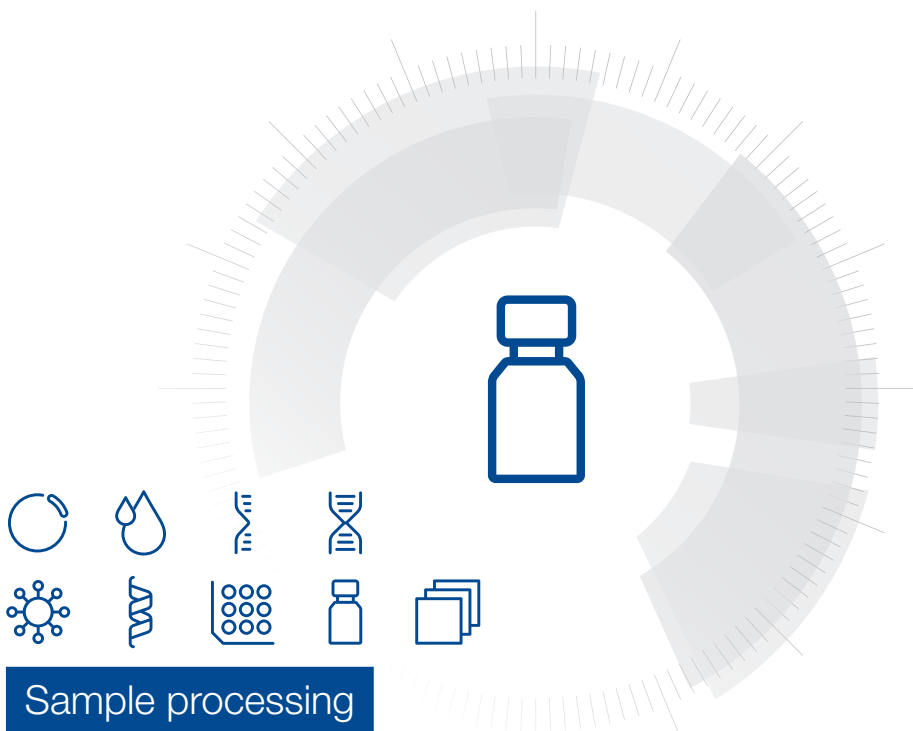


MACHEREY-NAGEL

User manual



- MN Bead Tube Holder
- MN Bead Tube Holder 5 mL

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1 Contents

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2 Product description

The **MN Bead Tube Holder** and **MN Bead Tube Holder 5 mL** are designed to be used in combination with a Vortex-Genie® instrument and a 3-inch platform in order to house up to 12 bead tubes (MN Bead Tube Holder) and 8 bead tubes (MN Bead Tube Holder 5 mL) and to disrupt biological samples for subsequent nucleic acid purification with NucleoSpin® kits.

2.1 Product specifications

Table 1: Product specifications at a glance

Parameter	MN Bead Tube Holder	MN Bead Tube Holder 5 mL
Technology	High density polyethylene foam, shaped piece	
Format	138 mm x 110 mm x 25 mm	138 mm x 120 mm x 35 mm
Sample material	NucleoSpin® Bead Tubes with biological sample for disruption	NucleoSpin® Bead Tubes 5 mL with biological sample for disruption
Sample amount	Up to 12 NucleoSpin® Bead Tubes per run	Up to 8 NucleoSpin® Bead Tubes 5 mL per run
Runtime	Up to 20 min per run	Up to 12 min per run

3 General remarks

3.1 Reagents, consumables, and equipment to be supplied by user

Reagents and consumables

- MN Bead Tube Holder: NucleoSpin® Bead Tubes Type A, B, C, D, E, or F
- MN Bead Tube Holder 5 mL: NucleoSpin® Bead Tubes Type A 5 mL
- NucleoSpin® Kit (e.g., NucleoSpin® Soil, NucleoSpin® Microbial DNA, NucleoSpin® DNA Insect, NucleoSpin® DNA Lipid Tissue, NucleoSpin® DNA Stool, NucleoSpin® DNA RapidLyse) or NucleoMag® DNA/RNA Water

Equipment

- Vortex-Genie® 2, Vortex-Genie® 2T, or Digital Vortex-Genie® 2 with 3-inch platform and rubber cover (Scientific Industries)

3.2 Handling, preparation, and storage of starting materials

Biological sample material (e.g., soil, stool, microbial culture pellets, insects, tissue) should be handled with care. Local regulations for each individual sample material need to be followed.

In case the sample needs to be stored after collection, appropriate storage-conditions need to be ensured (e.g., freeze preservation at -20 °C or -80 °C).

3.3 Sample type and recommended NucleoSpin® kits

- Soil samples
NucleoSpin® Soil (NucleoSpin® Bead Tube Type A)
- Stool samples
NucleoSpin® DNA Stool (NucleoSpin® Bead Tubes Type A)
- Microbial culture pellets of gram positive and gram negative bacteria
NucleoSpin® Microbial DNA (NucleoSpin® Bead Tube Type B)
- Yeast cell culture pellets
NucleoSpin® Microbial DNA
(with supplement NucleoSpin® Bead Tubes Type C)
- Insects
NucleoSpin® DNA Insect (NucleoSpin® Bead Tube Type D)
- Hard to lyse microbes (e.g., gram positive bacteria) within insect or tissue samples
NucleoSpin® DNA Insect (with supplement NucleoSpin® Bead Tube Type E)
- Hard to process organs (e.g., spleen, lung)
NucleoSpin® DNA RapidLyse (with supplement Bead Tube Type F)
- Water and air filters
NucleoMag® DNA/RNA Water (NucleoSpin® Bead Tubes Type A/ NucleoSpin® Bead Tubes Type A 5 mL)

3.4 Type of bead tubes

Bead type, disruption time, and frequency/speed must be optimized for a given sample to achieve the maximal yield and quality of nucleic acids.

- NucleoSpin® Bead Tubes Type A (0.6–0.8 mm ceramic beads)
Recommended for soil, stool and sediment samples (included in NucleoSpin® Soil).
- NucleoSpin® Bead Tubes Type A 5 mL (0.6–0.8 mm ceramic beads)
Recommended for large round filters.
- NucleoSpin® Bead Tubes Type B (40–400 µm glass beads)
Recommended for gram positive and -negative bacteria (included in NucleoSpin® Microbial DNA).
- NucleoSpin® Bead Tubes Type C (1–3 mm corundum)
Recommended for yeast.
- NucleoSpin® Bead Tubes Type D (3 mm steel balls)
Recommended for insect samples (included in the NucleoSpin® DNA Insect kit).
- NucleoSpin® Bead Tubes Type E (glass and steel ball mix)
Recommended for hard to lyse microbes within insect or tissue samples.
- NucleoSpin Bead Tube Type F (1–3 mm corundum and 3 mm steel ball mix)
To be used ONLY with MN Bead Tube Holder - NOT to be used with other disruption devices!
Recommended for hard to process organs like spleen and lung.

For more information about our BeadTubes and their use, see here:
www.mn-net.com/de/beadtubeoverview



3.5 Time and frequency of disruption

3.5.1 MN Bead Tube Holder

The following recommendations have been established for the MN Bead Tube Holder in combination with a Vortex-Genie® 2 operating at highest frequency. The indicated times of disruption shall serve as guideline. Optimal disruption duration depends on sample type, sample amount, vortex frequency, and liquid volume in the tube and has therefore to be determined by the user.

For using NucleoSpin® Bead Tubes with other disruption devices, other sample material, time, and frequency have to be individually optimized!

- **Gram negative bacteria**
E.g., *Escherichia coli*, *Vibrio fischeri*
NucleoSpin® Bead Tubes Type B (Alternative: Type A, Type C)
20 min
- **Gram positive bacteria**
E.g., *Bacillus subtilis*, *Corynebacterium glutamicum*
NucleoSpin® Bead Tubes Type B (Alternative: Type A)
20 min
- **Yeast**
E.g., *Saccharomyces cerevisiae*
NucleoSpin® Bead Tubes Type C
20 min
- **Filamentous fungi**
E.g., *Aspergillus spec.*, *Rhizopus spec.*
NucleoSpin® Bead Tubes Type C
20 min
- **Insect samples**
E.g., fruit fly (*Drosophila melanogaster*), house cricket (*Acheta domesticus*), field cricket (*Gryllus assimilis*), mealworm (*Tenebrio molitor*), non-biting midge larvae (*Chironomidae*), and mosquito (*Culicidae*)
NucleoSpin® Bead Tubes Type D
20 min
- **Hard to lyse microbes within insect or tissue samples**
E.g., gram positive bacteria within insect samples
NucleoSpin® Bead Tubes Type E
20 min
- **Hard to process organs**
E.g., spleen, lung
NucleoSpin® Bead Tubes Type F
20 min

3.5.2 MN Bead Tube Holder 5 mL

The following recommendation has been established for the MN Bead Tube Holder 5 mL in combination with a Vortex-Genie® 2 operating at highest frequency. The indicated time of 12 min disruption shall serve as guideline. Optimal disruption duration depends on sample type, sample amount, vortex frequency, and liquid volume in the tube and has therefore to be determined by the user.

4 Handling of MN Bead Tube Holder and MN Bead Tube Holder 5 mL

1 Prepare MN Bead Tube Holder / MN Bead Tube Holder 5 mL

Remove the rubber cover from the 3-inch platform of the Vortex-Genie®.

2 Prepare vortex mixer

Hold the MN Bead Tube Holder (5 mL) tightly with both hands, thumbs on the middle of the top. Slightly bend the holder upwards (pull with your fingers, press with your thumbs) in order to widen the platform accommodation cavity on the bottom side of the holder (Figure 1).

Push the holder carefully onto the 3-inch platform. Make sure that the 3-inch platform is completely inserted in the platform accommodation cavity and that the MN Bead Tube Holder (5 mL) is correctly positioned (Figure 2).

3 Insert NucleoSpin® Bead Tubes

Insert NucleoSpin® Bead Tubes into the MN Bead Tube Holder (5 mL) and start the vortex device.

A typical duration for sample disruption is 20 min (MN Bead Tube Holder 5 mL; 12 min). The vortex device needs to cool down between two runs.



Figure 1

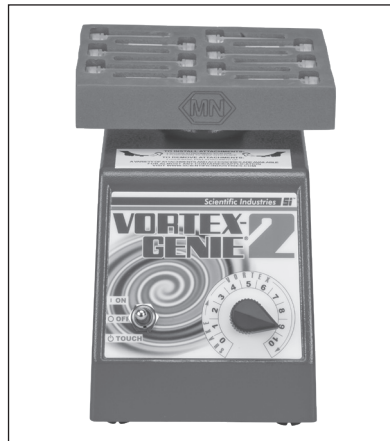


Figure 2

5 Cleaning

The MN Bead Tube Holder and MN Bead Tube Holder 5 mL shall be hand washed with lukewarm water only. Do not wash the holder in a dishwasher. Use tap water and soap to clean the holder. The holder can be disinfected with alcoholic disinfectants, 70 % ethanol, or 70 % isopropanol.

6 Appendix

6.1 Troubleshooting

Problem	Possible cause and suggestions
MN Bead Tube Holder (5 mL) do not fit on vortex device	<ul style="list-style-type: none"> MN Bead Tube Holder and MN Bead Tube Holder 5 mL are designed to fit on the 3-inch platform of the Vortex-Genie® series. They are not designed for use on other vortex instruments.
MN Bead Tube Holder (5 mL) drops off the 3-inch vortex platform	<ul style="list-style-type: none"> Make sure that the holder is positioned correctly on the 3-inch platform of the vortex device. Upon prolonged vortexing time (>20 minutes) the vortex device tends to warm up – this might cause an irregular movement and thereby a drop off of the holder. Let the vortex device cool down for 20 min before starting a second run. The MN Bead Tube Holder (5 mL) should mainly perform a circular and planar movement. If the 3-inch platform or the eccentric-clamp-assembly of the vortex instrument is worn-out, this can cause a wobbling movement of the MN Bead Tube Holder (5 mL) and a fall-off from the holder. Make sure to use only intact material. If necessary, replace the 3-inch platform or the eccentric-clamp-assembly.
No or insufficient sample disruption	<ul style="list-style-type: none"> Disruption efficiency depends on: sample type and amount, NucleoSpin® Bead Tube type, liquid volume during disruption process, vortexing duration, and frequency. Perform optimization experiments in order to determine parameters for sufficient sample disruption.

6.2 Ordering Information

Product	REF	Pack of
MN Bead Tube Holder	740469	1 piece
MN Bead Tube Holder 5 mL	740459	1 piece
NucleoSpin® Soil	740780.10/ .50/ .250	10/ 50/ 250 preps
NucleoSpin® DNA Stool	740472.10/ .50/ .250	10/ 50/ 250 preps
NucleoSpin® Microbial DNA	740235.10/ .50	10/ 50 preps
NucleoSpin® DNA Insect	740470.10/ .50	10/ 50 preps
NucleoSpin® DNA Lipid Tissue	740471.10/ .50	10/ 50 preps
NucleoSpin® DNA RapidLyse	740100.10/ .50/ .250	10/ 50/ 250 preps
NucleoSpin® Bead Tubes Type A	740768.50	50 pieces
NucleoSpin® Bead Tubes Type A 5 mL	740799.50	50 pieces
NucleoSpin® Bead Tubes Type B	740812.50	50 pieces
NucleoSpin® Bead Tubes Type C	740813.50	50 pieces
NucleoSpin® Bead Tubes Type D	740814.50	50 pieces
NucleoSpin® Bead Tubes Type E	740815.50	50 pieces
NucleoSpin® Bead Tubes Type F	740816.50	50 pieces

6.3 Product use restriction / warranty

All MACHEREY-NAGEL products are designed for their intended use only. They are not intended to be used for any other purpose. The description of the intended use of the products can be found in the original MACHEREY-NAGEL product leaflets. Before using our products, please observe the instructions for use and the safety instructions from the respective Material Safety Data Sheet of the product.

This MACHEREY-NAGEL product is carrying documentation stating specifications and other technical information. MACHEREY-NAGEL warrants to meet the stated specifications. The provided warranty is limited to the data specifications and descriptions as given in the original MACHEREY-NAGEL literature. No other statements or representations, written or oral, by MACHEREY-NAGEL's employees, agents 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 a contract of sale or of this warranty.

Liability for all possible damages that occur in any connection with our products is limited to the utmost minimum as stated in the general business terms and conditions of MACHEREY-NAGEL in their latest edition which can be taken from the company's website. MACHEREY-NAGEL does not assume any further warranty.

Products and their application are subject to change. Therefore, please contact our Technical Service Team for the latest information on MACHEREY-NAGEL products. You may also contact your local distributor for general scientific information. Descriptions in MACHEREY-NAGEL literature are provided for informational purposes only.

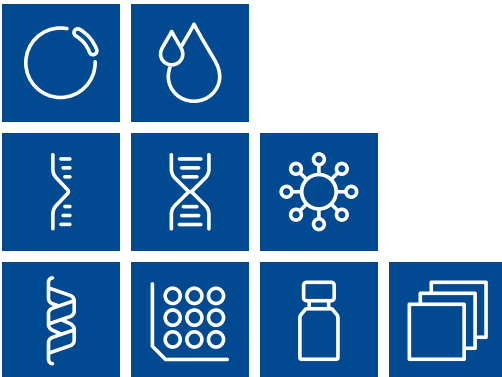
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NucleoSpin® is a registered trademark of MACHEREY-NAGEL GmbH & Co KG

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Plasmid DNA

Clean up

RNA

DNA

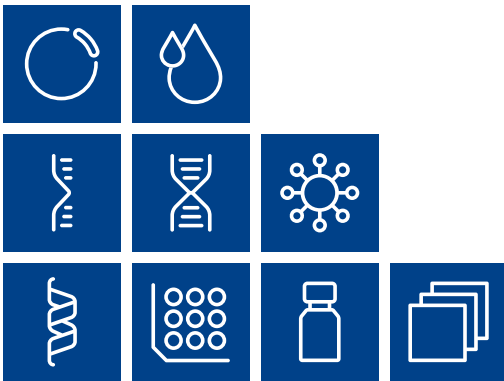
Viral RNA and DNA

Protein

High throughput

Accessories

Auxiliary tools



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