



**BIOKÉ**  
sharing knowledge

Plesmanlaan 1d  
2333 BZ Leiden  
The Netherlands  
T. +31 (0)71 568 10 00  
T. Belgium: 0800 71640  
F. +31 (0)71 568 10 10  
info@bioke.com  
www.bioke.com

# **NucleoVac 96 vacuum manifold**

## **User manual**

June 2007/ Rev. 04

**MACHERY-NAGEL**



## Table of contents

1	Contents	4
2	Product description	5
2.1	Overview of parts	5
3	General remarks	6
3.1	Assembly of the NucleoVac 96 vacuum manifold	6
3.2	Setting up vacuum	6
3.3	Apply vacuum	7
3.4	Ventilate manifold	7
4	Use of NucleoSpin® 8 kits	8
4.1	NucleoSpin® 8 kits with filter and binding strips	8
4.2	NucleoSpin® 8 kits with binding strip only	9
5	Use of NucleoSpin® 96 kits	10
5.1	NucleoSpin® 96 kits with filter and binding plate	10
5.2	NucleoSpin® 96 kits with binding plate only	11
6	Use of NucleoFast kits	12
7	Appendix	13
7.1	Pressure conversions	13
7.2	Manifold care	13
7.3	Troubleshooting	13
7.4	Ordering information	14
7.5	Product Use Restriction / Warranty	14

# 1 Contents

<b>NucleoVac 96</b>	
<b>Cat. No.</b>	<b>740 681</b>
NucleoVac 96 manifold base	1
NucleoVac 96 manifold lid	1
Waste container	2
MN Tube Strips*	2
	2 spacers for "MTP/Multi-96 plates"
Spacer set	2 spacers for "round-well blocks"
	2 spacers for "square-well blocks"
	2 spacers for "microtube rack"
User manual	1

**Note:**

For processing the NucleoSpin® 8-well strips on the NucleoVac 96 the Starter Set A is required.

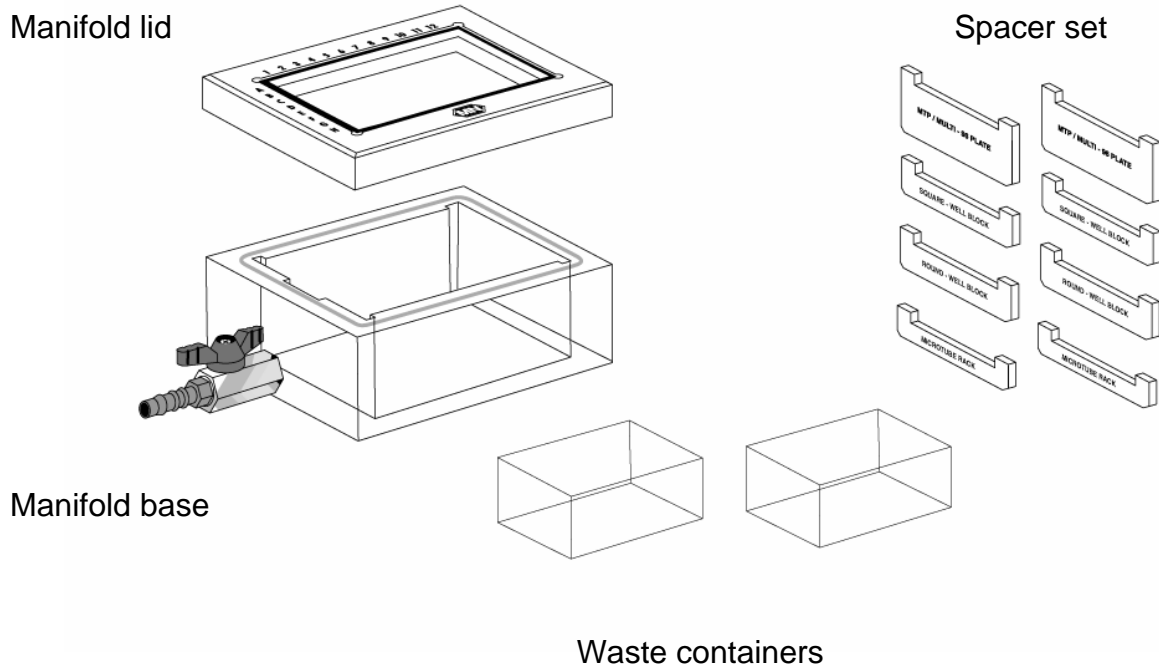
---

\* Set of 1 rack, 12 strips with 8 tubes each.

## 2 Product description

The NucleoVac 96 vacuum manifold is designed for the rapid manual parallel purification of nucleic acids using the 8-well and 96-well NucleoSpin® kits and the NucleoFast kits. The NucleoSpin® 8/96 kits are based on MACHEREY-NAGEL's well known NucleoSpin® silica membrane technology and allow rapid simultaneous purification of high-quality nucleic acids. Time consuming centrifugation and decanting steps are eliminated by use of vacuum. The NucleoFast kits are based on ultrafiltration technology and offer a fast and convenient way of nucleic acid purification. The NucleoVac 96 manifold provides spacer sets to accommodate suitable microtiter plates, deep-well blocks (round-well and square-well blocks), or microtube racks for collecting samples.

### 2.1 Overview of parts



## 3 General remarks

### 3.1 Assembly of the NucleoVac 96 vacuum manifold

Place manifold base on a secure lab bench.

For the use of the **NucleoSpin® 8** kits on the NucleoVac 96 the Starter Kit A is needed (see ordering information). This set contains the Column Holders A and MN Dummy Strips. The Column Holders A are used to hold the desired number of 8-well strips (up to six) during the preparation. The Dummy Strips are used to fill the unused rows of the Column Holders A.

If using a **NucleoSpin® 8** kit with filter and binding strips, please refer to section 4.1 for setup of the vacuum manifold. If the **NucleoSpin® 8** kit contains only binding strips, please see figure 4.2.

For the use of **NucleoSpin® 96** kits no additional hardware is necessary. If using a kit with filter and binding plates, e.g. NucleoSpin® Multi-96 Plus Plasmid, the setup is shown in section 5.1. The setup for NucleoSpin® 96 kits with only binding plates the setup can be found in section 5.2.

Please make sure that you insert the appropriate spacers into the NucleoVac 96 base to rest the binding strip/plate, the MN Wash Plate, the MN Tube Strips or the elution plate in the right distance underneath the outlets of the plate inserted into the manifold top.

For the use of **NucleoFast®** kits, insert a waste container into the manifold base. Close the manifold with the lid. Insert the NucleoFast® Plate into the manifold lid and start procedure according to the kit protocol. Unused wells do not have to be taped. The use of the provided spacers is not necessary. For the detailed setup refer to section 6.1.

### 3.2 Setting up vacuum

Connect the manifold to a suitable vacuum source like a water aspirator, house vacuum, or vacuum pump (e.g. KNF Laboport vacuum pump NB 840.3). Close the manifold's valve before adjusting vacuum. Adjust vacuum according to the kit protocol by using an appropriate regulator (e.g. Cat. No. 740 641). Alternatively, vacuum can be adjusted by measuring the flow through of samples (see kit protocols).

### **3.3 Apply vacuum**

Load samples into the individual wells of the filter or binding strips/plate. Open valve and if necessary press down the strips/plate shortly until flow starts.

### **3.4 Ventilate manifold**

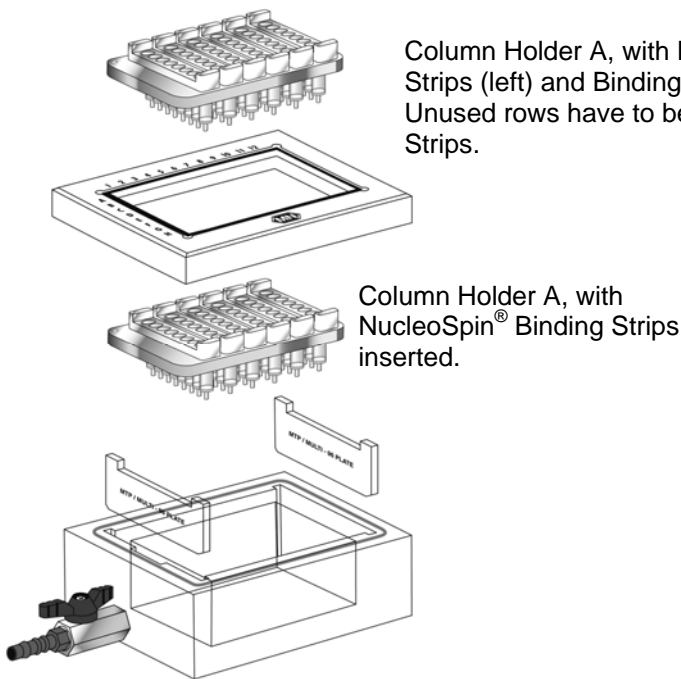
When the samples have passed the wells, close valve and wait about 10 - 20 seconds until the NucleoSpin<sup>®</sup> 96-well plate or the Column Holder A with the 8-well strips can be removed easily. For NucleoFast plates make sure that the manifold is completely ventilated after each vacuum step. Ventilate for 60 – 90 seconds.

## 4 Use of NucleoSpin® 8 kits

### 4.1 NucleoSpin® 8 kits with filter and binding strips

Processing of a NucleoSpin® 8 kit with filter and binding plates, e.g. NucleoSpin® Multi-8 Plus Plasmid, is performed in two steps:

#### Filtration

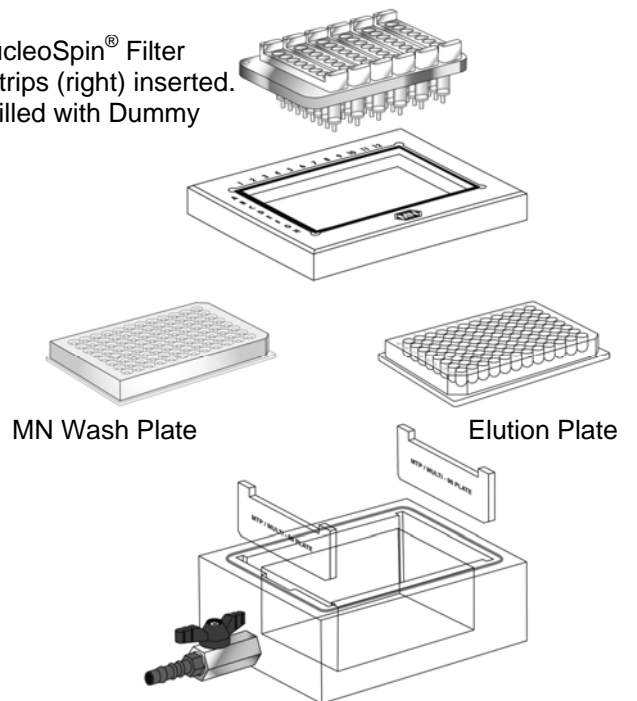


Column Holder A, with NucleoSpin® Filter Strips (left) and Binding Strips (right) inserted. Unused rows have to be filled with Dummy Strips.

Column Holder A, with NucleoSpin® Binding Strips inserted.

Manifold base with spacers "MTP/Multi-96 Plate" inserted.

#### Binding/Washing/Elution



MN Wash Plate

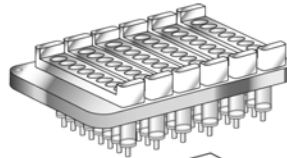
Elution Plate

Manifold base with spacers "MTP/Multi-96 Plate" inserted. Optionally, elution can be performed into MN Tube Strips. Insert the appropriate spacers.

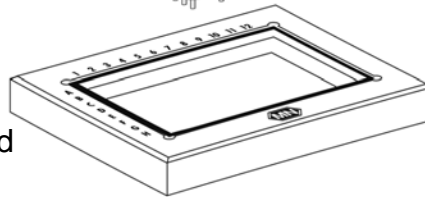
## 4.2 NucleoSpin® 8 kits with binding strip only

Processing of a NucleoSpin® 8 kit which contains only binding strips, e.g. NucleoSpin® Multi-8 Extract:

Column Holder A, with NucleoSpin® Binding Strips inserted. Unused rows have to be filled with Dummy Strips



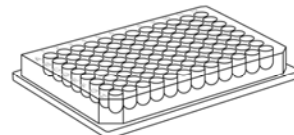
Manifold lid



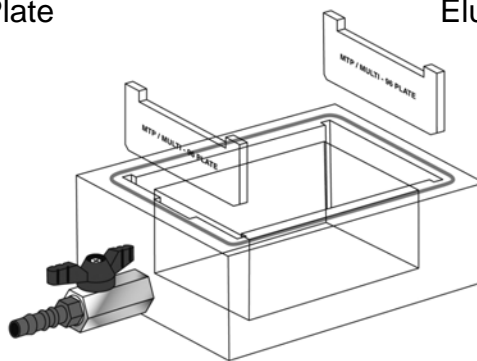
MN Wash Plate



Elution Plate



Manifold base with spacers  
“MTP/Multi-96 Plate” inserted



Optionally, elution can be performed into MN Tube Strips. Insert the appropriate spacers.



## 5 Use of NucleoSpin® 96 kits

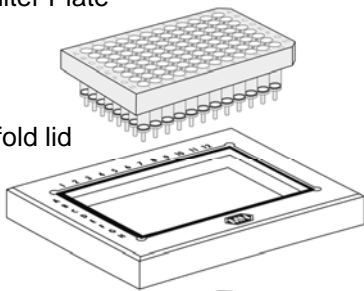
### 5.1 NucleoSpin® 96 kits with filter and binding plate

Processing of a NucleoSpin® 96 kit with filter and binding plates, e.g. NucleoSpin® Multi-96 Plus Plasmid, is performed in two steps:

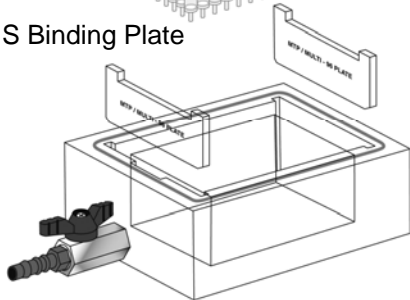
#### Filtration

NS Filter Plate

Manifold lid



NS Binding Plate

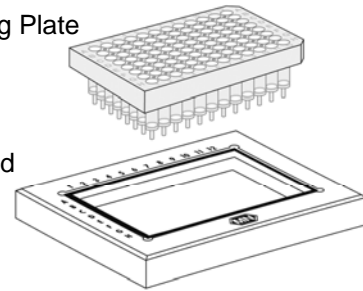


Manifold base  
with spacers "MTP/Multi-96 Plate"  
and waste tray inserted

#### Binding, washing, and elution

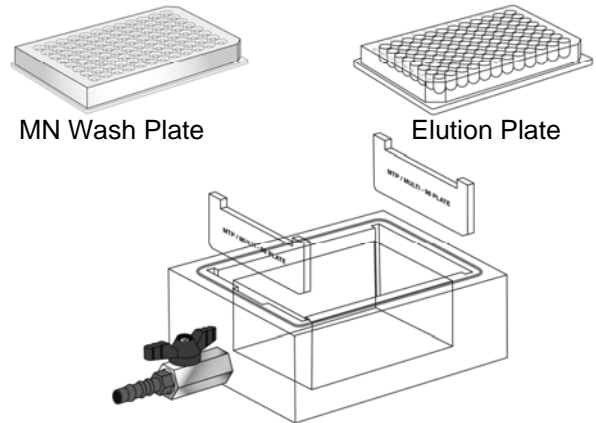
NS Binding Plate

Manifold lid



MN Wash Plate

Elution Plate

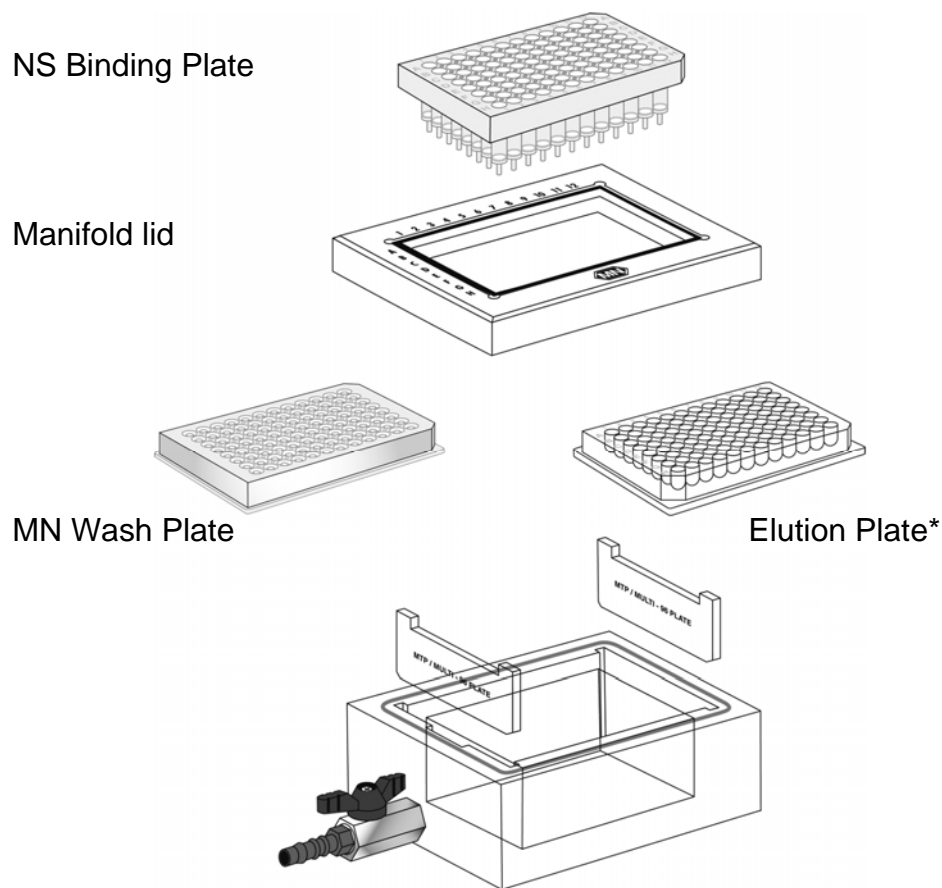


Manifold base  
with spacers "MTP/Multi-96 Plate"  
and waste tray inserted

\*Alternatively, a round-well block, square-well block, or MN Tube Strips can be used for elution. Use the appropriate spacers.

## 5.2 NucleoSpin® 96 kits with binding plate only

Processing of a NucleoSpin® kit which contains only binding plates, e.g. NucleoSpin® Multi-96 Extract:



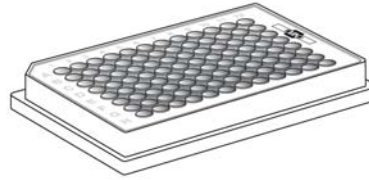
Manifold base  
with spacers "MTP/Multi-96 Plate" and  
waste tray inserted

\*Alternatively, a round-well block, square-well block, or MN Tube Strips can be used for elution. Use the appropriate spacers.

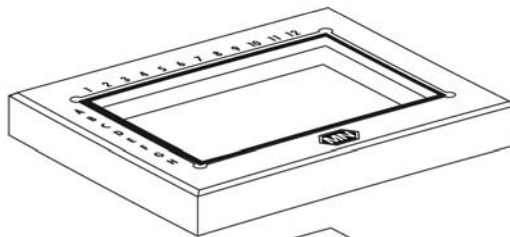
## 6 Use of NucleoFast kits

NucleoFast kits, e.g. NucleoFast 96 PCR, can easily be used on the NucleoVac 96. The spacers provided with the NucleoVac 96 manifold are not used, inside the vacuum chamber only the waste container is placed.

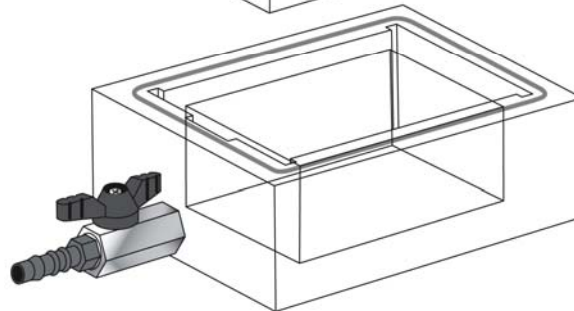
NucleoFast Plate



Manifold lid



Manifold base  
with waste tray inserted



## 7 Appendix

### 7.1 Pressure conversions

1 mbar = 100 Pa =  $0.987 \times 10^{-3}$  atm = 0,750 mm Hg =  $14.504 \times 10^{-3}$  psi

### 7.2 Manifold care

The manifold consists of an acrylic base and spacers, a PVC cover lid, and a valve made of stainless steel and other metals. Do not autoclave either manifold or cover lid. The parts of the manifold are resistant to diluted acetic acid, ethanol, guanidine-HCl, NaCl, NaOH, SDS. However, prolonged exposure of the manifold to these chemicals should be avoided. Therefore, after DNA purification rinse all parts of the manifold (particularly the valve) carefully with water and dry them thoroughly. The manifold must not come in contact with acetone, phenol, toluene, or other apolar organic solvents.

### 7.3 Troubleshooting

<b>Problem</b>	<b>Possible cause and suggestions</b>
	<i>Gasket</i> <ul style="list-style-type: none"><li>• Insert a microtiter plate with closed, rectangular bottom into the manifold lid. The gasket of the vacuum manifold must be covered completely by the microtiter plate. Apply vacuum to the manifold and test the vacuum. The MTP should be fixed now by vacuum.</li></ul>
Vacuum is not build up properly	<i>The vacuum manifold</i> <ul style="list-style-type: none"><li>• Are there any cracks on the surface of the vacuum manifold?</li><li>• Check the main valve: is it tightly fixed into the vacuum manifold?</li><li>• Are there any cracks around the valve?</li></ul>

---

## 7.4 Ordering information

Product	Cat. No.	Pack of
Starter Set A, for processing the NucleoSpin® 8 Strips on the NucleoVac 96	740 682	1 set
Dummy Strips	740 685	6
Vacuum regulator	740 641	1
Replacement parts for the NucleoVac 96 are available upon request		
Square-well blocks	740 678	20
Self-adhering PE foil	740 676	50 sheets
Gas-permeable foil	740 675	50 sheets
MN tube strips (1 rack, 12 strips/8 tubes each)	740 637	5 racks

## 7.5 Product Use Restriction / Warranty

**NucleoVac 96 vacuum manifold** kit components were developed, designed, distributed and sold **for RESEARCH PURPOSES ONLY**.

This MACHEREY-NAGEL product is shipped with documentation stating specifications and other technical information. MACHEREY-NAGEL guarantees to meet the stated specifications. MACHEREY-NAGEL's sole obligation and the customer's sole remedy is limited to replacement of products free of charge in the event products fail to perform as warranted. Supplementary reference is made to the general business terms and conditions of MACHEREY-NAGEL, which are printed on the price list. Please contact us if you wish an extra copy.

MACHEREY-NAGEL does not warrant against damages or defects arising in shipping and handling (transport insurance for customers excluded), or out of accident or improper or abnormal use of this product; against defects in products or components not manufactured by MACHEREY-NAGEL, or against damages resulting from such non-MACHEREY-NAGEL components or products.

MACHEREY-NAGEL makes no other warranty of any kind whatsoever, and SPECIFICALLY DISCLAIMS AND EXCLUDES ALL OTHER WARRANTIES OF ANY KIND OR NATURE WHATSOEVER, DIRECTLY OR INDIRECTLY, EXPRESS OR IMPLIED, INCLUDING, WITHOUT LIMITATION, AS TO THE SUITABILITY, PRODUCTIVITY, DURABILITY, FITNESS FOR A PARTICULAR PURPOSE OR

USE, MERCHANTABILITY, CONDITION, OR ANY OTHER MATTER WITH RESPECT TO MACHEREY-NAGEL PRODUCTS.

In no event shall MACHEREY-NAGEL be liable for claims for any other damages, whether direct, incidental, foreseeable, consequential, or special (including but not limited to loss of use, revenue or profit), whether based upon warranty, contract, tort (including negligence) or strict liability arising in connection with the sale or the failure of MACHEREY-NAGEL products to perform in accordance with the stated specifications.

The warranty provided herein and the data, specifications and descriptions of this MACHEREY-NAGEL product appearing in MACHEREY-NAGEL published catalogues and product literature are MACHEREY-NAGEL's sole representations concerning the product and warranty. No other statements or representations, written or oral, by MACHEREY-NAGEL's employees, agent or representatives, except written statements signed by a duly authorized officer of MACHEREY-NAGEL are authorized; they should not be relied upon by the customer and are not a part of the contract of sale or of this warranty.

Product claims are subject to change. Therefore please contact our Technical Service Team for the most up-to-date information on MACHEREY-NAGEL products. You may also contact your local distributor for general scientific information. Applications mentioned in MACHEREY-NAGEL literature are provided for informational purposes only. MACHEREY-NAGEL does not warrant that all applications have been tested in MACHEREY-NAGEL laboratories using MACHEREY-NAGEL products. MACHEREY-NAGEL does not warrant the correctness of any of those applications.

Please contact:

MACHEREY-NAGEL Germany  
Tel.: +49 (0) 2421 969 270  
e-mail: TECH-BIO@mn-net.com

Last updated 12/2006, Rev 02