Specialists in Industrial Substance Abuse Management
Distributors of Analytical Equipment for Alcohol and Other Drug Detection

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ALCO-Safe (Pty) Ltd

05/03/2020

RE: COVID-19 Coronavirus

Dear valued ALCO-Safe client

With the announcement in the media of the first case of the COVID-19 coronavirus in South Africa it is important to address the concerns that this will undoubtedly bring about in relation to the use of breathalyzers for the control of intoxicated persons entering a work place.

As with all modern topics the majority of information that is available to the public is shared through social media platforms. Unfortunately, a lot of the information is either partially incorrect or completely untrue.

It is important to look at the facts in these circumstances and consider all of the information that is currently available to us.

COVID-19 Coronavirus is a new form of coronavirus. There are a number of coronaviruses that we have been aware of since the 1960s.

Some facts about the dangers of the COVID-19 coronavirus-

- Approximately 81% of the cases are mild
- 14% are moderate
- Only approximately 1.4% of cases are fatal according to the latest report from the New England Journal of medicine.
- **Only 0.2% of cases in people under the age of 50 are fatal**
- The death rate for typical seasonal flu is 0.1%
- If you are not living in China your chance of contracting the virus is less than 1 in 45 million.
- The COVID-19 corona virus is sensitive to heat.
- When outside the body the COVID-19 coronavirus dies when exposed to heat above 24 Degrees Celsius. This is very important for South Africa as we have a warm weather climate and it therefore reduces the chance of transmission even further.

According to the NICD (the national institute for communicable diseases) and WHO (the World Health Organization) current evidence suggests that the disease is spread when an infected person sneezes or coughs, propelling droplets of disease carrying saliva onto their hands. When they shake someone else's hand or touch someone they can transfer the bacteria.

Physical contact with a surface that is contaminated with the virus poses the largest threat to transmission. Therefore, shaking hands is a very high risk for transmission. It is important to wash your hands on a regular basis so that you do not transfer contaminated saliva onto your face.

The transmission of the virus then is very similar to normal flu and Tuberculosis (TB).ALCO-Safe has always held the health and safety of our clients in the highest regard. The LION Alcoblow rapid test is the most commonly used breathalyzer in South Africa with more than 35 000 units currently in use. The transmission of flu and TB were a particular concern so in October 2013 an in-depth hygiene study was conducted in a laboratory at the University of Cardiff in the United Kingdom. The purpose of the study was to assess the possibility of the ALCOBLOW transmitting diseases.

The results of the study were very conclusive and showed that-

- The specific design of the Alcoblow sampling cone channels air away from the test subject
- The sampling cone retains very few bacteria after use
- There is **no physical contact** between the Alcoblow and the test subject
- The study concluded that the risk of transmission when using the Alcoblow in the recommended way is NIL.
- **The Alcoblow is safe to use and does not pose a risk to the test subject if the correct procedure is followed, ensuring the test subject does not have physical contact with the sampling Cone**

The full hygiene report is attached to this document.

The WHO has advised that at this stage only people who are sick should wear masks. Masks are used to prevent sick people from spreading the virus when sneezing or coughing.

Healthy people do not need to wear masks. The virus is not spread via breath. They should wash their hands on a regular basis and avoid touching their face wherever possible.

Clean and disinfect surfaces on a regular basis. Avoid physical contact with people showing flu symptoms.

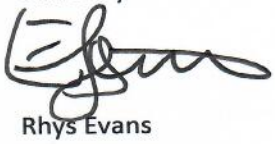
ALCO-Safe does supply an alcohol-free disinfectant wipe called SUPERNOVA which has proven affective against many similar viruses. As well as a lockable wall bracket that can be used to hold the wipes in place. For extra piece of mind or cautious hygienic practices the ALCBLOW cone can be wiped in between testing using these SUPERNOVA wipes to kill bacteria that may settle on the sample cone.

It is important to note that there has up to this date only been one positive test for the COVID-19 virus in South Africa. Healthy people can not spread a virus that they do not have or have not come into contact with. People who are ill should seek immediate medical attention and testing to determine the cause of the illness and stay away from their workplace

Users of the ALCOBLOW do not face an increase risk of contracting the virus as there is no physical contact with the device. The operator or person holding the device does have physical contact with it. Therefore, logic would suggest that that person could wear gloves, wipes the instruments on a regular basis and always wash their hands before eating our touching their face after use.

Please contact ALCO-Safe if there are any queries in this regard.

Sincerely



Rhys Evans
Director

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DATE: Monday, 17 March 2014
YOUR REF:
OUR REF:

To Whom it May Concern

Following is a report commissioned by Lion from the University of Cardiff in respect of the AlcoBlow®.

Dr Paul Williams
International Marketing Director

PROJECT TITLE: Testing the presence of bacterial contamination on the Alcoblow® following simulated usage

CLIENT:
Contact:

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SUBMISSION DATE: 18 October 2013

Objectives

- Quantify the amount of bacteria retained on the device following simulated usage
- Quantify the amount of bacteria displaced from the device following repeated usage

Materials and methods

All experiments were performed on at least 3 separate occasions.

1) Micro-organisms

Streptococcus mutans NCTC 10449 was used. The bacterial strain was purchased from NCIMB (National Collection of Industrial, Food and Marine Bacteria). Test suspensions were prepared from a purified overnight growth of *S. mutans* on tryptone soya agar (TSA) supplemented with 5% (v/v) defibrinated sheep blood.

Viable bacterial count was performed using a standard enumeration technique based on bacterial colony count on TSA supplemented with 5% (v/v) defibrinated sheep blood.

2) Set up

The Porta-neb VentStream nebuliser (Philips Respronics, Best, The Netherlands) was used to aerosolize the bacterial suspension.

3) Controls

The survival of *S. mutans* following nebulisation and deposition on stainless steel disks was measured as a control. Following nebulisation bacteria were collected on stainless steel disk placed in a cascade impactor (Fig. 1). Viable bacteria on the disks were resuspended and enumerated.

A second set of controls was performed where nebulised bacteria were directly collected in tryptone sodium chloride (TSC) buffer, rather than deposition on stainless steel disks.

3) Simulated usage – repeated usage

S. mutans were nebulised and deposited onto the 'collector piece' of the Alcoblow® (Fig. 2). Bacteria were collected in TSC buffer from the 'overflow' of the device at the same time (Fig. 2). Following deposition, 5 bursts of 10 seconds with no bacteria (TSC alone) were performed with the nebuliser. Bacteria in the overflow were collected and enumerated. Bacteria present on the "collector piece" were collected by rinsing its surface with TSC and enumerated.

Results and Discussion

The use of the Porta-neb VentStream nebulizer allows for a uniform distribution of droplets and is used to mimic the formation of an aerosol (e.g. sneezing). The use of the nebuliser mounted to the "collector piece" of the Alcoblow® provides a simulated system that mimics someone blowing through the device.

An intermediate tube was designed and custom made to provide a sealed system between the nebulizer and the "collector piece" (Fig. 2), ensuring the system was safe to use. The procedure was carried out in a class 2 microbiological safety cabinet.

S. mutans is an oral bacterium that is involved in the formation of caries. This bacterium is considered to have some good hydrophobic property and with this in mind it is know to attach well to surfaces.

Bacterial viability was measured as colony forming unit per volume (i.e. cfu/mL). It is often expressed as a $\log_{10}$; a 2 $\log_{10}$ cfu/mL corresponds to 100 viable bacteria per mL.

2.89 ± 0.89 Log_{10} cfu/mL *S. mutans* were recovered from stainless steel surface following 20 min nebulisation. The nebulisation process and deposition on surfaces have a detrimental effect on bacterial viability justifying the high

concentration of bacteria to be nebulised. Recovery of bacteria in buffer rather than stainless steel surface following nebulisation was less detrimental to the bacteria, allowing shorter nebulisation time to be used. A nebulisation time of 10 sec allowed for the recovery of approx. 2 $\log_{10}$ cfu /mL (Table 1).

Deposition results are shown in Table 1. *S. mutans* (5.6-7 $\log_{10}$ cfu/mL; viable bacteria) were placed in the nebuliser. 232.8 cfu/mL (i.e. 2.37 $\log_{10}$ cfu/mL) bacteria were recovered from the "overflow" following 10 sec nebulisation. A further 0.324 cfu/mL were recovered following 5 x 10 sec bursts (nebulisation with no bacteria).
Only 1.512 cfu/mL bacteria were recovered from the "collector piece" following the 5 x 10 sec bursts (nebulisation with no bacteria).

In conclusion, the number of bacteria retained on the device following simulated usage (10 sec nebulisation burst followed by 5 x 10 sec bursts with no bacteria) was not significant (<2 bacteria). The number of bacteria displaced from the device following repeated usage (5 x 10 sec bursts with no bacteria) was not significant (<1 bacterium).

This study has shown that very few bacteria are retained on the AlcoBlow® sampling cone and that even fewer are displaced following usage. The risk of transmission, based on this study, appears to be nil (<1 bacterium displaced).

Table 1 Test results – *S. mutans* deposition following nebulisation

	Nebulised[1]	Overflow following initial nebulisation[2]	Overflow following 5 x 10 sec bursts	Collector piece following 5 x 10 sec bursts
Repeats	Log_{10}		cfu/mL	
1	6.70	74	1.14	1.26
2	5.63	188	0.18	1.24
3	5.74	64	0.02	0.76
4	6.97	780	0.08	1.9
5	7.15	58	0.2	2.4
Average		232.8	0.324	1.512

[1]: nebulised: initial number of viable bacteria nebulised
[2]: recovery from the overflow following an initial 10 sec nebulisation.

Fig. 1 System set up – deposition on stainless steel disks. a: vacuum pump, b: Andersen cascade impactor, c: Philips nebuliser

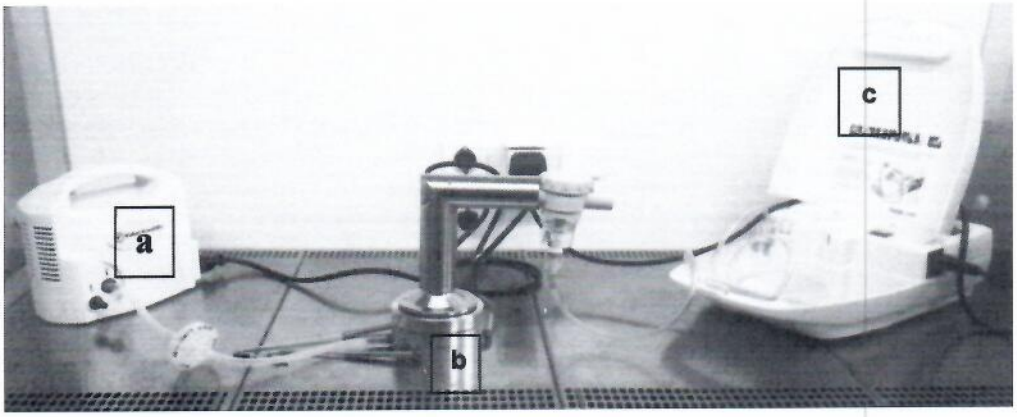
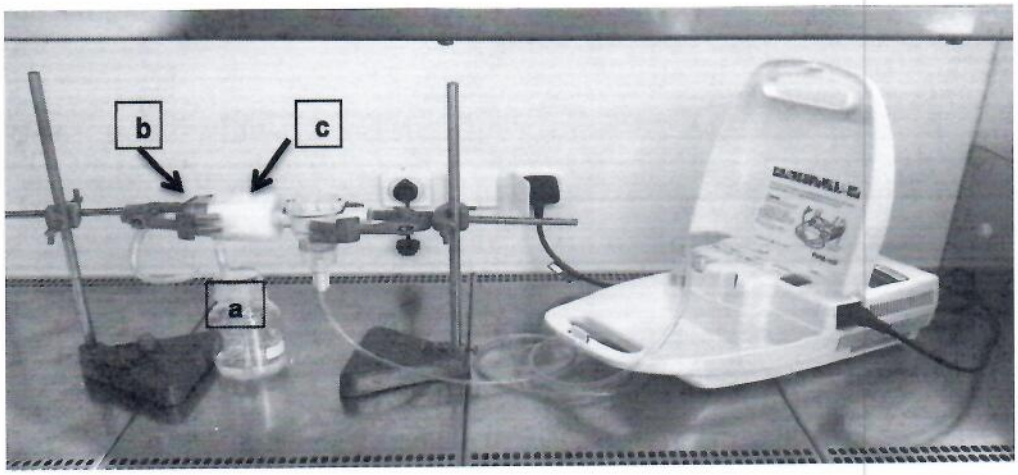


Fig. 2 Mounting of the "collector" piece with the nebuliser. a: "overflow", b: "collector piece", c: intermediate tube



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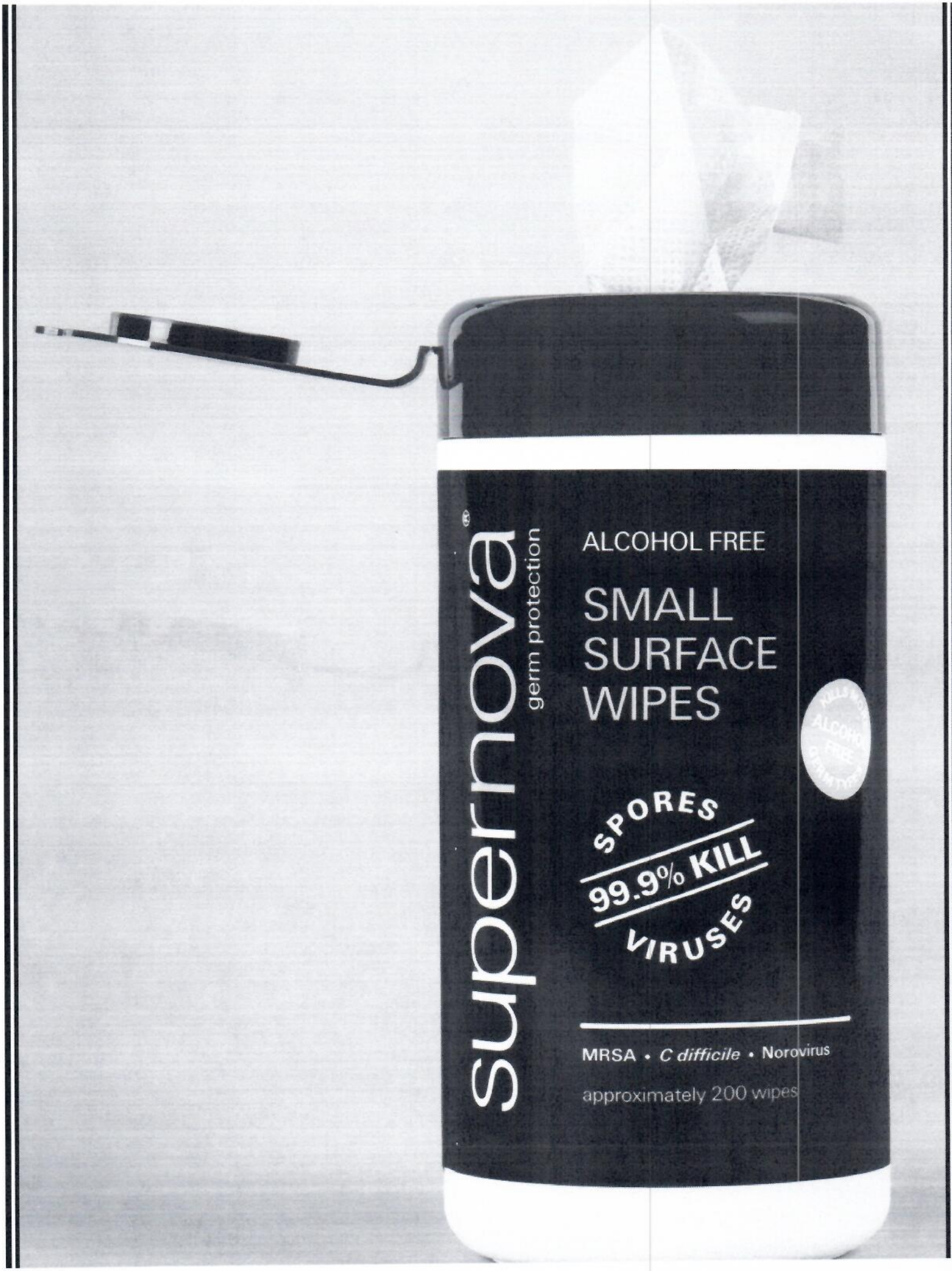
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SMALL
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SPORES
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MRSA • C difficile • Norovirus
approximately 200 wipes


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