

## Frequently Asked Questions

### ABOUT RHINOSTICS

COVID-19 cast light on the urgent need to improve laboratory workflows. RhinoStics was born to meet the moment. Our united mission is to revolutionize laboratory workflows, one purpose-built collection device at a time. We improve sample collection comfort and performance while bringing efficiencies to the laboratory to remove costs and save time compared to traditional sample collection intake.



Our groundbreaking technologies include functional design, novel materials, and automation solutions for removing caps and rapid accessioning for hands-free workflows. This enables robust high-throughput assays from start to finish with minimal human intervention, saving time and reducing costs.

### Who is RhinoStics?

An early-stage company revolutionizing the world of sample collection with purpose-built devices. Read more [here](#).

### What products does RhinoStics currently offer?

**RHINOstic® Automated Swab** which can be used to collect a variety of biological samples (self-collected or medically collected) for laboratory or home-use tests. The swab has an integrated cap which allows it to be used in automated workflows using decappers and liquid handlers in the laboratory. Videos of the automated workflow can be found [here](#).

**RhinoStics® Standard Swab** which can be used to collect nasal samples (self-collected or medically collected) for laboratory or home-use tests. This swab is designed for labs with a lower daily through-put or which do not use laboratory automation.

**RhinoStics GrooveSwab® Nasopharyngeal Swab** utilizes the design advantages of the stacked-ring, “honey-dipper” head for nasopharyngeal collection, providing more comfortable collection than flocked swabs, faster elution, and increased assay sensitivity. A video showing rapid elution is found [here](#) and performance data is found [here](#).

**VERIstic™** is a novel capillary collection device for microsampling or other applications requiring small amounts of whole blood from medically-collected or patient-collected samples, some of which are typically collected as dried blood spots on a card. This novel three-sided capillary device has an integrated cap which allows for lab automation to hands-free elute the sample and bring the sample into automated assay workflows.

## What products are in the development pipeline at Rhinostics?

**HIPPOstic™** collection device for buccal, wound, pox, sore, dermatological, and tissue collection that provides reliable DNA collection from cellular or tissues samples.

**ELEstic™ Automated Swab** will bring the same benefits as the smaller format RHINOstic® in a design to fit larger tube formats (76mm height x 13mm diameter) to enter closed systems such as Abbott, Roche, Hologic workflows.

At Rhinostics, we are continually looking to introduce new, innovative collection devices, so stay tuned for more information. Follow our [LinkedIn](#) page or subscribe to our email list for updates!

## Do the products require automation?

All of Rhinostics' products can be used manually. The **Rhinostics® Standard Swab** and **GrooveSwab®** facilitate manual workflows while the **RHINOstic® Automated Swabs** and **VERIstics™** can be used manually, with handheld decappers, and with fully robotic, handsfree decappers. The advantages for manual workflows are the comfortable and improved collection, sample concentration, **more rapid elution**, clean sample with no fibers or inhibitors, and the possibility to remove extraction from the workflow.

## How are Rhinostics products made?

All Rhinostics collection devices are made with medical-grade polypropylene using injection mold production lines. This simple and rapid manufacturing in production lines location in the USA reduces supply chain concerns; the injection mold process allows for easy scale-up of manufacturing to address increased demand.

## Where are Rhinostics products made?

The majority of the Rhinostics' products are made in the USA, except for the **GrooveSwab® Nasopharyngeal Swab**, which is currently manufactured in China.

## What is the availability of Rhinostics products?

Rhinostics products are readily available. We hold significant inventory and can scale rapidly to manufacture millions of parts per month. The injection mold manufacturing process allows Rhinostics to scale up manufacturing according to demand.

## Are your products sold directly or through re-sellers?

We sell our products directly and through partner distributors domestically and on a global basis. Feel free to contact us at [sales@rhinostics.com](mailto:sales@rhinostics.com) or view our website [here](#) for more information. Contact us for more details on how to get a quote and order products.

## Can I place an order online?

We do not currently have a webstore, but please contact us at [sales@rhinostics.com](mailto:sales@rhinostics.com) for quotes or assistance.

## Is any special equipment required to use Rhinostics products?

The swabs and other collection devices themselves do not require any special equipment. However, to take full advantage of the purpose-built, automation-capable design, either a hand-held or robotic decapper is required and for rapid accessioning, a standard plate reader can be purchased. There are several options available for decapping and accessioning from our partners or through Rhinostics. Talk to your sales representative for more details.

## How does the RHINOstic® Automated Swab work?

The **RHINOstic® Automated Swab** can be used by a medical professional or by the patient to collect a sample. In many cases this is a nasal sample but the swabs can be used for collecting a broad range of biological samples. After collection, the swab is screwed into the transportation tube and sent dry to the testing laboratory. The laboratory places the swabs/tubes into a 96-well SBS-format rack, where all samples can be accessioned at once with a flatbed reader and then placed into an automated liquid handling system containing a decapping instrument. The samples enter the handsfree workflow, where the swabs are decapped, samples eluted, and then transferred to 96 or 384 well assay plates.

## How can my laboratory save money and time with the RHINOstic® Automated Swab workflow?

Using automated swabs reduces the numbers of laboratory personnel necessary to run these workflows by over 80%, where headcount can be focused on managing and overseeing robotic operations and opening sample bags and accessioning samples rather than large numbers of staff manually decapping and side-accessioning swab samples. The same sized staff can manage the sample workflow, whether the baseline is 1,000 samples per day or climbs to 15,000 per day, moving the costs from fixed to variable and helping laboratories manage the peaks and troughs of COVID-19 and other swab testing volumes. Please find the [Return on Investment Calculator](#) found on our website to calculate how soon your laboratory can show a return on bringing these workflows into your laboratories.

## With which sample types is the RHINOstic® Automated Swab compatible?

Millions of patients and university students, staff, and visitors have been tested with our automated swabs for nasal sample collection for COVID-19. Additionally, the swabs can be used for broad applications for collecting biological samples including vaginal, penile, wound, poxes, sores, buccal, and other applications. In the future, we are launching devices purpose-built for blood, buccal, wound, pox, throat, cervical and other sample types in the coming months and year.

## With which assays/tests is the RHINOstic® Automated Swab compatible?

**RHINOstic® Automated Swabs** can be used with a wide variety of assays and laboratory tests when validated in a CLIA high complexity laboratory or for use with a point of care device. Talk to your Rhinostics sales representative for more information.

## Is extraction necessary when using a RHINOstic® Automated Swab?

For most molecular tests, extraction may not be necessary as molecular assays are optimized for smaller and smaller starting amounts of DNA or RNA. Additionally, because the **RHINOstic® Automated Swab** is transported dry and without viral transport media, there is no need to wash away contaminants or to concentrate the sample. Speak to your sales representative for more information.

## Why does the RHINOstic® Automated Swab not use VTM/UTM (virus or universal transport media)?

The original purpose of VTM was to stabilize and feed a virus during transport so it could be grown in a lab since most diagnostic testing was done through culture. With the advent of molecular and protein end-point assays, growing and feeding virus is not required for this testing. The chemicals used in VTM can be inhibitory to molecular assays. The large volumes of VTM used can over-dilute the sample, where a more concentrated sample can improve the limit of detection (LOD) of an assay. These chemicals and/or volumes can mean that a lab has to concentrate, wash, or extract a sample before the molecular or protein assay can be performed. Finally, dry shipment prevents sample leakage and loss of samples as well as the danger of exposure of leaked virus during transport.

## How long are samples stable during dry transport?

In clinical studies, Rhinostics and partner laboratories have validated 72 hours of stability for COVID-19 virus particles. Several peer-reviewed articles and Emergency Use Authorizations can be found [here](#). In practical experience, laboratories have found that COVID-19 samples taken with our swabs are stable at room temperature, refrigerated or in the freezer for much longer time frames with little reduction in CT values. For buccal samples collected with the swabs, high quality DNA that can be sequenced by next generation sequencing can be recovered at least three months after collection, when stored at ambient temperature.

## What solutions can be used to elute from RHINOstic® Automated Swabs?

The dry swabs can be eluted into any standard buffer (PBS, saline, other) or directly into the assay buffer to save workflow steps.

## Which decappers are compatible with RHINOstic® Automated Swabs?

Currently, there are three fully-automated decappers that work with Rhinostics automated devices and several hand-held decappers. Rhinostics has partnered with Hamilton Storage and their **LabElite Decapper**, and Azenia Life Sciences and their **IntelliXcap Decapper/Recapper**. Additionally, Rhinostics recently launched its own **RHINObot™ 96-well Decapper** that is compatible with many liquid handlers available in the market. Other partnerships are in process, stay tuned for more details.

## Which liquid handling instruments are compatible with RHINOstic® Automated Swabs?

Rhinostics' automated sample collection devices can easily be incorporated into many existing automated liquid handling workflows using Hamilton, Tecan, and other automated liquid handling platforms.

## What are the advantages of using RHINOstic® Automated Swabs?

There are a multitude of advantages from switching to the **RHINOstic® Automated Swabs**:

1. More comfortable and easy nasal collection for patients in the home and medical office.
2. Dry shipment from patient to the testing laboratory means no lost samples due to leakage. One of the highest costs for providers or laboratories is recollecting patient samples.
3. Greater safety as virus dies on swabs in roughly 4 hours and won't expose shippers or lab personnel due to VTM leakage.
4. More concentrated, clean samples versus those with VTM/UTM inhibitors or flocking contamination from traditional swabs.
5. Reduction of manual handling and accessioning of samples arriving in the lab and ability to set up hands-free assay workflows from start to finish, which can reduce labor cost by more than 80%.
6. Removing manual steps and moving to robotics improves accuracy and reproducibility, reducing human error.
7. Moving costs from fixed labor to variable costs as samples ebb and flow, where the same reasonable level of staff can manage.

## What are the advantages of using Rhinostics GrooveSwab® Nasopharyngeal Swabs?

There are many advantages from switching to the **GrooveSwab® Nasopharyngeal Swabs**:

1. The **GrooveSwab®** was able to identify positive COVID-19 samples as viral titers dropped in clinically diagnosed and previously tested positive patients versus flocked nasopharyngeal swabs.
2. More comfortable nasopharyngeal collection due to smaller diameter and lack of tearing of sensitive tissue from flocking found on tradition swabs. Physicians and patients strongly prefer collection with the **GrooveSwab®**.

3. Dry shipment from patient to the testing laboratory means no lost samples due to leakage. One of the highest costs for providers or laboratories is recollecting patient samples.
4. Greater safety as virus dies on swabs in roughly 4 hours and won't expose shippers or lab personnel due to VTM leakage.
5. More concentrated, clean samples with VTM/UTM inhibitors or flocking contamination from traditional swabs.

## What are the advantages of using VERIstic™ blood collection device?

There are a large number of advantages from switching to the **VERIstic™ Automated Swabs**:

1. Easy collection with tried and true capillary format for patient-centric home collection or in the medical office.
2. Dry shipment from patient to the testing laboratory means no lost samples due to leakage. Blood quickly dries in the capillary for rapid elution from the three-sided capillary when it reaches the laboratory.
3. Cleaner samples free from paper fibers from dried blood spot (DBS) cards, and much easier to automate.
4. Reduction of manual handling, hole-punching or removing sample from other collection device formats, and rapid accessioning of samples arriving in the lab and ability to set up hands-free assay workflows from start to finish.
5. Removing manual steps and moving to robotics improves accuracy and reproducibility, reducing human error.

## How is a blood sample collected with the VERIstic™ device?

After a simple lancet to the fingertip, blood is milked into a bubble of 3-5mm in diameter. The **VERIstic™** capillary is placed against the blood bubble using gravity to fill the capillary device. It typically takes approximately 4-5 blood bubbles to fill the device fully. The capillary with its integrated cap is screwed into the transportation tube and shipped dry to the laboratory for testing. The blood quickly dries in the capillary and the bottom of the tube. When it arrives in the laboratory, the sample can be accessioned in through a flat-bed reader and then automatically decapped for the addition of elution buffer. The samples are agitated to fully elute the blood from the three-sided capillary into assay buffer and then continue forward in the hands-free workflow.

## Does the blood dry in the VERIstic™ following collection?

After collection, the capillary with its integrated cap is screwed into the transportation tube. The blood quickly dries in the capillary and the bottom of the tube for transport.

## How much blood does the VERIstic™ collect?

When filled completely, the **VERIstic™** collection device collects 52 ul of whole blood.

## Are separations of blood fractions possible on the VERIstic™?

The current format of the **VERIstic™** is limited to collecting and transporting microsamples of whole blood. Future products in development will include capillaries with coatings such as heparin, EDTA and others to stabilize and separate blood fractions.

**At Rhinostics, we are continually looking to introduce new, innovative collection devices, so stay tuned for more information. Follow our [LinkedIn](#) page or subscribe to our email list for updates!**