Infection Control, Cleaning and Disinfecting

Intoximeters Desktop Instruments

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INTOXIMETERS INC.'S MISSION

To ensure that the products it sells are safe and effective, Intoximeters, Inc. relies upon all of its knowledge to provide innovative design and quality products. Intoximeters has been a leader in providing the safest breath alcohol instruments available. These products are supported by up to date operating and maintenance procedures. As new information is made available, Intoximeters, Inc. updates its recommendations on the proper use and maintenance of its products. These updates are published and available on its website (www.intox.com)

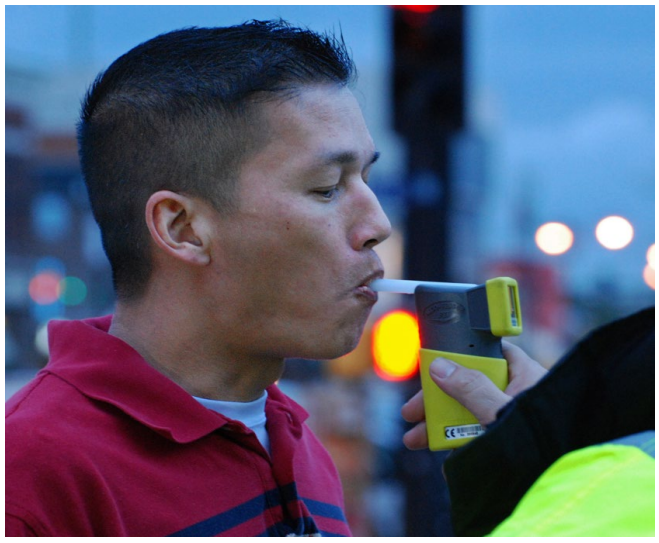
At the time of this update the threat of the Novel Coronavirus SARS-CoV-2 (the cause of COVID-19) has motivated Intoximeters, Inc. to re-assess its recommendations for proper use and maintenance of the instruments it manufactures and sells. COVID-19 is reported to be a viral disease that is often passed though airborne droplets of fluid from an infected person to another.

Intoximeters does not claim to be experts on infectious diseases and would urge its customers to seek additional direction from the proper government agencies or medical experts for questions related to the transmission of any disease (see Additional References section at the end of this document). There are, however, several commonsense steps that can be taken to reduce the likelihood of disease transmission when using a breath alcohol measurement device.

In this document, Intoximeters has set forth some general guidelines to consider for how to use, clean and disinfect the Intoximeters brand desktop breath alcohol testing instruments.

Some of the suggestions in this document may conflict with information provided in manuals and other documentation previously provided by Intoximeters, Inc. Our intent is to provide the latest information available and provide recommendations for safe use of the products that we manufacture and sell. You may choose to consider this information when developing the guidelines for your program.

This document is intended to help Intoximeters' users build their procedures for cleaning and/or disinfecting their Intoximeters, Inc. desktop instruments.



STEPS TO REDUCE DISEASE TRANSMISSION DURING A BREATH ALCOHOL TEST

All protocols and procedures should consider how to minimize the possibility that a subject can contract a disease in the process of providing a breath sample to a breath alcohol testing instrument. It is assumed that disease transmission could occur from an infectious microbe that was deposited on, or in the instrument from a prior subject, an operator or anyone else that has had contact with the device.

The protocol should also consider what can be done to reduce the likelihood that the operator or other handler of the instrument is exposed to an infectious disease from the subject directly, the mouthpiece, or from the instrument.

The following are methods that could be instituted to address some or all of these concerns:

- do not perform test on subjects you suspect may be sick or infectious
- use an instrument and/or mouthpiece with a one-way check valve in it to reduce the possibility of the subject sucking infectious material out of the instrument.
- using a barrier filtered mouthpiece to trap germs before they reach the instrument (See TestSafe™ Mouthpiece.)

Other lines of defense for the operator:

- Use protective gear when testing
  - New disposable gloves worn by the operator or maintenance technician for:
    - each subject
    - handling the mouthpiece
    - keeping microbes from being transferred to the instrument or mouthpiece by the operator
    - If you have used a hand sanitizer before placing the gloves on, and that sanitizer has alcohol in it, wait fifteen minutes after the sanitizer has dried in order to ensure that the evaporated alcohol from the sanitizer has dissipated.
- Consider the use of a respirator to protect against airborne pathogens.
- Operate the instrument in a manner that the subject and operator are least exposed to possible disease transmission during the testing process.
  - Attaching a new clean mouthpiece for each subject

- Understand where the breath exits the instrument and position the subject, instrument and operator in a manner that the subject's breath flow is directed away from the operator.
- Remove (with disposable gloves) and dispose of the mouthpiece after each subject test sequence.

•Take proper care to inspect, clean and/or disinfect the instruments

- Follow the directions for proper use of the cleaning product.
- If the disinfecting substance used has alcohol in it make sure the areas that you cleaned or disinfected are dry and there has been adequate time for evaporated alcohol to dissipate before testing the next subject. Waiting fifteen minutes after the cleaner has dried will ensure that all volatilized alcohol has dissipated.

• Wash hands after subject testing, handling of contaminated mouthpieces or contaminated instruments.

THE DIFFERENCE BETWEEN CLEANING AND DISINFECTING

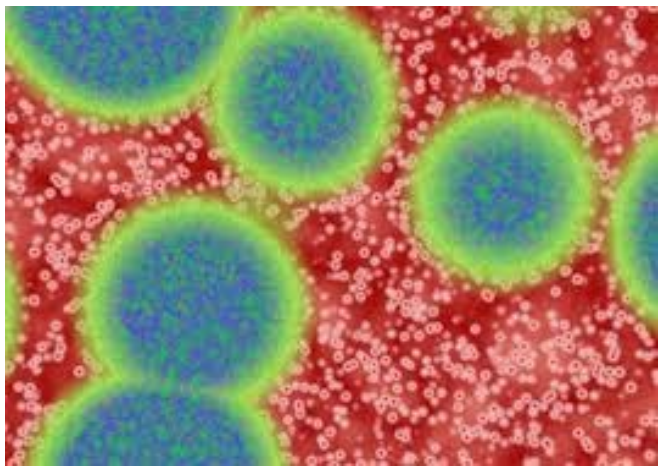
The term **"cleaning"** relates to the removal of visible particulate contamination. This may be as simple as wiping over surfaces but may involve washing and mechanically removing surface particulates. Cleaning does not kill germs, but is intended to remove them to lower the risk of disease transmission.

Once the item has been cleaned, some or all parts of the breath alcohol testing instrument may require disinfection. **"Disinfection"** is the act of applying a process to reduce the survival rate of micro-organisms on a surface. The disinfection is commonly done by using a disinfecting solution or exposing the micro-organisms to an energy source to kill the germs.

A user should strongly consider having a plan in place for cleaning and disinfecting breath alcohol testing instruments. The plan might include a risk assessment and a list of requirements for when cleaning and disinfecting are necessary.

The plan might suggest:

- When general cleaning and disinfection should occur.
- What type of events require cleaning and what type of events require disinfecting.
- How to handle devices that are believed to have been contaminated.
- What products will be used to clean and to disinfect
- The procedures for cleaning and/or disinfecting
- What gear (protective equipment) is needed to be used by the person providing the maintenance
- Practices for the person providing the maintenance to follow to reduce the likelihood of disease transmission.



THE RISK OF BREATH ALCOHOL INSTRUMENT CONTAMINATION

To date, cross-infection from Breath Alcohol Testing instruments has not been reported. However, reasonable steps should be taken to reduce the likelihood that it may occur.

An obvious potential cause for disease transmission would be if an operator failed to replace the disposable mouthpiece after a subject had completed his/her test. **New, clean mouthpieces should be used on each subject tested.**

Cross-infection via direct contact through the transfer of breath condensate, saliva and other body fluids introduce the highest risks facing the subject and operator.

Body fluids and other biological matter can be excreted through the lungs, particularly during a forced expiration, coughing or sneezing. These particles are carried by aerosolized droplets which then may be deposited in the mouthpiece or on the instrument that the subject is providing the breath sample to.

The amount of aerosolized material that will be deposited in the mouthpiece or instrument will be inversely proportional to the distance traveled from the mouth. The greatest amount of deposited material will be close to the mouth and what is deposited will lessen the further it travels away from the mouth. For this reason, the removal of the mouthpiece will eliminate the vast majority of, if not all of the deposited material.

With instruments where the breath flow is directed through the instrument, it is recommended that either or both a barrier filtered mouthpiece is used to trap germs before they reach the instrument or a delay of at least five minutes be allowed between test subjects. It has been shown by Hierbert, et. al (Hierbert T, Miles J & Okeson G C; Contaminated aerosol recovery from pulmonary function testing equipment. Am J Respir Critical Care Med Vol 159. pp 610-612, 1999) that this is the safety margin required to allow aerosolized organisms to be removed from a vapor state by gravitational sedimentation and condensation. Infectious microbes in a solid state are less mobile than in an aerosolized state; making cross infection less likely.

DOES ISOLATING AN INSTRUMENT FOR A PERIOD OF TIME ENSURE THAT THE INFECTING MICRO-ORGANISMS ARE NO LONGER ACTIVE?

Bacteria and viruses have a limited life span outside of the body. They tend to last longer on non-porous surfaces than porous ones. They tend to last shorter periods of time in low humidity environments and they can be disabled if they are exposed to certain chemicals or radiated energy.

While different bacteria or viruses can survive for different lengths of time, most will become inactive within several days, once outside the body, but there are some, like the MRSA bacteria or Norovirus that can remain active for several weeks outside the body.

Early work out of Rocky Mountain Laboratories in Montana (part of National Institute of Health) indicate that the Novel Coronavirus SARS-CoV-2 has life expectancies outside of the body similar to earlier studies SARS viruses. Other early studies suggest that the virus can remain viable in aerosols for multiple hours and on surfaces for up to a few days. (see Additional Reference link to article, Aerosol and surface stability of HCoV-19 (SARS-CoV-2) compared to SARS-CoV-1.) The length of time is often dependent upon if the virus was deposited in a large or small droplet of water, what type of surface it was deposited on, the temperature and humidity of the environment, and how much ultra-violet light it was exposed to.

The fact is that time can be used as a strategy to eliminate the risk of transmission, but using it as the only line of defense means that you would have to have a great deal of knowledge about all of the infecting microbes that you are trying to eradicate and you would likely need a minimum amount of time where the instrument would need to be isolated.

We suggest that time can be used as part of the solution, but using it as the sole prophylactic is not practical in most cases so use of an effective barrier filtered mouthpiece and/or actively cleaning and/or disinfecting the instrument will often need to be the backbone of a program.

USER'S ROLE

Test Protocol

It is the responsibility of the user to determine the test protocols and procedures for their breath testing program.

In order to develop an effective plan for cleaning and disinfecting, it is important to understand how contamination most frequently occurs.

There are three main paths for contamination:

1. breathing aerosolized particles,
    a. The subject could suck aerosolized particles in from a previously contaminated instrument or part.
    b. The instrument operator could be infected from an infected subject.
    c. The subject could be infected from an infected operator.
2. skin contact with breath condensate particles coming directly from the breath sample.
    a. The instrument operator could have this condensate on them which could be transferred to another person allowing them to be infected or it could cause an infection of the operator if they touch their nose, mouth or eyes with the infected substance.
3. skin contact with saliva or other bodily fluids deposited on the instrument or expectorated directly onto the operator
    a. The instrument operator could transfer the infected substance to another person allowing them to be infect themselves or it could cause an infection of the operator if they touch their nose, mouth or eyes with the infected substance.

A few good practices to follow:

- Check the instrument to make sure it is clean before testing a subject
- Wear clean disposable gloves for each subject. This will reduce the likelihood of:
    - the operator infecting the instrument or mouthpiece, thus exposing the subject to infection
    - the subject infecting the operator by transferring infectious material onto the operator's hands during breath sampling or mouthpiece removal which can then be transferred into the operator's mouth, eyes or other pathways that can result in infection.

- Position the subject so that when the sample is provided, the breath flow is directed away from the operator. During the test, make sure you have good ventilation in the space that you are performing the test.

- Change the mouthpiece for each subject test sequence

    - Researchers (such as A.H. Kendrick) who have studied pulmonary testing equipment have found that the deposition of breath matter is directly proportional to the distance from the mouth, i.e., most deposition occurs within a few centimeters of the mouth with corresponding decrease of deposition further away from the mouth. If we apply these findings to breath alcohol testing it is assumed that a high proportion of deposition occurs within the mouthpiece as well as the major risk of the saliva on the outside of the mouthpiece.

    - the greatest danger of cross-infection is via direct contact with bodily fluids and the mouthpiece is the most likely place for residual fluids to exist after a breath sample has been provided.

    - the design of the mouthpiece can further reduce the likelihood for disease transmission. Your instrument may have more than one type of mouthpiece that can be used with the instrument. If your instrument design allows, consider:

        - a mouthpiece that makes up as much of the sampling chamber as is possible.

        - a mouthpiece that has a barrier filter in it to trap germs from the breath sample.

        - a mouthpiece that has a check valve so that reverse flow (suck back) from instruments with internally contaminated surfaces is not possible; and

        - a mouthpiece or instrument design that directs the breath flow away from the operator.

        - a mouthpiece that easily removed, reducing the chance of contact with saliva or breath condensate.

    - Instruct the subject to avoid touching the instrument; if possible. To reduce the possibility of disease transmission, clean or disinfect the parts of the instrument that the subject touched during a test sequence before subsequent subject testing.

    - Make sure the instrument is clean and ready for use after testing a subject.

With instruments where the breath flows through the instrument, and reverse flow is a concern, a delay of at least five minutes between testing subjects might be considered since it has been shown by Hierbert, et. al (Hierbert T, Miles J & Okeson G C; Contaminated aerosol recovery from pulmonary function testing equipment. Am J Respir Critical Care Med Vol 159. pp 610-612, 1999) that it takes five minutes for aerosolized organisms to be removed by gravitational sedimentation. This five minute wait would provide a safety margin between tests to further reduce the likelihood that an aerosolized infecting microbe could infect a subsequent subject.

An Example Timetable of Cleaning and Disinfecting

EVERY TEST: Perform a visual inspection at the beginning and end of testing to determine if cleaning or disinfecting is necessary. Check the mouthpiece to ensure that it is clean and unused.

DAILY: Perform a visual inspection before the first test of day. If there is visible contamination on the instrument, clean and disinfect.

PERIODICALLY (as determined by your organization based on use, elapsed time or an event): Disinfect all exposed parts of the instrument which can come into contact with subjects or operators.

Methods for cleaning and for disinfecting

Consider creating a list of acceptable methods and products that can be used for cleaning and disinfecting the instrument. Your guidelines should provide instructions on how and when to use each method. To learn more about the methods discussed in this brief there are references for additional information available in the Additional References section of this document.

General Cleaning Rules

Utilizing a liquid or wipe:

Read the label of the cleaner or disinfectant before using it. The instructions should tell you:

- What precautions you should take when applying the product, such as wearing gloves or aprons or making sure you have good ventilation during application.
- How to apply the product to a surface.
- Instructions on how to prepare (e.g., dilute) if the product is a concentrate.
- Contact time - How long you need to leave it on the surface to be effective.
- If the surface needs to be cleaned first and/or rinsed after using.
- If the product is safe for the surface.

Intoximeters, Inc. does not warrant against cleaning products that damage the instrument. Before applying the solution to the entire instrument, and to avoid damaging the instrument it is important that you first read the products instructions and warnings to make certain that the manufacturer does not have warnings about where it should and should not be used. As well, to ensure that it does not discolor or otherwise damage the instrument's case, display, breath tube or any other surface that it used to clean or disinfect, before applying the solution to the entire instrument, test the cleaning material on at least one small section of each of the different surface types that you plan to use it on. Give it the prescribed amount of time for cleaning or disinfecting to prove that it will not damage the instrument.

A Few Other Recommendations:

- Use disposable gloves to clean the instrument prior to applying cleaner or disinfectant.

- Only use the cleaning method on external surfaces of the instrument unless instructed otherwise.

- Do not submerge the instrument in a liquid. Use a moist, but not dripping cloth to apply the cleaning solution to the exterior surfaces that you wish to clean.

- Follow the cleaner/disinfectant manufacturers guidelines to clean exterior surfaces where the subject has come in contact with the instrument or subject's breath or other expectorants have come in contact with the instrument.

- If cleaning internal surfaces of the instrument is required, a factory maintenance technician can be employed to provide this service. Removing the case covers (not including the battery cover) to access internal components for cleaning may void your warranty.

- Let the instrument dry completely after cleaning or disinfecting process and then observe a fifteen-minute waiting period before subject testing resumes.

Lists exist on the EPA's website for tested wipes and disinfectants, including a list of cleaning materials effective for Novel Coronavirus SARS-CoV-2.

ALCOMONITOR CC

The AlcoMonitor CC is a desktop instrument where the mouthpiece (often a straw) is inserted into the sample inlet on the face of the instrument and the subject blows through the mouthpiece into and through the instrument manifold, from which the sample is captured and analyzed. Use of a barrier filtered mouthpiece would reduce, if not eliminate, germs from entering or contaminating the instrument. The breath will exit out of the manifold through a tube that exits out the base of the instrument. The instrument has a flapper valve within the sample path that is designed to keep the subject from sucking gas back out of the instrument.

The manifold and sample chambers are heated so breath will not condense on them. As well, the purge fan cycles air through the sample system after the test to purge it with ambient room air.

The breath sample and purged air is exhausted out the exit port on the base of the instrument (just below the front panel and instrument display). The operator should be aware of this so that they can position themselves such that they are not in the line of the exiting breath and, when cleaning or disinfecting the countertop below the instrument, take special care to clean or disinfect this surface area.

Unless the subject has expectorated a liquid onto or into the instrument, only a review of inlet, the instrument face and case will be necessary.

If the subject has expectorated a substance onto the instrument, your cleaning and disinfecting guidelines should outline what procedure(s) need to be followed.

If the subject has expectorated a substance other than a normal breath sample into the mouthpiece, your guidelines should indicate whether a procedure needs to be performed or if the instrument needs to be sent back to the factory for cleaning the internal parts. If the latter is the determination, the instrument should be labelled, clearly identifying the concern for the technician that will perform the cleaning process.

Heating and purging the sample chamber reduces the likelihood of most germs remaining active in the instrument for extended periods of time. Nonetheless, periodic cleaning and disinfecting should be considered.

Cleaning an AlcoMonitor CC

If there is a reason that necessitates a cleaning or disinfecting of the instrument, it is prudent to clean as much of the instrument that is exposed to the subject of operator as is possible since it will not take much more time than cleaning just the part that has deposited material on it.

A slightly damp cloth with mild detergent can be used to clean the instrument surfaces and the outside of the breath inlet, but take great care when cleaning the breath inlet to avoid getting water into the hole. Liquid drawn

into the sample port can cause high blank occurrences and may take the instrument minutes to hours for the liquid to evaporate.

The entire cleaning process usually takes less than 10 minutes of active time.

Disinfecting an AlcoMonitor CC

To disinfect an AlcoMonitor CC use an effective wipe or towelette that contains a disinfecting agent. The EPA provides lists of effective cleaning materials (the Reference section of this document to provides a link to a list of cleaning materials effective for Novel Coronavirus SARS-CoV-2. The EPA has lists for other cleaning materials for other diseases as well.)

An effective towelette can be used to clean the instrument's case, keypad, breath inlet and exit port and the area on the desk below where the exit port directs the expelled breath. Many of these wipes have a relatively high concentration of alcohol or contain peroxide or sodium hypochlorite (the active ingredient in bleach).

Obviously, care needs to be taken with an alcohol based cleaner since these breath test instruments are used to measure breath alcohol concentrations. Alcohol is a volatile substance and alcohol based disinfectants used on or near the instrument can cause high blank test results if not allowed to dry and dissipate.

If either the towelettes or a damp cloth soaked with the disinfecting solution are wet enough to produce liquid droplets while cleaning or disinfecting an instrument, avoid introducing those droplets into the hole on the breath inlet. Be certain that the instrument is completely dried and had time for any evaporated alcohol to have dissipated before further subject testing. A good rule of thumb for ensuring the dissipation of a volatile is to wait 15 minutes after any wetted surface from the disinfectant, on or near the instrument has dried before subject testing resumes.

The entire disinfecting process usually takes less than 15 minutes of active time.

INTOX EC/IR, INTOX EC/IR II AND INTOX EC/IR II.T

Running a Test - The Intox EC/IR product line (Intox EC/IR, Intox EC/IR II and Intox EC/IR II.t) herein called “EC/IR” have operating instructions that suggest the use of either of two available one-way mouthpieces or a barrier filtered mouthpiece. The selected mouthpiece should be inserted into the instrument’s breath tube. The mouthpiece allows the subject to provide a sample through the mouthpiece, which passes through the heated breath tube into a heated manifold before entering the sample chamber where infrared sensor and fuel cell sensor captures and analyzes the gas. The sample transverses the sample chamber and exits the instrument through the exit port that includes an in line purge fan. The exit port is on the underside of the instrument.

The one way mouthpiece and barrier filtered mouthpiece keeps the subject drawing gas from the internal recesses of the instrument. Since the mouthpiece is at the front end of the sample path and because it is colder than the heated breath tube and sample path, it will be the section of the sample path that will have the most residual from a provided sample.

The mouthpiece is the first portion of the breath sample path during a subject test, and given that it is closest to the person mouth, it will be where the majority of the breath condensate will accumulate. Disposing of the mouthpiece after a subject test will eliminate the vast majority of non-gaseous breath constituents.

The breath tube, manifold and sample chambers are heated so breath will not condense on them. As well, the purge fan cycles air through the sample system both before and after the test to purge them with ambient room air.

Since the exit port is on the base of the instrument, breath sample and purged air is directed away from the operator.

Use of disposable gloves by the operator will protect the operator from exposure to, or transmission of germs.

The EC/IR products require that the mouthpiece be manually removed. You can either choose to have the subject remove the mouthpiece and dispose of it or the operator, with gloved hands can remove it, taking care to avoid handling it where excess saliva or other liquids exist.

At the end of each test, inspect the breath tube that the mouthpiece attaches to, observe the outside of the case. If there is liquid observed on the instrument case, refer to your procedure to determine whether a cleaning or disinfection is required. If the subject has created enough condensed breath or has expectorated liquid into or onto the instrument, or onto the operator, refer to your maintenance guidelines for cleaning and disinfecting instructions.

After the test is completed the operator should remove and dispose of their gloves before washing their hands.

Cleaning an EC/IR product line

If cleaning is required, the mouthpiece entry port should be cleaned. Since it will not take much more time, it is prudent the entire external portion of the instrument's case, where the operator or subject can come in contact with the instrument should be cleaned.

A slightly damp cloth with mild detergent can be used to clean the instrument surfaces. Take great care when cleaning the mouthpiece channel as you will not want to leave liquid droplets in the channel after cleaning.

Cleaning the table or stand underneath the instrument, where the breath flow exits should also be considered. If you do this with an alcohol based cleaner or disinfectant, wait 15 minutes after the cleaning substance has dried before subject testing resumes.

The entire cleaning process usually takes less than 10 minutes of active time.

Disinfecting an EC/IR product line

To disinfect an EC/IR use an effective wipe or towelette that contains a disinfecting agent. The EPA provides lists of effective cleaning materials (the Reference section of this document to provides a link to a list of cleaning materials effective for Novel Coronavirus SARS-CoV-2. The EPA has lists for other cleaning materials for other diseases as well.)

An effective towelette can be used to clean the case and mouthpiece channel. Many of these wipes have a relatively high concentration of alcohol or contain peroxide or sodium hypochlorite (the active ingredient in bleach).

Obviously, care needs to be taken with an alcohol based cleaner since these instruments are used to measure breath alcohol concentrations. Residual alcohol in the air can cause the instruments pre-test blank test to fail and prevent a subject test from being performed. If extremely high concentrations of alcohol are sampled by the fuel cell sensor, it may take the instrument an extended period of time before it will allow further analyses.

If either the towelettes or damp cloth are wet enough to produce liquid droplets, be sure that the instrument is completely dried and had time for any evaporated alcohol to have dissipated. A good rule of thumb for ensuring the dissipation of a volatile is to wait 15 minutes after the wetted surface has dried before subject testing resumes.

Disinfecting the instrument, depending upon the method used can be expected to take less than 15 minutes of active time.

INTOX DMT, INTOX DMT DUAL SENSOR

The Intox DMT (“DMT”) product line instruments have operating instructions that offer the use of a one-way mouthpiece. While recommended as an added protection the instrument has a built in check valve to keep the subject from sucking a sample back through the sample system if a one-way mouthpiece or barrier filtered mouthpiece is not used. The selected mouthpiece should be inserted into the instrument’s breath tube. The mouthpiece allows the subject to provide a sample through the mouthpiece, then through the heated breath tube which delivers the breath sample into the analytical chamber(s) (fuel cell and then infrared bench if both are installed in the unit). The sample transverses the infrared chamber and exits the instrument through the exit port on the back panel of the instrument. There is a purge pump on the instrument that allows the instrument to purge the sample path by redirecting the flow with the five way valve before and after a test.

The mouthpiece is the first portion of the breath sample path during a subject test, and given that it is closest to the person mouth, it will be where the majority of the breath condensate will accumulate. Use of a barrier filtered mouthpiece can reduce the amount of germs that will reach the instrument. Disposing of the mouthpiece after a subject test will eliminate the vast majority of non-gaseous breath constituents.

The breath tube and sample chambers are heated so breath will not condense on them. As well, the purge pump cycles air through the sample system both before and after the test to purge them with ambient room air.

Since the exit port is on the rear of the instrument, the breath sample and purged air is directed away from the operator.

Use of disposable gloves by the operator will protect the operator from exposure to, or transmission of germs.

The DMT products require that the mouthpiece be manually removed. You can either choose to have the subject remove the mouthpiece and dispose of it or the operator, with gloved hands can remove it, taking care to avoid handling it where saliva or other liquids exist.

At the end of each test, inspect the breath tube that the mouthpiece attaches to, observe the outside of the case (with particular care to observe the breath outlet port on the back of the instrument). If there is liquid observed on the instrument case, refer to your procedure to determine whether a cleaning or disinfection is required. If the subject has created enough condensed breath or has expectorated liquid into or onto the instrument, or onto the operator, refer to your maintenance guidelines for cleaning and disinfecting instructions.

After the test is completed the operator should remove and dispose of their gloves before washing their hands.

Cleaning an Intox DMT

To properly clean the instrument, clean the breath tube and the instrument's case.

A slightly damp cloth with mild detergent can be used to clean the instrument surfaces and the outside of the breath tube that the mouthpiece attaches to, but take great care when cleaning the breath tube to avoid getting water into the tube while it is attached to the instrument. Liquid that is poured into the breath tube can cause the instrument to flag error conditions that will make completing a test difficult.

The entire cleaning process usually takes less than 10 minutes.

Disinfecting an Intox DMT

To disinfect a DMT use an effective wipe or towelette that contains a disinfecting agent. The EPA provides lists of effective cleaning materials (the Additional References section of this document provides a link to a list of cleaning materials effective for Novel Coronavirus SARS-CoV-2. The EPA has lists for other cleaning materials for other diseases as well.)

Many of these wipes have a relatively high concentration of alcohol or contain peroxide or sodium hypochlorite (the active ingredient in bleach).

Obviously, care needs to be taken with an alcohol based cleaner since these instruments are used to measure breath alcohol concentrations. Residual alcohol in the air can cause the instruments pre-test blank test to fail and prevent a subject test from being performed. If extremely high concentrations of alcohol are sampled by the fuel cell sensor (assuming your instrument utilizes this sensor), it may take the instrument an extended period of time before it will allow further analyses.

If either the towelettes or damp cloth used to disinfect are wet enough to produce liquid droplets, be sure to keep from introducing those droplets into the breath tube. As well, be sure that the instrument is completely dried and had time for any evaporated alcohol to have dissipated before placing the instrument back into service. A good rule of thumb for ensuring the dissipation of a volatile is to wait 15 minutes after the wetted surface has dried before subject testing resumes.

Disinfecting the instrument, will normally take less than 15 minutes of active time.

ADDITIONAL REFERENCES:

The risk of breath alcohol instrument contamination

Center for Disease Control (CDC) - http://www.cdc.gov

- **CDC –** How to clean and disinfect **-** https://www.cdc.gov/coronavirus/2019-ncov/community/home/cleaning-disinfection.html#disinfect
- **CDC - Environmental** Cleaning and Disinfecting Guidelines **-** https://www.cdc.gov/coronavirus/2019-ncov/community/home/cleaning-disinfection.html

Environmental Protection Agency (EPA) - https://www.epa.gov/

- EPA's Registered Antimicrobial Products - https://www.epa.gov/pesticide-registration/selected-epa-registered-disinfectants
- EPA's Registered Antimicrobial Products for Use Against Novel Coronavirus SARS-CoV-2, the Cause of COVID-19 https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2

Evaluation of alcohol wipes used during aseptic manufacturing, M.N Panousi, G.J Williams, S. Girdlestone, S.J. Hiam, J-Y Mailard, Letter in Applied Microbiology, Volume 48, Issue 5, May 2009. https://sfamjournals.onlinelibrary.wiley.com/doi/full/10.1111/j.1472-765X.2009.02574.x

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