



HAND SANITIZER-C

An alternative to alcohol-based sanitizers

History

The global Covid-19 outbreak now confirmed in South Africa and affecting South African citizens has created a demand far exceeding the availability and supply for Alcohol-based raw materials used as active ingredients in the manufacturing of Hand Sanitizing agents, aligning with initial WHO recommendations. Consequently, the Chemical Industry is under severe strain to deliver and meet the current demand, and we have conducted research and development based on studies published by the Centres for Disease Control and Prevention (CDC).

The Product and Application

This product is based on a formulation that consists of a recommended concentration of Food Grade Stabilized Hydrogen Peroxide, and other agents respectively, in order to provide not only a fast, but also prolonged hand protection against various micro-organisms including the Corona Virus Family, if used undiluted and as directed.

This product maintains both a safe concentration of active ingredients and ensures efficacy on adequate viral inactivation. The wet exposure time is recommended at a minimum of 1 minute.

Safety Measures

Ingestion:	Seek medical help. Do not induce vomiting
Eyes:	Rinse with plenty of water for at least 20 minutes
Inhalation:	Use in a ventilated area.

Storage

Store at a **cool temperature** and **away from sunlight**, children and foodstuffs.

SOURCES:

<https://www.cdc.gov/infectioncontrol/guidelines/disinfection/disinfection-methods/chemical.html>

Other sources of interest: <https://www.epa.gov/pesticide-registration/listn-disinfectants-use-against-sars-cov-2>
<https://www.sciencedirect.com/science/article/pii/S2590088920300081>
<https://www.ncbi.nlm.nih.gov/pubmed/203115>

References:

After researching world wide best practices and scientific journals we have developed an alternative hand sanitizer formulation which contains Hydrogen Peroxide as well as other raw materials for various supplementary purposes, based on studies conducted and other published data from key role players in infection and disease control. These credible references listed below, contain summaries and extracts to provide the reassurance that in the absence of alcohol, alternatives can be used to inactivate micro-organisms including the Corona Virus Family.

With hand washing being the first line of defense in maintaining hand hygiene, sanitizers are used in the absence of hand washing facilities. The type and extent of control required from a sanitizer should therefore be determined by the user in line with due consideration of any possible reactions to some users. It is important to note that not all sanitizers will have equal efficacy against all of the following organisms at one given time (Virus, Yeast, Spores, Fungi and Bacteria), and reaction time from one to the other may also vary.

In light of the above, we have developed **Hand Sanitizer C** to be used as a sanitizer effective to disrupt the spread of various organisms. Please refer to the below sources for your interest:

1. www.cdc.gov/infectioncontrol/guidelines/disinfection/disinfection-methods/chemical.html
*"Hydrogen peroxide is effective against a wide range of microorganisms, including bacteria, yeasts, fungi, viruses, and spores"^{78, 654}. **A 0.5% accelerated hydrogen peroxide demonstrated bactericidal and virucidal activity in 1 minute and mycobactericidal and fungicidal activity in 5 minutes"***

2. www.sciencedirect.com/science/article/pii/S2590088920300081

Persistence of coronaviruses on inanimate surfaces

*"Some disinfectant agents effectively reduce coronavirus infectivity within 1 minute such as 62%–71% ethanol, **0.5% hydrogen peroxide** or 0.1% sodium hypochlorite."*

Inactivation of coronaviruses by disinfectant agents in suspension tests

*"Ethanol (78%–95%), iso-propanol (70%–100%), the combination of 45% iso-propanol with 30% n-propanol, glutaraldehyde (0.5–2.5%), formaldehyde (0.7%–1%) and povidone iodine (0.23%–7.5%) readily inactivated coronavirus infectivity by approximately 4 log₁₀ or more. Sodium hypochlorite required a concentration of at least 0.21% to be effective. **Hydrogen peroxide was effective with a concentration of 0.5% and an exposure time of 1 min.**"*

*"On inanimate surfaces human coronaviruses can remain infectious for up to 9 days. A surface disinfection with 0.1% sodium hypochlorite, **0.5% hydrogen peroxide** or 62%–71% ethanol can be regarded as effective against coronaviruses within 1 min. A similar effect can be expected against the SARS-CoV-2."*

3. <https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2>

"List N includes products that meet EPA's criteria for use against SARS-CoV-2, the novel coronavirus that causes the disease COVID-19. "The following examples of products registered with the EPA have shown effectiveness against Corona viruses:

EPA Reg No	Active Ingredients	Virus	Contact Time	Type	Added
89900-1	Hydrogen Peroxide	Coronavirus	5 min	RTU	03/03/2020
9402-14	Hydrogen Peroxide, ammonium carbonate, ammonium bicarbonate	Coronavirus	5 min	RTU	03/03/2020
8383-12	Hydrogen Peroxide, Peroxyacetic Acid	Coronavirus	2 min	Dilutable	03/03/2020
74559-6	Hydrogen Peroxide	Coronavirus	5 min	Dilutable	03/03/2020
70627-62	Hydrogen Peroxide	Coronavirus	5 min	Dilutable	03/03/2020

