



# **Top-Off Resin for Q and S Bio-Scale Columns Instructions**

**Catalog Numbers  
751-0009, 751-0019**

For Technical Service  
Call Your Local Bio-Rad Office or  
in the U.S. Call **1-800-4BIORAD**  
(1-800-424-6723)

**BIO-RAD**

# Introduction

When the top of the column bed is strongly discolored or obviously plugged and the usual hygiene steps do not restore performance, then a few millimeters of the bed should be removed and replaced with fresh resin as instructed below:

## Column Preparation

1. Wash column with 10 bed volumes of deionized water at a flow rate not exceeding 50% of the recommended maximum flow-rate (see Table 1).
2. Disassemble the column and remove the top frit as described in the Bio-Scale column instruction manual.
3. Add 2-4 mm of deionized water to the top of the resin bed.
4. Using a spatula or pipette slurry the contaminated resin.
5. Remove the slurry with a pipette.

## Top-Off Resin Usage

1. Vortex the top-off tube until the slurry is homogeneous.
2. Pipette an appropriate amount of slurry on top of the column bed (see Table 1).
3. Allow the resin to settle (approximately 10-15 min).
4. Insert frit and assemble column as described in the Bio-Scale column instruction manual.
5. After assembly, backflush the column with deionized water at a low flow rate until the air is removed from the tubing.
6. Turn the column around and wash the column with 5 column volumes of deionized water at a flow rate not exceeding 50% of the maximum recommended flow rate (see Table 1).
7. Prior running a sample, it is recommended to run a blank gradient at the appropriate flow rate an ionic strength to ensure the column packing is homogeneous.
8. Column performance can be tested by using a Bio-Rad Protein Standard. Use the conditions stated in the Sample Chromatogram that was provided with the column.

# Technical Assistance

For additional information and technical assistance, contact your local Bio-Rad representative (as listed on the back cover of our catalog). In the U.S.A., call Technical Service at 1-800-4BIORAD.

**Table 1. Look-Up Tables and Conversions**

<b>Column Volume</b>	<b>Maximum Recommended Flow Rate(ml/min)</b>	<b>ml Resin/cm Column Length</b>
2 ml	0.5 to 3.0	0.4
5 ml	0.5 to 5.0	0.8
10 ml	0.5 to 7.0	1.1
20 ml	0.5 to 10.0	1.8

- The slurry concentration is approximately 66% (resin/20% ethanol)
- There is approximately 1.2 ml of resin per tube
- To measure: 0.5 ml of resin, pipette 0.8 ml of slurry  
1.0 ml of resin, pipette 1.6 ml of slurry

## Ordering Information

<b>Catalog Number</b>	<b>Product Description</b>
751-0001	<b>Bio-Scale Q2 Column</b>
751-0003	<b>Bio-Scale Q5 Column</b>
751-0005	<b>Bio-Scale Q10 Column</b>
751-0007	<b>Bio-Scale Q20 Column</b>
751-0009	<b>Top-Off Resin Kit Q</b> , 1 ml, includes 1 ml of MP10 Q resin, 2 frits and 2 distribution screens for each column diameter
751-0011	<b>Bio-Scale S2 Column</b>
751-0013	<b>Bio-Scale S5 Column</b>
751-0015	<b>Bio-Scale S10 Column</b>

# Ordering Information (cont.)

<b>Catalog Number</b>	<b>Product Description</b>
751-0017	<b>Bio-Scale S20 Column</b>
751-0019	<b>Top-Off Resin Kit S</b> , 1 ml, includes 1 ml of MP10 S resin, 2 frits and 2 distribution screens for each column diameter
751-0091	<b>Bio-Scale 2 ml Replacement Part Kit</b> , includes 5 frits, 5 distribution screens, 2 o-rings, 1 frit remover
751-0093	<b>Bio-Scale 5 ml Replacement Part Kit</b> , includes 5 frits, 5 distribution screens, 2 o-rings, 1 frit remover
751-0095	<b>Bio-Scale 10 ml Replacement Part Kit</b> , includes 5 frits, 5 distribution screens, 2 o-rings, 1 frit remover
751-0097	<b>Bio-Scale 20 ml Replacement Part Kit</b> , includes 5 frits, 5 distribution screens, 2 o-rings, 1 frit remover
751-0099	<b>Bio-Scale Fittings Kit</b> , includes 2 Super Flangeless Nuts (1/4 x 28 thread) and 6 Ferrules, 2 Flangeless M6 Nuts, 4 Ferrules and 2 Caps, 2 Fingertight II Fittings (10-32 threads)



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