TECHNICAL MANUAL

Maxwell® RSC Viral Total Nucleic Acid Purification Kit

Instructions for Use of Products
AS1330 and ASB1330

Note: To use the Maxwell® RSC Viral Total Nucleic Acid Kit, you must have the "Viral Total Nucleic Acid" method loaded on the Maxwell® Instrument.

Caution: Handle cartridges with care; seal edges may be sharp.

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TM420

Maxwell® RSC Viral Total Nucleic Acid Purification Kit

All technical literature is available at: 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

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1. Description

Viral total nucleic acid extraction is a critical step in infectious disease research. The Maxwell® RSC Viral Total Nucleic Acid Purification Kit[a,b] is used with the Maxwell® and Maxprep™ Instruments specified below to provide an easy method for efficient, automated sample preparation and purification of viral total nucleic acid. Maxwell® Instruments are designed for use with predispensed reagent cartridges and preprogrammed purification procedures, maximizing simplicity and convenience. The Maxwell® method for the RSC Viral Total Nucleic Acid Kit can process from one to the maximum sample number in approximately 30 minutes. The low elution volume of 50µl results in concentrated purified nucleic acid for downstream applications such as quantitative PCR (qPCR) or quantitative RT-PCR (qRT-PCR). After brief initial lysis, the sample is added to the Maxwell® RSC Cartridge, and the remaining processing is fully automated.

Supported Instruments

Instrument	Cat.#	Technical Manual
Maxwell® RSC	AS4500	TM411
Maxwell® RSC 48	AS8500	TM510
Maxwell® FSC	AS4600	TM462
Maxwell® CSC RUO Mode	AS6000	TM573
Maxprep™ Liquid Handler	AS9100, AS9101 AS9200, AS9201	TM509

The Maxwell® RSC Viral Total Nucleic Acid Purification Kit purifies samples using paramagnetic particles, which provide a mobile solid phase to optimize sample capture, washing and purification of nucleic acid. Maxwell® Instruments are magnetic particle-handling instruments that efficiently bind nucleic acids to the paramagnetic particle in the first well of a prefilled cartridge. The samples are processed through a series of washes before the total nucleic acid is eluted.

Prior to extraction, samples can be preprocessed manually or using the Maxprep™ Liquid Handler. The Maxprep™ Liquid Handler will prepare samples for preprocessing in tubes and can add preprocessed samples from sample tubes to Maxwell® RSC Cartridges, transfer plungers to Maxwell® RSC Cartridges and dispense elution buffer to elution tubes. Follow the instruction set specific to the preprocessing option used.

2. Product Components and Storage Conditions

PRODUCT	SIZE	CAT.#
Maxwell® RSC Viral Total Nucleic Acid Purification Kit	**48 preps**	**AS1330**

For Research Use. Each system contains sufficient reagents for 48 purifications. Includes:

- 20ml Lysis Buffer
- 2 × 1ml Proteinase K (PK) Solution
- 48 Maxwell® RSC Cartridges
- 1 Maxwell® RSC Plunger Pack (48 plungers)
- 50 Elution Tubes (0.5ml)
- 20ml Nuclease-Free Water

PRODUCT	SIZE	CAT.#
Maxwell® RSC Viral Total Nucleic Acid Multi-Pack Kit	**144 preps**	**ASB1330**

For Research Use. Each Multi-Pack contains sufficient reagents for 144 purifications. **Note:** ASB1330 is not recommended for use with the Maxprep™ Liquid Handler. Includes:

- 3 × 20ml Lysis Buffer
- 6 × 1ml Proteinase K (PK) Solution
- 144 Maxwell® RSC Cartridges
- 3 × 50/pk Maxwell® CSC/RSC Plungers
- 3 × 50 Elution Tubes (0.5ml)
- 3 × 20ml Nuclease-Free Water

Storage Conditions: Store components at room temperature (15–30°C).

Safety Information: The Maxwell® RSC Cartridges contain ethanol, isopropanol and guanidine hydrochloride. Ethanol and isopropanol should be considered flammable, harmful and irritants. Guanidine hydrochloride should be considered toxic, harmful and an irritant. Refer to the SDS for detailed safety information.

Maxwell® RSC Cartridges are designed to be used with potentially infectious substances. Wear appropriate protection (e.g., gloves and goggles) when handling infectious substances. Adhere to your institutional guidelines for the handling and disposal of all infectious substances when used with this system.

For Manual Preprocessing

PRODUCT	SIZE	CAT.#
ClickFit Microtube, 1.5ml	**1,000/pack**	**V4741**

For Preprocessing with the Maxprep™ Liquid Handler

PRODUCT	SIZE	CAT.#
Nunc 2.0ml Deep Well Plates	**60/pack**	**AS9307**
Maxprep™ 1000µl Conductive Disposable Tips, Filtered	**40/box**	**AS9303**
Maxprep™ 300µl Conductive Disposable Tips, Filtered	**60/box**	**AS9302**
Maxprep™ Reagent Reservoir, 50ml	**28/pack**	**AS9304**
Maxwell® RSC Plunger Pack	**1 each**	**AS1670**
Maxprep™ Plunger Holder	**1 each**	**AS9408**
Maxprep™ 3-Position Reagent Tube Holder	**1 each**	**AS9409**

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3. Sample Preparation

Materials to Be Supplied By the User

- tubes for plasma or serum samples

Blood-borne pathogen precautions are recommended when handling any human-derived specimens.

For plasma samples, collect blood in EDTA- or ACD-anticoagulant Vacutainer® tubes. Avoid heparin as it may inhibit downstream amplifications.

The following general recommendations are for preparing and storing plasma and serum samples (1,2):

1. Separate plasma from cells within 1 hour of drawing blood by centrifuging at 1,500 × *g* for 20 minutes at 25°C, and then transfer plasma layer into a clean tube.
2. Separate serum from clotted blood by centrifuging at 1,000 × *g* for 10 minutes at 25°C, and then decant into a clean tube.

Store plasma and serum samples at 2–8°C for up to 24 hours, or freeze samples that are not processed within 24 hours at –20°C for up to 5 days. Avoid repeated freeze-thaw cycles, and do not store samples in a frost-free freezer. Specific collection and storage conditions may vary, depending on the virus isolated.

4. Manual Preprocessing

Materials to Be Supplied by the User

- 1.5–2.0ml tubes for incubation of samples (e.g., ClickFit Microtube, 1.5ml [Cat.# V4741]; recommended to prevent the cap from opening during heating)
- 15ml or 50ml conical tube for preparation of Lysis Solution
- benchtop vortex mixer
- pipettors and pipette tips for sample transfer into prefilled reagent cartridges
- heating block or water bath set to 56°C

4.A. Preparation of Lysis Solution

If the Lysis Buffer is cloudy or contains precipitates, heat at 37–56°C until the Lysis Buffer clears.

! Prepare fresh Lysis Solution for each batch of samples as described in Table 1. We recommend preparing approximately 20% extra Lysis Solution to compensate for potential pipetting losses.

Table 1. Preparation of Lysis Solution.

For 100µl and 200µl plasma or serum samples

Reagent	Volume for One Sample	Volume for 16 Samples[1]
Lysis Buffer[2]	200µl	3,800µl
Proteinase K Solution	20µl	380µl

For 300µl plasma or serum samples

Reagent	Volume for One Sample	Volume for 16 Samples[1]
Lysis Buffer[2]	300µl	5,700µl
Proteinase K Solution	30µl	570µl

[1]The volumes listed for Lysis Buffer and Proteinase K Solution for 16 samples include approximately 20% extra volume.

[2]If an internal control is used, it may be added to the Lysis Solution. Internal controls are not provided in this kit.

4.B. Preparation of Samples for Maxwell® RSC Cartridges

Plasma or serum samples may be fresh or frozen. Thaw frozen specimens at room temperature or on ice, and mix by vortexing for 10 seconds before use.

1. Pipet each plasma or serum sample into a 1.5ml or 2ml microcentrifuge tube with a cap.
2. Add Lysis Solution prepared in Section 4.A.
   a. To 100µl or 200µl samples, add 220µl of Lysis Solution.
   b. To 300µl samples, add 330µl of Lysis Solution.
3. Close tubes, and vortex for 10 seconds.
4. For plasma samples, proceed to Step 5. For serum samples, incubate at room temperature (15–30°C) for 10 minutes, and then proceed to Step 5.
5. Incubate at 56°C in a heat block or water bath for 10 minutes. During this incubation, proceed to Section 4.C to prepare the cartridges.

   Note: Samples containing virus such as hepatitis B virus require incubation at 80°C for optimal nucleic acid recovery due to secondary structure of the viral genome.

4.C. Maxwell® RSC Viral Total Nucleic Acid Cartridge Preparation

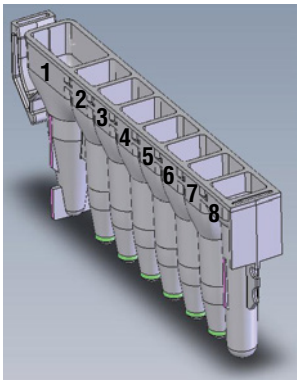
1. Change gloves before handling Maxwell® RSC Cartridges, RSC Plungers and Elution Tubes (0.5ml). Place the cartridges to be used in the deck tray(s) with well #1 (the largest well in the cartridge) facing away from the elution tubes. Press down on the cartridge to snap it into position. Carefully peel 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.
2. Place one plunger into well #8 of each cartridge.

4.C. Maxwell® RSC Viral Total Nucleic Acid Cartridge Preparation (continued)

3. Place an empty elution tube into the elution tube position for each cartridge in the deck tray(s).
4. Add 50µl of Nuclease-Free Water to the bottom of each elution tube.
5. Transfer sample lysate to well #1 (the largest well) of the cartridge.
6. Proceed to Section 6, Maxwell® Instrument Setup and Run.

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 instrument parts.
2. Use only the 0.5ml Elution Tubes provided in the kit; other tubes may be incompatible with the Maxwell® Instrument.



User Adds to Wells
1. Sample lysates
8. RSC Plunger

Figure 1. Maxwell® RSC Cartridge contents.

Figure 2. Setup and configuration of the deck tray(s). Nuclease-Free Water is added to the elution tubes as shown. Plungers are in well #8 of the cartridge.

5. Maxprep™ Preprocessing

5.A. Maxprep™ Cartridge Preparation

1. Turn on the Maxprep™ Liquid Handler and PC. Log in to the PC, and start the Maxprep™ software on the PC by double-clicking the desktop icon.
2. Touch **Start** to access the 'Methods' screen.
3. On the 'Methods' screen, select a method using one of the two options below:
   a. Touch the Viral Total Nucleic Acid preprocessing method or laboratory-specific variant of the Viral Total Nucleic Acid preprocessing method.
   b. Use a bar code reader to scan the 2D bar code on the kit box to automatically select the appropriate base method. Touch the laboratory-specific variant of the Viral Total Nucleic Acid preprocessing method if desired.
4. Verify that the appropriate preprocessing method or variant method has been selected, and touch the **Proceed** button. Close the instrument door and touch the **Run** button on the method run screen to start the run.
5. Enter any method-specific variables (Sample Number, Sample Volume, Elution Volume).
6. Prior to placing Maxwell® deck tray(s) on the instrument, prepare the deck tray(s) with cartridges and elution tubes. Change gloves before handling Maxwell® RSC Cartridges, RSC Plungers 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 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.

5.A. Maxprep™ Cartridge Preparation (continued)

7. 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 Holder with Maxwell® RSC Plunger Packs (2; one may be partially filled)
   - 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
   - 10mm diameter tube carriers with 1.5ml flip-cap or 2.0ml screw-cap tubes containing samples (all tubes within a carrier must be of the same type)
   - Nunc 2.0ml Deep Well Plate (empty)
   - 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)
8. Close the instrument door, and touch the **Next** button to start the automated preprocessing of samples.

5.B. Maxprep™ Liquid Handler Preprocessing Protocol

The Maxprep™ Liquid Handler will prepare samples prior to extraction using Maxwell® Instruments. The following steps are performed by the Maxprep™ Liquid Handler:

1. The system prepares a lysis reaction in the 2.0ml Deep Well Plate consisting of the following components:
   - specified volume of plasma or serum
   - 20 or 30µl of Proteinase K Solution (depending on sample volume)
   - 200 or 300µl of Lysis Buffer (depending on sample volume)
2. The processing plate incubates for 10 minutes.

   Note: Samples containing virus such as hepatitus B virus require an elevated incubation temperature for optimal nucleic acid recovery due to secondary structure of the viral genome. Serum samples require an initial 10 minute incubation at room temperature prior to heated lysis. An extended room temperature incubation for serum samples and/or an elevated incubation temperature can be specified by the administrator in a laboratory-specific variant method.
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.

5. Method is complete. Open instrument door and move the deck tray(s) to the Maxwell® Instrument for extraction. Remove primary sample tubes, 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 goggles) when handling infectious substances. Adhere to your institutional guidelines for the handling and disposal of all infectious substances when used with this system.

6. Maxwell® Instrument Setup and Run

For detailed information, refer to the Technical Manual specific to your Maxwell® Instrument.

Instrument	Technical Manual
Maxwell® RSC	TM411
Maxwell® RSC 48	TM510
Maxwell® FSC	TM462
Maxwell® CSC RUO Mode	TM573

1. Turn on the Maxwell® Instrument and Tablet PC. Sign in to the Tablet PC, and start the Maxwell® software by double-touching the icon on the desktop. The instrument will power up, proceed through a self test and home all moving parts.
2. Touch **Start** to begin the process of running a method.
3. Depending on your Maxwell® Instrument model, use one of the following options to select a method:
   a. When running in **Portal** mode, scan the bar codes(s) on the deck tray(s). After data has been returned from the Portal database, press **Continue** to use the sample tracking information for the deck tray(s) or press **New** to start a run and enter new sample tracking information.
   b. Scan the 2D bar code information on the kit box to automatically select the appropriate method.
   c. Touch the **Viral Total Nucleic Acid** method.
4. If applicable to your Maxwell® Instrument model, verify that the Viral Total Nucleic Acid method has been selected, and touch the **Proceed** button. If requested by the software, scan or enter any kit lot and expiration information required by the Administrator.
5. On the 'Cartridge Setup' screen (if shown), touch the cartridge positions to select/deselect the positions to be used for this extraction run. Enter any required information, and touch the **Proceed** button to continue.

   Note: When using 48-position Maxwell® Instruments, press the **Front** and **Back** buttons to select/deselect cartridge positions on each deck tray.
6. After the door has been opened, confirm that all Extraction Checklist items have been performed. Verify that samples were added to well #1 of the cartridges, cartridges are loaded on the instrument, uncapped elution tubes are present with Elution Buffer and plungers are in well #8. Transfer the deck tray(s) containing the prepared cartridges onto the Maxwell® Instrument platform.

6. Maxwell® RSC Instrument Setup and Run (continued)

Inserting the Maxwell® Deck Tray: Hold the deck tray by the sides to avoid dislodging cartridges from the deck tray. Ensure that the deck tray is placed in the Maxwell® Instrument with the elution tubes closest to the door. Angle the back of the deck tray downward and place into the instrument so that the back of the deck tray is against the back of the instrument platform. Press down on the front of the deck tray to firmly seat the deck tray on the instrument platform. If you have difficulty fitting the deck tray on the platform, check that the deck tray is in the correct orientation. Ensure the deck tray is level on the instrument platform and fully seated.

Note: Check the identifier on the 24-position Maxwell® deck tray(s) to determine whether they should be placed in the front or back of the instrument.

7. Touch the **Start** button to begin the extraction run. The platform will retract, and the door will close.

Note: When using a 48-position Maxwell® Instrument, if the Vision System has been enabled, the deck tray(s) will be scanned as the door retracts. Any errors in deck tray setup (e.g., plungers not in well #8, elution tubes not present and open) will cause the software to return to the 'Cartridge Setup' screen, and problem positions will be marked with an exclamation point in a red circle. Touch the exclamation point for a description of the error and resolve all error states. Touch the **Start** button again to repeat deck tray scanning and begin the extraction run.

Warning: Pinch point hazard.

The Maxwell® Instrument will immediately begin the purification run. The screen will display information including the user who started the run, the current method step being performed and the approximate time remaining in the run.

Notes:

1. Touching the **Abort** button will abandon the run. All samples from an aborted run will be lost.
2. If the run is abandoned before completion, you may be prompted to check whether plungers are still loaded on the plunger bar. If plungers are present on the plunger bar, you should perform **Clean Up** when requested. If plungers are not present on the plunger bar, you can choose to skip **Clean Up**. The samples will be lost.

8. Follow on-screen instructions at the end of the method to open the door. Verify that plungers are located in well #8 of the cartridge at the end of the run. If plungers are not removed from the plunger bar, follow the instructions in the Technical Manual appropriate to your Maxwell® Instrument (see table above) to perform a **Clean Up** process to attempt to unload the plungers.
9. Remove the deck tray(s) from the instrument. Remove elution tubes containing viral total nucleic acid, and cap the tubes. If paramagnetic particles are present in the elution tubes, centrifuge at 10,000–20,000 × *g* for 2–5 minutes. After the run is complete, the extraction run report will be displayed. From the 'Report View' screen, you can print or export this report or both.
10. Remove the cartridges and plungers from the deck tray(s), and discard as hazardous waste following your institution's recommended guidelines. Do not reuse reagent cartridges, plungers or elution tubes.

Note: Ensure samples are removed before performing any required UV light treatment to avoid damage to the nucleic acid.

7. Storing Eluted Nucleic Acid

If samples are not processed immediately, store the eluted viral DNA on ice or at 4°C for up to 24 hours. For longer term storage, freeze at –20°C or –70°C. Viral RNA is less stable and preferably tested in downstream assays immediately after isolation. Alternatively, store eluted viral RNA at –70°C. Consult the instructions for downstream applications for specific sample storage and handling recommendations.

8. References

1. Clinical Laboratory Standards Institute (2007). Handling, transport, and storage of specimens for molecular methods. This can be viewed online at: **www.clsi.org**
2. Murray, P.R. *et al.* (2007) *Manual of Clinical Microbiology*, 9th Edition, ASM Press.

9. Troubleshooting

For questions not addressed here, please contact your local Promega Branch Office or Distributor. Contact information available at: **www.promega.com**. E-mail: **techserv@promega.com**

Symptoms	Causes and Comments
Lower viral nucleic acid recovery than expected (e.g., for customer-provided internal controls)	The starting samples were compromised. Ensure that samples were collected, shipped and stored according to recommended guidelines.
	For RNA viral samples, ensure RNase-free conditions are used for sample preparation and assay setup, including RNase-free tubes and pipette tips.
	Processing step was not optimal. • Prepare Lysis Buffer and Proteinase K immediately before use, and discard unused solutions following your institution's recommended guidelines. • Use only the Lysis Buffer provided with this kit. • Incomplete mixing may reduce lysis. Vortex sample with Lysis Solution as recommended. • Incomplete protease treatment to remove viral capsids. Check the heat block or water bath temperature, and incubate for the full time recommended. • Incubation for 10 minutes at room temperature before the 56°C incubation may improve recovery for some plasma samples. • Some viruses may need higher incubation temperatures. • Adding more sample than recommended may reduce nucleic acid recovery.

9. Troubleshooting (continued)

Symptoms	Causes and Comments
Lower viral nucleic acid recovery than expected (e.g., for customer-provided internal controls)	The Maxwell® Instrument was set for the wrong method. Ensure that the Viral Total Nucleic Acid method is chosen.
	Check that a plunger was added to the cartridge.
	Ensure that all cartridges are snapped into the deck tray properly before processing.
	Post-purification storage issues. • Remove eluates, and store at the recommended temperature immediately after the Maxwell® Instrument run. • Do not subject eluates to multiple freeze-thaw cycles before downstream assays.
	Nucleic acid internal controls smaller than 100bp may not be efficiently purified using the system. The user is responsible for establishing performance of any internal control.
Poor amplification	Paramagnetic particle carryover may cause interference in amplification reactions. Remove particles in elution tube by centrifugation.
	Wrong elution buffer was added. Use only the Nuclease-Free Water supplied with the Maxwell® RSC Viral Total Nucleic Acid Purification Kit.
Cross-contamination	Use fresh pipette tips for each sample to prevent sample-to-sample contamination.
	Avoid splashing when adding lysates to cartridges. Cartridges may be removed from the deck tray for sample addition to minimize contamination of adjacent cartridges.
Instrument unable to pick up plungers	Make sure you are using an RSC-specific chemistry kit; the plungers for the Maxwell® RSC reagent kits are specific to the supported Maxwell® Instruments for this kit.

10. Related Products

Instrument and Accessories

Product	Size	Cat.#
Maxwell® RSC Instrument	1 each	AS4500
Maxwell® RSC 48 Instrument	1 each	AS8500
Maxwell® FSC Instrument	1 each	AS4600
Maxwell® CSC Instrument	1 each	AS6000
Maxwell® RSC Plunger Pack	1 each	AS1670
Maxwell® RSC/CSC Plungers	50/pack	AS1331
Maxwell® RSC/CSC Deck Tray	1 each	SP6019
Maxwell® FSC Deck Tray	1 each	AS4016
Maxwell® RSC/CSC 48 Front Deck Tray	1 each	AS8401
Maxwell® RSC/CSC 48 Back Deck Tray	1 each	AS8402
Maxprep™ Carrier, Maxwell® RSC	1 each	AS9402
Maxprep™ Carrier, Maxwell® RSC 48 Front	1 each	AS9403
Maxprep™ Carrier, Maxwell® RSC 48 Back	1 each	AS9404
Maxprep™ Liquid Handler, RSC Carriers	1 each	AS9100
Maxprep™ Liquid Handler, RSC Carriers w/UV light	1 each	AS9101
Maxprep™ Liquid Handler, RSC 48 Carriers	1 each	AS9200
Maxprep™ Liquid Handler, RSC 48 Carriers w/UV light	1 each	AS9201
Maxprep™ 1000µl Conductive Disposable Tips, Filtered	40/box	AS9303
Maxprep™ 300µl Conductive Disposable Tips, Filtered	60/box	AS9302
Nunc 2.0ml Deep Well Plates	60/pack	AS9307
Maxprep™ Reagent Reservoir, 50ml	28/pack	AS9304
Maxprep™ Waste Bags, Clear	100/box	AS9305
Maxprep™ Plunger Holder	1 each	AS9408
Maxprep™ 3-Position Reagent Tube Holder	1 each	AS9409
RNase A Solution, 4mg/ml	1ml	A7973
ClickFit Microtube, 1.5ml	1,000/pack	V4741

Maxwell® RSC Reagent Kits

For a list of available Maxwell® RSC purification kits, visit: **www.promega.com**

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11. Summary of Changes

The following changes were made to the 5/20 revision of this document:

1. Added new size ASB1330.
2. Corrected Step 3.b in Section 6.
3. Updated names of Related Products in Section 10.

[a]U.S. Pat. Nos. 6,027,945, 6,368,800 and 6,673,631, Japanese Pat. No. 3253638, European Pat. No. 1 204 741 and other patents.

[b]U.S. Pat. No. 7,329,488 and other patents.