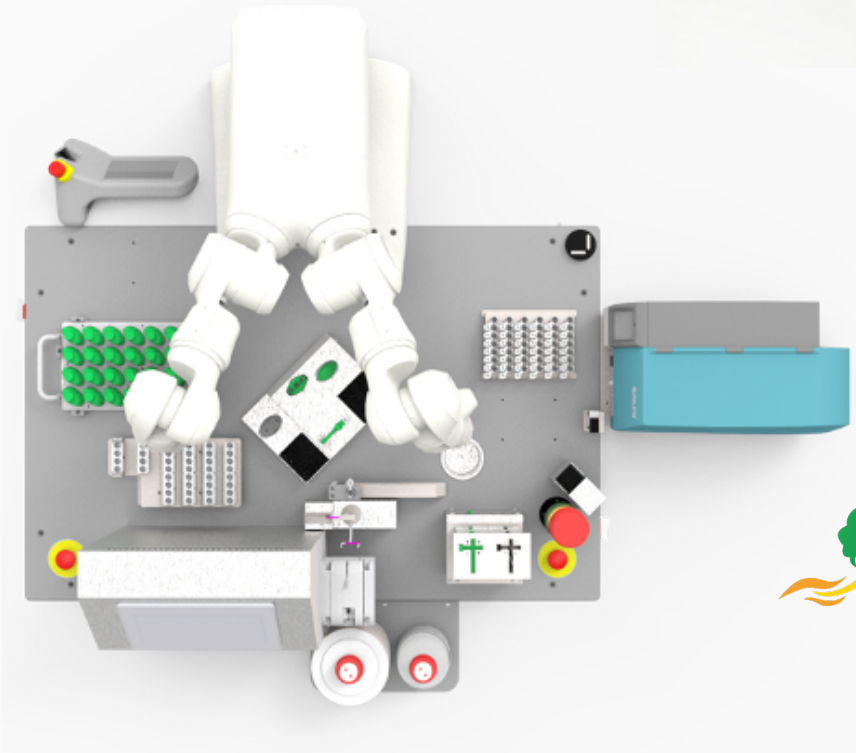
2024/2025

Breath Explor® Catalogue



Breath Explor®

It's simply breathtaking

Contents

Sampling Device

Breath Explor Sampling Device

The Breath Explor Sampling Device is a convenient, non-invasive hand-held device for sampling of non-volatile particles from the distal parts of the lung. The particles are collected through impaction (collision) in three separate, patented collectors.

The collection process is supported by the free Breath Explor Operator Guide smartphone app and a spirometer application.

The entire device is made of medical grade polypropylene copolymer (PPC). The device is CE marked and classified IVDR Class A. The device as well as the collectors are patented internationally.

Samples collected with the Breath Explor Sampling Device can be analysed for drugs and therapeutical drugs.

CE

Non-invasive | Patented | CE marked | IVDR-Compliant | Spirometer compatible | Instructive apps available

Specifications

- Medical grade polypropylene copolymer (PPC)
- CE Marked
- Height: ~85 mm
- Width: ~46.5 mm
- IVDR Class A (In vitro diagnostic device)
- Individually wrapped
- Spirometer compatible (including app)
- Free instructive app available
- Shelf life 3 years
- Temperature span -30°C–+40°C

User information

- For single use only
- For professional use only
- Collected samples must be refrigerated until sent off to the laboratory
- The laboratory providing analysis must be accredited

Publication

- Seferaj et al. 2018. "Evaluation of a new simple collection device for sampling of microparticles in exhaled breath" *Journal of Breath Research* 12.

Intended use

The intended use of the Breath Explor Sampling Device is the sampling of exhaled breath to collect aerosol particles carrying non-volatiles from the distal parts of the lung, for medical investigations and monitoring purposes. The sample is intended to be analysed for occurrences of drug substances in individuals, for diagnostic purposes.

Instructions (short)

Remove both caps and breathe into the oval mouthpiece 10-12 times. Use the following breathing manoeuvre: breathe out to empty the lungs (1). Hold breath on empty lungs for three seconds (2). Breathe in (3) and then breathe out through the device for eight seconds (4). Remove the device from the mouth before inhaling (5). Take breaks as necessary.

Once sampling is complete, put the caps back on and place the device in a protective bag in a fridge until the sample is sent off for analysis. The sample should be sent to the laboratory as soon as possible.

Please visit our website **www.breathexplor.com** for complete instructions and more information about the sampling device.

Consumables

Breath Explor Vial

The Breath Explor Vial is designed specifically for the preparation and analysis of samples collected with the Breath Explor Sampling Device. They fit all Breath Explor tools. One vial holds one collector.

For the analysis of Breath Explor samples, the BE vials replace traditional glass vials.

The vials have fins both at the bottom of the well and on the underside. The fins inside the vial make sure that the collector can be thoroughly rinsed during vortexing. The fins on the underside lock the vials in place in the tools and accessories.

The lid can be penetrated by a LC/MS needle-in-needle system.

The material is medical grade polypropylene copolymer (PPC).

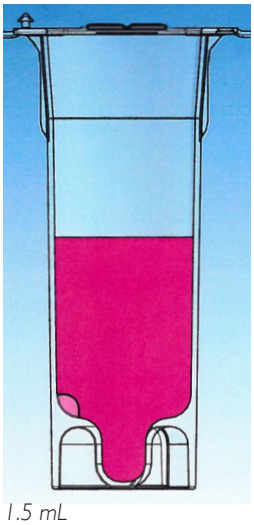
Medical grade PPC | For sampe preparation and analysis | Compatible with all BE tools and accessories

Specifications
• Medical grade polypropylene copolymer (PPC)
• Height: 39.5 mm
• Outer circumference: ~37.3-42.7 mm
• Max volume, lid closed: 2.25 mL
• BE method volumes: 1.5 mL, 50 µL
• LC/MS compatible
• Fits all BE tools and accessories
• Recyclable as plastic
• Shelf life 2 years

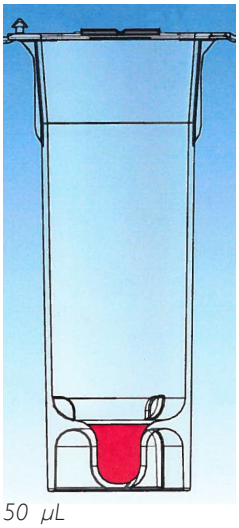
User information
• For single use only
• For professional use only

Intended use
The intended use of the Breath Explor vial is to hold collectors and samples during laboratory preparation and analysis of Breath Explor samples. The vials are used during both manual and robot automated sample preparation.

Instructions
When placing the vials into any of the tools or accessories, rotate them to make them lock into position.



1.5 mL



50 µL

Breath Explor PickPoke Stick

The Breath Explor PickPoke Stick is a tool designed to aid the disassembly of Breath Explor Sampling Devices and for retrieving collectors from the Breath Explor Vials.

The long end is for poking the collectors out of the collector unit inside the Breath Explor Sampling Device and into the vial. The round, holed end is used for picking up the collector from a vial and for performing the recovery manoeuvre.

The PickPoke stick is used both in manual preparation and robot automated preparation of Breath Explor samples.

The material is medical grade polypropylene copolymer (PPC).

Medical grade PPC | Manual sample preparation | Robot automated sample preparation

Specifications
• Medical grade polypropylene copolymer (PPC)
• Height: 60 mm
• Width: 41.5 mm
• For manual and robot automated sample preparation
• Recycled as plastic at the manufacturer
• Shelf life 2 years

User information
• For single use only
• For professional use only

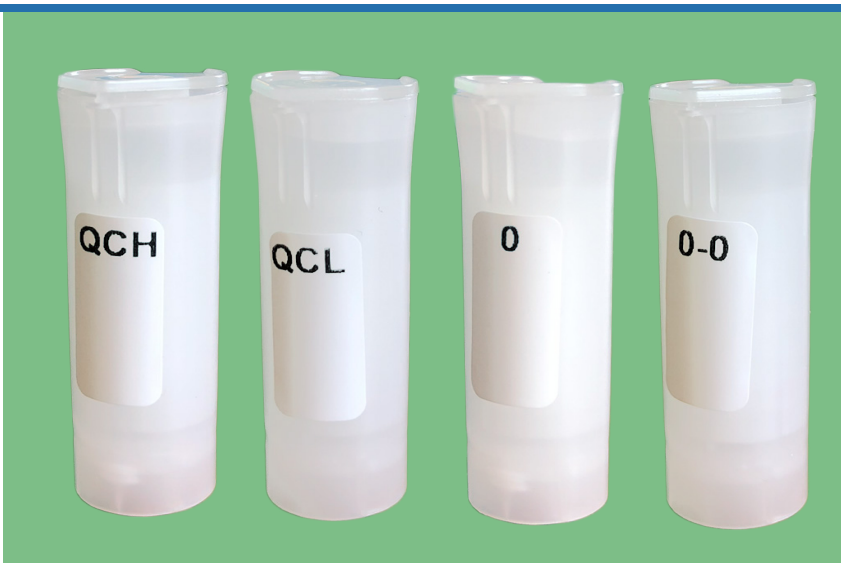
Intended use
The intended use of the Breath Explor PickPoke stick is aiding laboratory sample preparation of Breath Explor samples. The PickPoke stick is used both with the manual tool and as a component of the robot automation.

Instructions
Hold the PickPoke stick at either of the two ribbed short ends opposite the pick and poke ends.

Breath Explor QCs for LC/MS

The Breath Explor Quality Controls (QCs) are ready labelled BE Vials for QC mixtures prepared at the laboratory. They come as QC High, QC Low, 0 and 0-0.

The material is medical grade polypropylene copolymer (PPC). The labels are suited for freezer storage down to -80°C.



For LC/MS | Medical grade PPC | QC Low, QC High, 0 and 0-0 | Compatible with all BE accessories

Specifications
• Medical grade polypropylene copolymer (PPC)
• Height: 39.5 mm
• Outer circumference: 37.3-42.7 mm
• Max volume, lid closed: 2.25 mL
• LC/MS compatible
• BE method volumes: 1.5 mL, 50 µL
• Label glue appropriate for freezer storage at -80°C
• Fits all BE tools and accessories
• Shelf life 2 years
• Recyclable as plastic

User information
• For single use only
• For professional use only
• The vials are delivered blank. The QC solutions are prepared by the laboratory.

Intended use
The intended use of the Breath Explor QCs are to act as vials for the QCs run together with Breath Explor samples during analysis. With every batch of 28 Breath Explor samples, four QCs should be run.

Instructions
When placing the vials into any of the accessories, rotate them to make them lock into position. During robot automated sample preparation, the QCs are placed in the designated QC holder.

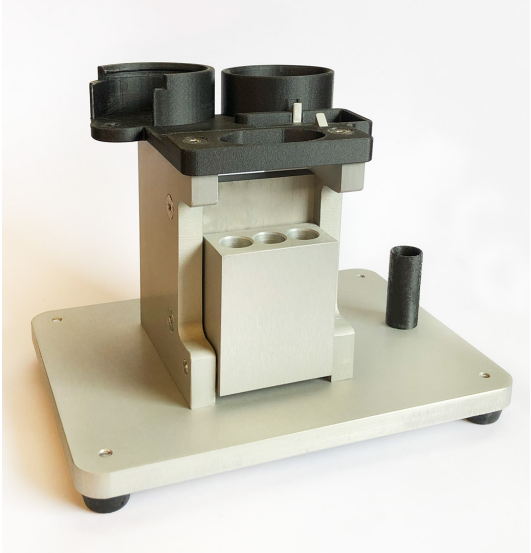
Manual Tool

Breath Explor Manual Tool

The Breath Explor Manual Tool is a space-efficient and comprehensive tool for manual disassembly and reassembly of Breath Explor Sampling Devices.

The tool has room for one device and three vials at a time. The part of the tool holding the vials can be tipped forward for easy access. There is one additional vial holder (black tube, right) for adding eluent to the collector.

The tool is made of aluminium and carbon-fibre-reinforced PA6 and stands on rubber feet. Methanol should be used for cleaning the tool.



Simple disassembly | Space efficient | Simple elution and collector removal

Specifications
• Height: 147 mm
• Width: 190 mm
• Depth: 141 mm
• Weight: 1560 g
• Capacity: one device and three vials at a time
• Aluminium and carbon-fibre-reinforced polyamide 6
• Clean with methanol as often as necessary

User information
• For professional use only
• Do not use cleaning agents containing chlorine

Intended use
The Breath Explor Manual Tool is intended for manual disassembly of the Breath Explor Sampling Device for sample preparation in a laboratory.

Instructions (short)
The left black holder removes the large oval lid from the device. The metal pegs (right) help remove the body of the device, which is placed in the right black holder for storage. The collector unit is placed upside down in the oval hole (front, centre). Empty vials are placed in the three small holes beneath the collector unit. The collectors are pushed out of the collector unit and into the vials using a PickPoke stick. The vials are then moved one by one to the black vial holder (right) for elution and removal of the collector. Please visit our website **www.breathexplor.com** for a video demonstration of the Breath Explor Manual Tool.

Accessories

Breath Explor LC/MS and Mixing Tray

The Breath Explor LC/MS and Mixing Tray is a custom made tray for BE vials. It is leightweight yet sturdy, making it suitable both for mixing and for analysis in an LC/MS.

The tray has room for 32 BE vials. The bottom of each hole is made fit with the fins at the bottom of each vial, making them interlock at a 45° angle.

It is made from aluminium, which is resistant to all types of cleaning agents. We recommend using methanol to clean the tray.

The tray is compatible with the Eppendorf MixMate® and Waters Xevo TQ-XS.

Lightweight | Custom interlocking system | Compatible with Eppendorf MixMate® and Waters Xevo TQ-XS

Specifications
• Height: 18 mm
• Width: 128 mm
• Depth: 86 mm
• Weight: 205 g
• 32 vials
• Aluminium
• Compatible with Eppendorf MixMate®
• Compatible with Waters Xevo TQ-XS
• Clean with methanol

User information
• For professional use only

Intended use
The Breath Explor LC/MS and Mixing Tray is intended to hold BE vials during mixing in an Eppendorf MixMate and LC/MS analysis in a Waters Xevo TQ-XS system.

Instructions (short)
Place the vials in the tray and rotate until they lock in at a 45° angle. Place the tray in either the mixer or LC/MS.

Breath Explor Mixing Lid

The Breath Explor Mixing Lid holds the vials in place in the Breath Explor LC/MS and Mixing Tray during mixing. The lid is very lightweight and easy to use.

The materials are stainless steel and plastic, allowing for thorough cleaning after each use. We recommend using methanol.

Lightweight | Easy to use | Secure mixing | Compatible with Eppendorf MixMate®

Specifications
• Height: 35 mm
• Width: 128 mm
• Depth: 85 mm
• Weight: 32 g
• 32 vials
• Stainless steel and polyamide 6
• Compatible with Breath Explor Mixing Tray
• Compatible with Eppendorf MixMate®
• Use at maximum 2000 rpm
• Clean with methanol

User information
• For professional use only
• Do not use cleaning agents containing chlorine

Intended use
The Breath Explor Mixing Lid is intended to be used together with the Breath Explor LC/MS and Mixing Tray, on an Eppendorf MixMate, to hold vials in place during mixing at 2000 rpm maximum.

Instructions (short)
Press down on the red button to release the springs. Place the lid over the vials and push the rod down to lock it into the tray. Press down on the red buttons to release the rod again and remove the lid.

Breath Explor Sample Tray

The Breath Explor Sample Tray is a custom tray intended to hold Breath Explor Sampling Devices.

The tray fits into the robot automated sample preparation, but can be used also for manual handling and storage of the Breath Explor Sampling Devices.

With 28 laser-numbered holes and a robust handle, the tray makes organisation of sampling devices simple.

The tray is made of aluminium and stainless steel and stands on rubber feet. We recommend cleaning it with methanol.

Easy organisation | Laser-numbered holes | Space for 28 sampling devices

Specifications
• Height: 21 mm
• Width: 332 mm
• Depth: 176 mm
• Weight: 977 g
• Capacity: 28 BE Sampling Devices
• Aluminium and stainless steel
• Clean with methanol

User information
• For professional use only

Intended use
The Breath Explor Sample Tray is intended to hold Breath Explor Sampling Devices during manual and robot automated sample preparation.

Instructions (short)
Place the Breath Explor Sampling Devices large oval opening down in the tray.

Breath Explor Centrifuge Rotor inc. Vial Holders

The Breath Explor Centrifuge Rotor is a custom centrifuge rotor for Breath Explor sample preparation, compatible with the Eppendorf Concentrator plus.

The rotor holds 32 BE vials (28 samples and 4 QCs). The design optimises the use of the centrifugal force, ensuring that all BE vials are prepared evenly.

The vial holders are removable and marked with arrows to indicate the direction of rotation. The holes for the BE vials are designed so that the vials can only be placed the right way around.

The rotor and the vial holders are all made of aluminium and are easily cleaned using methanol.

Optimised centrifuging | Custom BE vial holders | Easy clean | Compatible with Eppendorf Concentrator plus

Specifications
• Height: 70 mm
• Width: 222 mm
• Depth: 222 mm
• Weight: 1125 g
• Capacity: 32 vials (28 samples and 4 QCs)
• Aluminium
• Compatible with Eppendorf Concentrator plus
• Clean with methanol

User information
• For professional use only

Intended use
The Breath Explor Centrifuge Rotor is intended to be used in an Eppendorf Concentrator plus centrifuge, instead of the standard rotor, specifically to centrifuge BE vials.

Instructions (short)
The Breath Explor Centrifuge Rotor is installed in the centifuge the same way a standard rotor would be. Turn the vials in the vial holders until they click in place. Observe the direction of the arrows on the vial holder when placing them in the rotor.

Robot automation

BE Robot Automation 2.0 and 3.0

Breath Explor's Robot Automation 2.0 and 3.0 are turnkey solutions for precise and efficient preparation of Breath Explor samples.

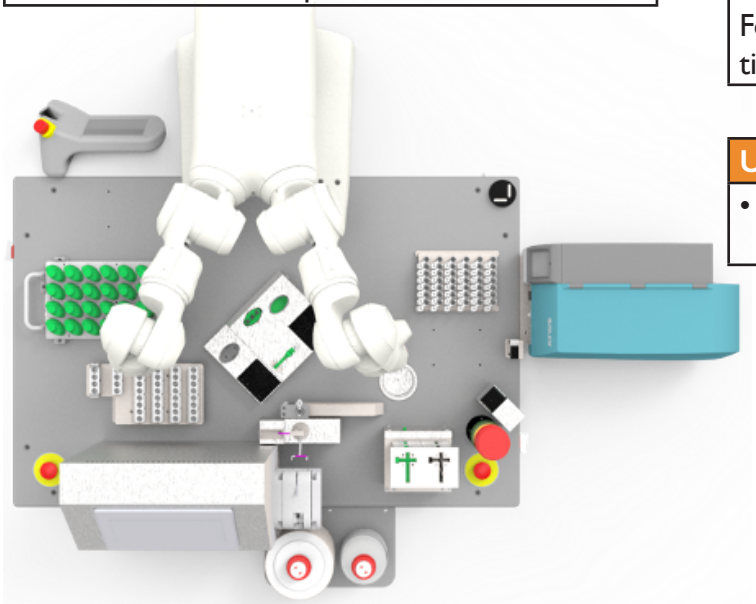
The sample preparation robot carries out all preparation steps, from disassembly of the sampling device to placing the ready samples in vial holders, ready for centrifugation.

The preparation of one sample takes **less than 60 seconds.**

The sample preparation robot consists of, among other things, an ABB YuMi® collaborative robot (pictured), a customised label printer, a high-precision scale, a label reader, an internal standard cooler and pump, a disassembly unit, and holders for BE Sampling Devices and vials (including QCs).

Sample prepaired in under 60 seconds | Precise | Efficient | Industrial quality automation

Specifications
• Height: 1350 mm
• Width: 1600 mm
• Depth: 1300 mm
• Weight: 215 kg
• Capacity: 1 sample per minute
• Noise level: <70 dB(A)
• For preparation of Breath Explor samples
• Voltage: 230 VAC
• Frequency: 50 Hz
• Power: Max 2300 W
• Fuse: Min 10 A
• Pneutmatics, max air pressure: 8 bar
• Peumatics, min air pressure: 6 bar



Intended use
The sample preparation robot shall be used for the preparation of breath samples collected with the Breath Explor Sampling Device. The internal standard which should be used is described in the method's SOP. The robot shall only be handled by laboratory personnel trained by Breath Explor.

Instructions (short)
The robot is operated from a user-friendly HMI on the side of the robot. The consumables and samples need to be refilled by the operator after each batch. Full instructions can be found in the user manual. For a video demonstration of the sample preparation robot, please visit www.breathexplor.com.

User information
• For professional use only, after training by Breath Explor

It’s simply breathtaking

Breath Explor®
Munkplast AB
Hållnäsgatan 6
752 28 Uppsala
SWEDEN

www.breathexplor.com
info@breathexplor.com

ver: 07-05-2024