

QuanRecovery Vials and Plates with MaxPeak High Performance Surfaces (HPS)

CONTENTS

- I. INTRODUCTION**
- II. DESCRIPTIONS AND SPECIFICATIONS**
- III. SEALING OPTIONS**
 - a. QuanRecovery Plates
 - b. QuanRecovery Vials
- IV. USAGE INSTRUCTIONS**
 - a. Peptides
 - b. Proteins
 - c. Other biomolecules
- V. STORAGE**
- VI. SUMMARY**
- VII. ORDERING INFORMATION**
- VIII. CAUTIONARY NOTE**

I. INTRODUCTION

QuanRecovery™ Vials and Plates with MaxPeak™ High Performance Surfaces (HPS) were designed by LC-MS scientists, for LC-MS scientists, to increase analyte sensitivity, recovery, and reproducibility in biomolecule analysis. Traditional glass or polypropylene containers can adsorb biomolecules through either ionic or hydrophobic interactions. The QuanRecovery Vials and Plates with MaxPeak HPS reduce sample losses due to non-specific binding (NSB), allowing scientists to meet challenging requirements of highly sensitive LC-MS quantification assays without concern for any losses at this workflow stage. These vials and plates are provided in LC-MS autosampler-ready formats with low residual volumes that are designed to allow maximum injection volumes from low volume samples.



QuanRecovery™
WITH MAXPEAK™ HPS

II. DESCRIPTIONS AND SPECIFICATIONS

Table 1. QuanRecovery Plates and Vials

	QuanRecovery Plates	QuanRecovery Vials
Shape		
Part number	186009185 (5/pk), 186009184 (25/pk)	186009242 (25/pk), 186009186 (100/pk)
Format	96-well plate	300 µL vial
Total volume - well or vial	700 µL	300 µL
Material	Polypropylene with MaxPeak High Performance Surfaces	Polypropylene with MaxPeak High Performance Surfaces
Well bottom	Conical	Conical
Plate selection from chromatography data system	ANSI-96-well, 1 mL	ANSI-48-vial, 2 mL vial holder
Residual volume at default needle placements in ACQUITY™ UPLC™ Systems	≥8 µL FL and FTN: 2 mm from bottom (default)	≥5 µL FL: 2 mm (default), FTN: 3 mm
Max centrifugal force	2000 g	N/A
pH range	0-14	0-14

Plate Dimensions for LC Autosampler settings:

QuanRecovery Plates can be used in any instrument that uses 96 well plates, as long as the proper settings are entered. In many cases, this can be as simple as choosing the 1-mL, 96-well plate selection. However, this may not be as straightforward with some competitive instruments. Please see Figure 1 and Table 2 below to get the appropriate dimensions to be entered into the system software.

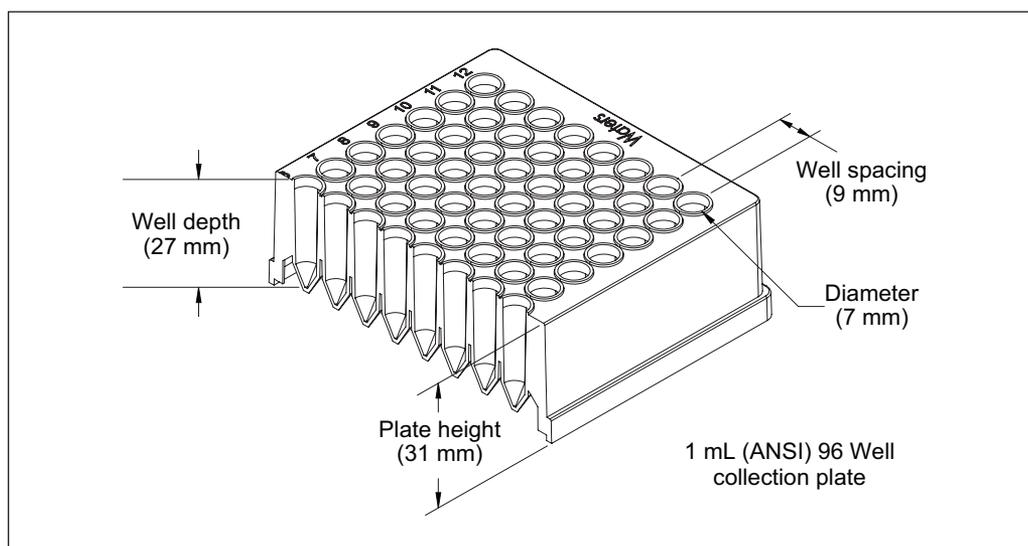
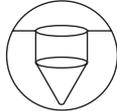


Figure 1. Schematic drawing and critical dimensions of the 96-well, 700 µL QuanRecovery plate.

Table 2. Plate Dimension for LC Data System

Well Shape	Round
	Conical
Well bottom shape	
Well diameter	7 mm
Well spacing	9 mm
Well depth	27 mm
Plate height	31 mm
Plate selection in data system	1 mL ANSI 96 Well collection plate
Residual volume in ACQUITY UPLC Systems at default needle setting of 2 mm	8 µL

III. SEALING OPTIONS

a. QuanRecovery Plates

Table 3. Cap Mats for QuanRecovery with MaxPeak HPS 700 µL Plates*

System	ACQUITY UPLC, ACQUITY UPLC I-Class, ACQUITY UPLC M-Class, nanoACQUITY UPLC	ACQUITY UPLC H-Class/ H-Class Bio, ACQUITY Arc/ Arc Bio, ACQUITY UPLC I-Class
Needle	Fixed-loop	Flow-through
Polypropylene cap mat, 50/pk	186002483	n/a
Clear polyester heat seal, 100/pk	186002788	186002788
Aluminum foil laminate heat seal, 100/pk	186002789	n/a
Adhesive seals, 100/pk	186006336	186006336
Pre-slit PTFE/silicone mat, 5/pk	186006332	186006332

*It is recommended to minimize sample contact with caps and sealing mats.

b. QuanRecovery Vials

Table 4. Caps for QuanRecovery with MaxPeak HPS 300 µL Vials*

Description	P/N
Combination Pack: QuanRecovery Vials Package with pre-slit PTFE/silicone cap and septum, 100/pk	176004434
Caps Only: PE septumless cap, 100/pk	186004169
Caps Only: Black solid cap with PTFE/silicone liner for storage, 100/pk	186007187

*It is recommended to minimize sample contact with caps and sealing mats.

IV. USAGE INSTRUCTIONS

QuanRecovery Vials and Plates with MaxPeak HPS are designed to reduce analyte losses due to non-specific binding (NSB) while storing biomolecules before LC-MS analysis. These vials and plates are ideal for use after sample preparation, including solid-phase extraction (SPE) or affinity purification, where sample matrix has been removed to increase specificity or concentrate target analytes.

Note: Analytes may still be lost on other surfaces with which they may come in contact (e.g., during transfers, in the LC-MS system). The use of carrier proteins or blocking agents may help mitigate these downstream losses.

a. Peptides

Peptide bioanalysis often requires sample cleanup to increase peptide specificity and/or concentration. This step typically removes sample matrix that would provide protection against peptide losses due to NSB. Peptides can be stored in QuanRecovery Vials or Plates prior to LC-MS analysis with LC-MS compatible additives, modifiers, and organic solvents. Minimal peptide losses have been shown during 72 hours in an autosampler, increasing confidence in analytical results. Individual results will be dependent on the behavior of unique peptides influenced by pI, hydrophobicity, and experimental conditions.

For more information on peptide sample cleanup, please see Oasis Peptide Bioanalysis Reference Cards (p/n: [70006298EN](#)).

b. Proteins

Proteins are more complex than peptides due to their size, and there may be more opportunities for them to adsorb to surfaces they come in contact with while stored in vials or plates. Many proteins may have improved stability in QuanRecovery Vials and Plates under acidic pH storage conditions. If neutral or basic pH storage conditions are desired, use of QuanRecovery Vials and Plates should be assessed on a per molecule basis.

c. Other biomolecules

Additional biomolecules may benefit from QuanRecovery Vials and Plates with MaxPeak HPS. These will need to be experimentally determined per molecule type and assay requirement.

V. STORAGE

QuanRecovery Vials and Plates should be stored in their original packaging and in an enclosed, clean, dry container away from direct sunlight, and at room temperature. Avoid excessive heat and humidity. Avoid situations where product may become dirty or contaminated, such as loose and uncovered storage in drawers or on bench tops. Always employ good laboratory practices.

VI. SUMMARY

QuanRecovery Vials and Plates were designed to enable scientists to meet challenging sensitivity and reproducibility requirements in LC-MS peptide and protein quantification by reducing sample losses due to non-specific binding. QuanRecovery Vials and Plates are enabled by MaxPeak High Performance Surfaces (HPS), designed to increase analyte recovery and reproducibility by minimizing analyte/surface interactions. These interactions (i.e., non-specific binding [NSB]), can lead to lower sensitivity and higher variability in analytical results. QuanRecovery Vials and Plates were designed to reduce these losses and were created especially for LC-MS scientists in autosampler ready formats with low residual volumes to enable improved utilization of small sample volumes.

VII. ORDERING INFORMATION

	P/N
QuanRecovery with MaxPeak HPS 300 µL Vials, 25/pk	186009242
QuanRecovery with MaxPeak HPS 300 µL Vials, 100/pk	186009186
Combination Pack: QuanRecovery with MaxPeak HPS Vials Package (p/n: 186009186) with pre-slit PTFE silicone cap and septum, 100/pk	176004434
QuanRecovery with MaxPeak HPS 700 µL 96-well Plates, 25/pk	186009184
QuanRecovery with MaxPeak HPS 700 µL 96-well Plates, 5/pk	186009185

QuanRecovery Vials and Plates with MaxPeak HPS are manufactured to be RNase/DNase free.

VIII. CAUTIONARY NOTE

Depending on the user's application, these products may be classified as hazardous following their use, and as such are intended to be used by professional laboratory personnel trained in the competent handling of such materials. Responsibility for the safe use and disposal of products rests entirely with the purchaser and user. The Safety Data Sheet (SDS) for this product is available at www.waters.com/sds.

Research only. Not for IVD use.

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