



**SADA DENTAL  
CLINICAL PROTOCOL**  
in response to  
**COVID-19 Pandemic**  
**2020**

A South African Practice  
Perspective



**SADA**

The South African Dental  
Association (**SADA**) NPC

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12. If your facility has toys, reading materials, or other communal objects, remove them (CDC).

### **In Contact**

For appropriate chemicals to use for disinfection, refer to the disinfectant comparison chart (Table 1) and the List of Disinfectants on the SADA website for approved disinfectants and also disinfectants that have qualified under the EPA's emerging viral pathogens programme for use against SARS-CoV-2 (List N: Disinfectants for use against SARS-CoV-2 accessed 20 April 2020 from <https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2>).

Table 1: **Disinfectant comparison chart**

Characteristics	Hydrogen Peroxide (H <sub>2</sub> O <sub>2</sub> )	Hypochlorous acid (HOCL)	Bleach (NaOCl)	Isopropyl alcohol
Form	Fluid	Aerosol spray	Fluid	Fluid
Suggested effective concentration	3% Hydrogen peroxide for disinfectant, 1% pre-procedural mouth rinse, 6% to 25% as chemical sterilant	80–200 ppm	500–1000 ppm	Concentrations of 60%–80% is a potent virucidal agent
pH (disinfection efficacy is determined by pH)		4- 5.5 (weak acid)	8 to 9 (alkaline)	Neutral
Stability	Stable and effective			
Effectiveness (killing power)	Bactericidal, virucidal, sporicidal and fungicidal properties	80–100 x more effective than NaOCl + Faster		
Bacteria	Strong	Strong	Strong	Strong
Viruses	Strong	99.9% effective	Strong	Strong
Tuberculocidal		Strong		
Contact time	0.5% Accelerated hydrogen peroxide demonstrated bactericidal and virucidal activity in 1 minute and mycobactericidal and	Immediate effect	10–30 minutes	2–5 minutes

	fungicidal activity in 5 minutes			
Safety	Toxic and irritant to skin, serious eye irritant (use protective eyewear)	Safe and non-toxic and non-irritant to skin and eyes	Toxic and irritant to skin and eyes	Toxic and irritant to skin and eyes
Odour	Odour not significant	Odourless	Strong odour	Strong odour
Physical characteristics	Leaves residue	Does not evaporate and leaves no residue	Leaves residue	Evaporates quickly
Disadvantages	Materials compatibility concerns (lead, brass, copper, zinc) both cosmetic and functional. Limited clinical experience. Potential for eye and skin damage			
Corrosiveness	Oxidising	None	Corrosive	Corrosion of metal
Discolouration	Cosmetic changes e.g. discolouration of black anodised metal finishes	None	Discolouration of fabrics and plastic surfaces	Prolonged use—discolouration and cracking of rubber and plastics
Other		FDA approved		Non-FDA cleared
Flammable	No	No	No	Yes
Ease of use	Rinsing, Spray and wipe	Spray and Foggers	Spray and wipe	Spray and wipe
Cost	+ manual ++ automated	++	+	++++

Accessed and adapted from: Stanford University: Environmental Health and Safety. <https://ehs.stanford.edu/reference/comparing-different-disinfectant> and the Centers for Disease Control. Chemical disinfectants—Guidelines for disinfection and sterilisation in health care facilities (<https://www.cdc.gov/infectioncontrol/guidelines/disinfection-methods/chemical.html>).

- Only H<sub>2</sub>O<sub>2</sub>, NaOCl (household bleach), alcohol, and hydrochlorous acid (HOCl) are effective surface disinfectants with virucidal efficacy.
- Each has its own advantages and disadvantages, in different formulations (vapour, fluids, wipes, sprays, etc.), and required contact times for optimum disinfection differ.
- We cannot present the full prescription and instead refer to the main SADA document published.
- Our clinical recommendations as best practices policy are as follows.

### Assessment of the Disinfectant Comparison List

<b>Alcohol</b>	As an environmental surface disinfectant, it is no longer recommended. Apart from the fact that it fixates protein, such as blood and saliva on hard surfaces, it is, furthermore, volatile and inflammable.
<b>Accelerated hydrogen peroxide</b>	Costly and takes too long to disinfect
<b>Bisguanide</b>	Not virucidal
<b>Citric acid</b>	Corrosive and irritating to eyes
<b>Chlorine dioxide</b>	Corrosive to metals, irritation to eyes and skin, unstable and must be prepared fresh daily
<b>Glutaraldehyde</b>	Toxic fumes causing irritation and other adverse effects—not recommended
<b>Halogen compounds</b>	Intermediate disinfection, corrosive skin and eye irritation. Can only use on hard surfaces
<b>Hydrochlorous acid (HOCl)</b>	Clean, deodorise and intermediate disinfectant effective against viruses similar to COVID-19 on hard, non-porous surfaces. Also applied for wound healing.
<b>Hydrogen peroxide</b>	High-level disinfection, compatible with plastic surfaces but not metal surfaces. Serious eye damage with contact
<b>Iodophors</b>	Discolouration and corrosive
<b>Formaldehyde</b>	Toxic
<b>Peracetic acid</b>	Good materials compatibility, but can cause serious eye and skin damage
<b>Phenolics</b>	May degrade plastics and etch glass
<b>Quaternary ammoniums</b>	Not recommended and can cause damage to materials
<b>Sodium hypochlorite (bleach)</b>	Intermediate-level disinfection, inexpensive but corrosive, damages plastics, vinyl fabrics and irritating to skin and eyes
<b>Super-oxidised water (e.g. Ozone)</b>	High-level disinfection requires equipment and additional cost—expensive

(The information outlined in the table above was extracted from the EPA List N document)

### Take Home Information to the Oral Health Care Profession

Alcohol as a surface disinfectant is not recommended because it fixates protein and also due to its volatility and flammability.

1. NaOCl (bleach) is inexpensive but not compatible with plastics and fabrics. It is, furthermore, corrosive and may cause irritation of eyes and skin (intermediate-level disinfectant).
2. HOCl (Hydrochlorous acid): moderately expensive, compatible with fabrics, plastics and metals (high-level disinfectant).
3. H<sub>2</sub>O<sub>2</sub> (Hydrogen peroxide): Compatible with plastics and elastomers but poor metal compatibility and serious eye damage with contact (high-level disinfectant).

Considering efficacy (virucidal and bactericidal), ease of use, cost, compatibility with plastics and metals, and safety—HOCl comes out with most boxes ticked!

### Hard Surfaces (Floors/Chair and Accessories/Cabinets/Fixed Fixtures)

#### Post Contact

1. Cleaning is an essential part of disinfection. Organic matter can inactivate many disinfectants. Cleaning reduces the soil load, allowing the disinfectant to work. Removal of organisms, such as the virus that causes COVID-19, requires thorough cleaning followed by disinfection.
2. The length of time that SARS-CoV-2 (the cause of COVID-19) survives on inanimate surfaces will vary depending on factors such as the amount of contaminated body fluid (e.g. respiratory droplets or soiling present and environmental temperature and humidity). SARS-CoV-2 can remain viable in aerosol and survive up to three days on inanimate surfaces at room temperature, with a greater preference for humid conditions (Van Doremalen, Bushmaker, Morris et al., 2020) (<https://doi.org/10.1056/NEJMc2004973>).
3. Corona viruses can survive on surfaces for many hours but are readily inactivated by cleaning and disinfection. It is good practice to routinely clean surfaces as follows:
  - Clean frequently touched surfaces with detergent solution (Diagram 2).
  - Clean general surfaces and fittings when visibly soiled and immediately after any spillage.

**About SADA:**

The South African Dental Association (SADA) is the peak national body for the dental profession in South Africa representing the large majority of active registered dentists, both in the public and private sectors in South Africa. It is a non-profit professional association with voluntary membership organisation represented by a total of 11 branches, one in every province of the Republic of South Africa, with Gauteng and Eastern Cape provinces having two branches each. The Association represents the interests of both the oral health profession and its members in South Africa.

Our membership covers General Practitioner dentists, Specialist practitioner dentists (Orthodontics, Prosthodontics, Maxillo Facial & Oral Surgery and Periodontics). Since 2020, our membership is open to all allied oral health practitioners (Oral Hygienists, Dental Therapists, Dental Technicians, and Dental assistants). Membership is open and FREE for all oral health students.

The Association actively encourages continuing professional advancement of dentists and allied oral health practitioners, and to this end, it regularly holds **Branch events** for learning and mentoring purposes, an annual international **SADA Dental & Oral Health Congress and Exhibition**. We are the only oral health professional body in Africa which publishes an internationally accredited professional journal (**The South African Dental Journal - SADJ**) with circulation locally, the rest of Africa and internationally.

The Association is recognised by the public and relevant stakeholders as the authority in providing information and advice about oral health. SADA is affiliated to **The Fédération Dentaire Internationale (FDI) World Dental Federation** and the **FDI African Regional Organisation (ARO)**.

**Contact:**

The South African Dental Association  
Postal: Private Bag 1, Houghton, 2041, Gauteng, South Africa  
Telephone: +27 (0)11 484 5288  
Email: [info@sada.co.za](mailto:info@sada.co.za)  
[www.sada.co.za](http://www.sada.co.za)