, Filtered (rack may be partial or full)
7. Close the instrument door and touch the **Next** button to start the automated preprocessing of samples.

### **3.B. Maxprep™ Liquid Handler Preprocessing Protocol**

The Maxprep™ Liquid Handler will prepare samples prior to extraction using a Maxwell® Instrument. The Maxprep™ Liquid Handler performs the following steps:

1. The system prepares a lysis reaction in the 2.0ml Deep Well Plate (Cat.# AS9307) consisting of the following components:
  - 20µl or 30µl of Proteinase K Solution (depending on sample volume)
  - 200µl or 300µl of Lysis Buffer (depending on sample volume)
2. The processing plate incubates for 10 minutes.
3. During the lysis incubation, plungers are transferred to each of the cartridges in the Maxwell® deck tray(s). The specified volume of Nuclease-Free Water is transferred to the elution tubes for each position in the Maxwell® deck tray(s).
4. After lysis incubation is complete, each sample is transferred from the processing plate to its corresponding Maxwell® RSC Cartridge.

When the method is complete, open the instrument door and move the deck tray(s) to the Maxwell® Instrument for extraction. Remove processing plate and used tips from the waste bin of the instrument and discard as hazardous waste following your institution's recommended guidelines. Either discard or tightly cap and store remaining reagents.

Consumables for Maxprep™ preprocessing methods are designed to be used with potentially infectious substances. Use appropriate protective equipment (e.g., gloves and safety glasses) when handling infectious substances. Adhere to your institutional guidelines for the handling and disposal of all infectious substances when used with this system.

For information on running the deck trays on a Maxwell® Instrument, see the *Maxwell® RSC Viral Total Nucleic Acid Purification Kit Technical Manual #TM420*.

#### 4. Variant Method Variables

Administrators should create laboratory-specific variants of the RSC Viral Total Nucleic Acid from Pooled Samples method for each unique Maxwell® setup they wish to create. The following sections describe the variables that can be adjusted by administrators. By default, users can modify all of these variables at run time; toggle the “User Modifiable” check box to allow or prevent user access at run time. The administrator has the ability to define the default value for the variable within the displayed minimum and maximum allowable values.

##### Maxwell

This check box defines the default deck tray that will be selected during the preprocessing method setup.

##### Sample

These variables define how a method should process samples for the preprocessing setup.

Setting	Details
Elution Volume (µl)	This variable defines the default volume that will be dispensed into the Elution Tube.
Include extended incubation for serum samples	Checking this box will increase the incubation time by 10 minutes for processing serum samples.
Sample Volume (µl)	This variable defines the default volume of sample. The volume of this step must be the same volume as the pooled sample after running the Primary Sample Pooling method. The administrator should consider creating a variant method defining the volume as determined by the laboratory’s needs.
Use elevated incubation temperature	Checking this box will increase the incubation temperature of the method. This may be required when running samples containing certain viruses. Samples containing virus such as hepatitis B virus require an elevated incubation temperature for optimal nucleic acid recovery due to viral genome secondary structure.

It is the manufacturer's responsibility to provide equipment electromagnetic compatibility information to the customer or user.

It is the user's responsibility to ensure that a compatible electromagnetic environment for the equipment can be maintained in order that the device will perform as intended.

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