Monthly Safety Notice

June 2020 National Baromedical Services, Inc.

Covid-19 Approved Disinfectants for Chambers

Background

When novel coronavirus, 2019-nCoV (Covid-19) started making headlines in the US, hospitals began reaching out to the disinfectant manufacturers of approved chamber products to obtain guidance on disinfecting surfaces at risk for Covid-19 contamination.

The Issue

The topic is ever evolving as more is learned about the novel virus and by now most institutions have incorporated policy recommended by the CDC, WHO and local health officials.

Hyperbaric chambers are unique in that the acrylic requires special handling consideration in order to avoid damaging crazing effects. We do know that the use of ultraviolet light as a means to disinfect a room is not approved by Sechrist for any exposed chamber acrylic. See the attached communication between a hospital and UV product manufacturer.

In the past, the chamber manufacture Sechrist conducted a testing process and generated a list of their recommended products. Four of their approved products are also listed on the attached letter from Ecolab. When selecting the product, one must also consider the ability to effectively follow the disinfectant manufacturer recommendations for use and storage. Some products require dilution however, while in their concentrated state are hazardous from a fire standpoint, therefore should not be stored or mixed within the chamber room. Some products are recommended only for outdoor use or in well-ventilated areas. The inside of the chamber, while turned off is not well ventilated and can trigger a respiratory reaction requiring medical attention.

On this list from Ecolab, the following products are considered effective against Covid-19:

1. Neutral Disinfectant Cleaner
2. Oxycide Daily Disinfectant Cleaner
3. Quaternary Disinfectant Cleaner
4. Virasept

Bottom Line

It is very important only use approved products from the Sechrist list as well as products effective against Covid-19. Read the product label and closely follow all the instructions for use and adhere to the warnings listed on the Product Safety Data Sheet (SDS) to ensure the staff, patients and facility are not compromised while handling these products while effectively disinfecting Covid-19 and other viruses. Also, when in doubt, contact the chamber manufacturer for further guidance.

Attachments:

Tru D Smart UV letter
Sechrist Engineer response on UV
Ecolab letter
Sechrist product list

C, Frank

From:
Sent: Thursday, March 12, 2020 6:17 PM
To:
Subject: RE: Hyperbaric

External Email. Use Caution.

Hi Frank,

Here is the reply from our Director of Product Development

I'm afraid not. Slight cracking appears on the exposed surface. It's called "crazing". In an emergency situation, it would be OK. Even once in a long while. But frequent use would cause crazing. There's no degradation to the material itself, meaning it will remain structurally sound. Crazing only affects a thin outer layer of material. From an aesthetic standpoint, it will have a shattered appearance, so overall, we wouldn't recommend it.

There's difficulty in saying how much is too much exposure because all acrylics are not created equal. I can say with confidence that it's OK to use Tru-D on acrylics in an emergency situation. But recurring use is not recommended.

Hope that helps.

Tru-D SmartUVC

3/8/20

Need 6mm of covering over the chambers

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Stay up-to-date with the latest UVC news at UVC360.com!

Deepak Talati **<dtalati@sechristusa.com>** Fri, Mar 13, 8:38 PM

Good Afternoon Stacy;

UV light is invisible to the human eye and occupies the portion of the electromagnetic spectrum between X-Rays and Visible light. UV light is split into three types.

UVA (315 to 400nm wavelength)
UNB (280 – 315 nm wavelength)
UNC (100 – 280 nm wavelength)

As sunlight passes through the atmosphere, all UVC and 90% of UAB is absorbed. As the wavelength decreases, energy of the radiation increases. We all know that direct sunlight has detrimental effect on the acrylic and this harmful effect is created by UVA radiation that does not have high energy. The effect on the acrylic exposed to UNB and UNC radiation will be much more higher. UNC short wave high energy radiation is typically used for germicidal purposes.

All types of UV radiation can cause a photochemical effect within the polymer structure which can lead to degradation of the material and especially higher energy UNC. When absorbed by plastics, UV energy can excite photons. This in turn can create free radicals. This will lead to degradation as catalyst residues will often act as receptors. The free radicals can cause breaks in the polymer bonds.

My opinion is that the use of UV radiation lights for germicidal irradiation should not be allowed under any circumstances around the chamber's acrylic cylinder. They can be used in wound care rooms (without Hyperbaric chambers) as long as care is taken to ensure that UV light is not entering hyperbaric room. Doors to the hyperbaric room should be closed and door windows if any must be covered while the other rooms are undergoing UV irradiation.

Crazing is considered to be the beginning of micro fractures. The cylinder is under tensile and compression forces during chamber operation and it gets cleaned using fluidic disinfectant that can permeate and accelerate crazing. I personally do not prefer to keep using the chamber with crazing. It should be removed by sanding and polishing.

I do not have test data showing long term effect to acrylic exposed to short term UVC radiation. If the supplier certifies that their system can be used around hyperbaric chambers with acrylic cylinders then they should provide test data and take the responsibility if anything happens during the life of the cylinder.

Thanks.

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Date: February 6, 2020

From: Ecolab Healthcare

Subject: 2019 Novel Coronavirus (2019-nCoV)

Background: Human coronaviruses[1] are common throughout the world. Human coronaviruses commonly cause mild to moderate illness. Two newer human coronaviruses, MERS-CoV and SARS-CoV, have been known to cause severe illness. A novel coronavirus, 2019-nCoV, emerged in 2019 and is causing concern.

What is 2019 Novel Coronavirus (2019-nCoV)? [2]

- Chinese authorities identified the new coronavirus originating in Wuhan, China.
  This virus has resulted in thousands of confirmed cases, the majority of which are in China, with additional cases being identified in a growing number of countries internationally. Effective January 27, 2020, the United States Department of Health and Human Services (DHS) declared a public health emergency for the entire United States to aid the nation's healthcare community in responding to 2019 novel coronavirus. The Centers for Disease Control and Prevention (CDC) is working closely with state health departments on disease surveillance, contact tracing, and providing interim guidance for clinicians on identifying and treating coronavirus infections.
- Clinical signs and symptoms include fever and symptoms of lower respiratory illness (e.g., cough, shortness of breath).
- Early on, many patients in the outbreak in Wuhan, China reportedly had some link to a large seafood and animal market, suggesting animal-to-person spread. However, a growing number of patients reportedly have not had exposure to animal markets, suggesting person-to-person spread is occurring, though it's unclear how easily or sustainably this virus is spreading between people. The situation with 2019-nCoV is still unclear and evolving rapidly. While severe illness, including illness resulting in numerous deaths, has been reported in China, other patients have had milder illness and been discharged. Person-to-person transmission has been reported in healthcare workers who were caring for some of the ill people in China.

What are the healthcare infection control precautions for 2019-nCoV? [3]

Although the transmission dynamics have yet to be determined, CDC currently recommends a cautious approach to patients under investigation for 2019 Novel Coronavirus:

- Patients should be asked to wear a surgical mask as soon as they are identified and be evaluated in a private room with the door closed, ideally an airborne infection isolation room if available.
- Healthcare personnel entering the room should use standard precautions, contact precautions, airborne precautions, and eye protection (e.g., goggles or a face shield). The healthcare facility's infection control personnel and local health department should be notified immediately.
- Meticulous hand hygiene and environmental hygiene play a key role in these isolation precautions.
- The EPA and the CDC recognize environmental surfaces as a vector for transmission of coronaviruses. The CDC has developed a hospital preparedness checklist[4] which recommends that hospitals assess the effectiveness of environmental cleaning and consider providing refresher training on environmental hygiene best practices as outlined in the CDC Toolkit: Options for Evaluating Environmental Cleaning.[5]
- CDC has developed a real time Reverse Transcription-Polymerase Chain Reaction (rRT-PCR) test that can diagnose 2019-nCoV.

What hand hygiene products are effective against 2019-nCoV?

Washing your hands often with soap and water is one of the best ways to avoid transmission of emerging pathogens. The World Health Organization recommends performing hand hygiene with soap and water or alcohol-based hand rub if soap and water are not available. The US Food and Drug Administration regulates claims on both medicated, antimicrobial soaps and on alcohol-based hand sanitizers. Claims related to efficacy against viruses are not allowed on any medicated, antimicrobial soaps nor on any alcohol-based hand sanitizers in the United States.

What disinfectants are effective against 2019-nCoV?

2019-nCoV is caused by 2019 Novel Coronavirus. The EPA has developed the "Guidance to Registrants: Process for making claims against emerging viral pathogens not on EPA-registered disinfectant labels".[6] This document provides general guidance to disinfectant manufacturers and addresses public concerns on a process that can be used to identify effective disinfectants for use against emerging viral pathogens. It permits manufacturers to make limited claims about their product's efficacy against such pathogens once the EPA confirms the product meets the eligibility criteria outlined in the guidance.

The products in the table below meet the criteria for claims against emerging viral pathogens and therefore can be used against 2019 Novel Coronavirus when used in accordance with the directions for use against the listed supporting virus on hard, non-porous surfaces. Contact your Ecolab Account Executive for additional product information.

DAZO™ fluorescent marker is an objective method to evaluate the thoroughness of the cleaning process, rather than the presence of organic material or pathogens.[5] Other environmental monitoring methods intended to measure organic load (e.g. ATP)[6] or bacterial burden (e.g. bacterial cultures) do not detect viruses. Even with the best EVS staff in the world, without an effective environmental hygiene monitoring tool such as DAZO fluorescent marker, there is no way to determine the effectiveness of their cleaning practices.

ECOLAB PRODUCT NAME:	ITEM NUMBERS:	EPA REGISTRATION #:	NAME OF SUPPORTING VIRUS, DILUTION RATE AND CONTACT TIME:
A-456 II™ DISINFECTANT CLEANER	6166931 (2x1.3L)	6836-78-1677	Norovirus (Feline calicivirus surrogate), 0.5-1 oz/gal, **10 minutes**
* NEUTRAL DISINFECTANT CLEANER	6027314(4x1gal) 6101205 (1x2.5gal) 6114541 (2x1.3L) 6100836 (50x1oz Pour Pak)	47371-129-1677	Adenovirus, 0.5-1 oz/gal, **10 minutes**
* OXYCIDE™ DAILY DISINFECTANT CLEANER	6000189 (2x96oz)	1677-237	Norovirus (Feline calicivirus surrogate), 3 oz/gal, **3 minutes**
* QUATERNARY DISINFECTANT CLEANER	6063304 (4x1gal)	6836-78-1677	Norovirus (Feline calicivirus surrogate), 0.5-1 oz/gal, **10 minutes**
TB DISINFECTANT CLEANER RTU	6143556 (12x32oz)	1839-83-1677	Rotavirus, Ready-to-use, **3 minutes**
* VIRASEPT™	6002314 (12x32oz)	1677-226	Rhinovirus, Ready-to-use **4 minutes**

*Sechrist Approved however read the MSDS for other concerns.

What work is still ongoing?

- Screening of travelers from China.
  The United States is temporarily denying entry to foreign nationals who visited China in the 14 days prior to their arrival to the United States. Restrictions also apply to US citizens who have been in China's Hubei province, the epicenter of the coronavirus outbreak, in the two weeks prior to their return to the United States. Upon their return, those citizens will be under a mandatory quarantine of up to 14 days. US citizens returning from the rest of mainland China in the 14 days prior will undergo health screenings at selected ports of entry and be under self-monitored quarantine for 14 days.
- Determining the origin of the virus, which could lead to recommended guidance related to transmission from animals
- Determining disease progression among ill people and how they may have acquired the infection
- Determining the frequency and likelihood of person-to-person transmission

For More Information

World Health Organization, Coronavirus https://www.who.int/health-topics/coronavirus

References

1. Centers for Disease Control and Prevention, Coronavirus Summary. https://www.cdc.gov/coronavirus/index.html
2. Centers for Disease Control and Prevention, 2019 Novel Coronavirus. https://www.cdc.gov/coronavirus/2019-nCoV/summary.html
3. Centers for Disease Control and Prevention, Interim Healthcare Infection Prevention and Control Recommendations for Patients Under Investigation for 2019 Novel Coronavirus. https://www.cdc.gov/coronavirus/2019-nCoV/infection-control.html
4. Centers for Disease Control and Prevention, Hospital Preparedness Checklist for Suspected or Confirmed 2019-nCoV Patients. https://www.cdc.gov/coronavirus/2019-ncov/hcp/hcp-hospital-checklist.html
5. Centers for Disease Control and Prevention, Options for Evaluating Environmental Cleaning. https://www.cdc.gov/HAI/toolkits/Evaluating-Environmental-Cleaning.html
6. Environmental Protection Agency, Emerging Viral Pathogen Guidance for Antimicrobial Pesticides. https://www.epa.gov/pesticide-registration/emerging-viral-pathogen-guidance-antimicrobial-pesticides

SECHRIST INDUSTRIES, INC.

CARE AND DISINFECTION OF THE CHAMBER AND GURNEY

- Clean the chamber according to the type of cases being treated and as directed by the medical staff. Refer to the list of acceptable cleaners available from SECHRIST INDUSTRIES.
- Wash Stretcher, Pillows. Positioning Pads and Mattress surfaces with approved cleaner or mild dish washing soap. Refer to the Gurney User Manual for cleaning instructions.

CLEANING OF PAINTED AND ANODIZED SURFACES

- Use the same methods for cleaning as used for the Acrylic Cylinder.

APPROVED CHAMBER CLEANERS

	DISINFECTANT	MANUFACTURER CITY, STATE	MANUFACTURER PART NUMBER	RECOMMENDED DILUTION WITH WATER	STRENGTH APPROVED FOR USE	APPROVED AT RECOMMENDED DILUTION
	Asepti-HB	Ecolab Professional Products Ecolab Inc. St. Paul, MN	N/A	Not Provided	Ready to use	N/A
	Virasept	Ecolab Professional Products Ecolab Inc. St. Paul, MN	6002314	Not Provided	Ready to use	N/A
flame inhale	Oxycide Daily Disinfectant	Ecolab Professional Products Ecolab Inc. St. Paul, MN	6000189	1:128-1:64	1:128-1:64	YES
inhale	Neutral Disinfectant Cleaner	Ecolab Professional Products Ecolab Inc. St. Paul, MN	6027314	1:256-2:64	1:256-2:64	YES
flame	Tor-HB (Discontinued, can use unexpired stock)	Ecolab Professional Products Ecolab Inc. St. Paul, MN	N/A	1:64	1:64	YES
flame	Stat III TB	Ecolab Professional Products Ecolab Inc. St. Paul, MN	N/A	1:128	1:128	YES
inhale	Beaucoup	Ecolab Professional Products Ecolab Inc. St. Paul, MN	N/A	1:128	1:128	YES
flame	LpH-se	Calgon, Vestal Division STERIS Corp. Mentor, OH	N/A	1:256	1:256	YES
streak	Sani-Cloth Bleach Wipe	PDI/Nicepak Orangeburg, NY	U13295	Equivalent to 1:10 dilution	Ready to use	N/A
streak	Clorox Healthcare Bleach Germicidal Cleaner	Clorox Professional Products (Oakland, CA)	68967, 68970, 68832, 68973, 68978	Not provided	Ready to use	N/A
streak	Dispatch with Bleach	Caltech Industries, Inc. Midland, MI	68832	Not provided	Ready to use	N/A
inhale	Quaternary Disinfectant Cleaner	ECOLAB® St Paul, MN	6063301 6063304	1:256-1:64 Not provided	1:256 - 1:64 Ready to use	YES N/A
mixed sds	Coverage® Spray HB PLus	Steris Corporation Mentor, OH	1624-77	Not provided	Ready to use	N/A
	Sani-Cloth® HB	PDI/Nicepak Orangeburg, NY	Q08472	Not Provided	Ready to use	N/A