



HYPCHLOR

SODIUM HYPOCHLORITE SOLUTION (GRADE - I)

IS 11673 (PART 1)



CM/L:9800028215



MANUFACTURED BY:

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HYPCHLOR (Sodium Hypochlorite solution, Grade – I) is being widely used in hospitals and nursing home facilities for the disinfection of hard surfaces and blood spillages containing the human immunodeficiency virus or hepatitis B virus.

It has many of the properties of an ideal disinfectant, including a broad antimicrobial activity, rapid bactericidal action, reasonable persistence in treated potable water, ease of use, solubility in water, relative stability, relative nontoxicity at use concentrations, no poisonous residuals, no colour, no staining, and low cost. The active species is undissociated hypochlorous acid (HOCl). Hypochlorites are lethal to most microbes. Especially, viruses and vegetative bacteria are more susceptible.

Clinical uses in health-care facilities include hyperchlorination of potable water to prevent *Legionella* colonization, chlorination of water distribution systems used in hemodialysis centers, cleaning of environmental surfaces, disinfection of laundry, local use to decontaminate blood spills, disinfection of equipment, decontamination of medical waste prior to disposal, and dental therapy. Despite the increasing availability of other disinfectants, hypochlorites continue to find wide use in hospitals.

According to estimates, hospital-acquired infections (HAIs) kill more people each year globally than car accidents, breast cancer or Aids. HAIs can develop 48-72 hours after patient admission and up to ten days after hospital discharge. Hospitals, community clinics, nursing homes and centres handling outpatient surgery, dialysis and rehabilitation are all possible breeding grounds for multiple drug-resistant microbes.

The most common HAIs are:

- central line-associated bloodstream infections
- methicillin-resistant *Staphylococcus aureus* (MRSA)
- vancomycin-resistant *Enterococci* blood stream infections
- *Clostridium difficile*
- surgical site infections (SSIs)

HYPCHLOR is one of the best defences against hospital-acquired and community-acquired *Clostridium difficile* infections. Having a broad spectrum of antimicrobial activity, sodium hypochlorite is inexpensive and has low toxicity.

Technical Specifications

PARAMETER	VALUE
Relative density (at 25 °C)	1.07 to 1.18
Available Chlorine (as Cl), percent, mass by volume	4.0 to 6.0
Total Chlorine, percent, mass by volume (as Cl)	4.0 to 6.0
Alkali (as NaOH), g/L, Min	1.0
Free Sodium Carbonate (as Na ₂ CO ₃), g/L, Max	0.5
Iron (as Fe), ppm, Max	0.4
Sodium Chlorate (as NaClO ₃), g/l, Max	0.2
Appearance	Colourless to Yellow
Odour	Chlorine like
Biodegradable	Yes
Class of Wetting Agent	Anionic
Detergency	Excellent
Solubility in water	Miscible
Wetting ability	Excellent

Additional information like MSDS of HYPCHLOR or details of its applications in other non-healthcare settings such as hotels, restaurants, universities, schools, food industry can be made available on request.

Certification:

HYPCHLOR has been granted the ISI mark (CM/L No. 9800028215) as it conforms to the standards prescribed in the standard IS 11673(Part 1):1992. Presence of this ISI certification mark, known as Standard Mark, on HYPCHLOR is an assurance of conformity to the specifications. The conformity is ensured by regular surveillance of the licensee's performance by surprise inspections and testing of samples, drawn both from the market and factory.

Comparison of HYPCHLOR with normal Phenolic disinfectants:

S. NO.	PHENOLIC DISINFECTANTS	CHLORINE COMPOUNDS (SODIUM HYPOCHLORITE)
1.	Phenolic disinfectants have been used for many years as disinfectants	Chlorine containing solutions have universal disinfectant activity and are good sterilants
2.	They leave sticky residue on surfaces following treatment	They do not leave any sticky residue on surfaces following treatment
3.	Concentrated compounds are highly toxic, corrosive substances, which are easily absorbed through the skin	Concentrations are optimised so that these are not toxic
4.	These are used in higher concentrations (1.0 – 5.0 %)	These are used at low concentrations (below 1%)
5.	The contact time required to kill bacteria is more and results vary in Broad spectrum bacteria and non-lipid viruses	The contact time to kill bacteria is less and results are good with Broad spectrum bacteria and non-lipid viruses too
6.	Phenolic disinfectants can be applied to work surfaces, Dirty Glassware, Portable equipment, Fixed equipment surfaces but not used on liquids for discard.	These can be applied and give better results on Work surfaces, Dirty Glassware, Portable equipment, Fixed equipment surfaces and can also be used on liquids for discard.

INACTIVATION PROPERTIES:

DISINFECTANT		PRACTICAL REQUIREMENTS		INACTIVATES				
Liquid	Use Dilution	Contact Time (min)		Vegetative Bacteria	Lipoviruses	Nonlipid Viruses	Mycobacteria	Bacterial Spores
		Lipovirus	Broad Spectrum					
Phenolic Compounds	1.0% 5.0%	10	Not Effective	Yes	Yes	Variable	No	No
HYPCHLOR	0.05%	10	30	Yes	Yes	Yes	Yes	Yes

Procedure for preparing/using diluted HYPCHLOR:

Recommended dilution	1:100 dilution of 5% sodium hypochlorite is the usual recommendation. Use 1 part HYPCHLOR to 99 parts cold tap water (1:100 dilution) for disinfection of surfaces
Available chlorine after dilution	For HYPCHLOR preparations containing 5% sodium hypochlorite, a 1:100 dilution will yield 0.05% or 500 ppm available chlorine
Contact times for different uses	
Disinfection by wiping of nonporous surfaces	Contact time of ≥10 min is recommended
Disinfection by immersion of items	Contact time of 30 min is recommended

1. Use a mask, rubber gloves, and waterproof apron. Goggles also are recommended to protect the eyes from splashes.
2. Mix and use HYPCHLOR solutions in well-ventilated areas.
3. Mix HYPCHLOR with cold water.
4. HYPCHLOR should be diluted as shown in the table

Use of HYPCHLOR	PURPOSE
Antisepsis	Reduction of risk of pathogen transmission
Decontamination of blood spills	Prevention of acquisition of bloodborne pathogens, especially HIV and hepatitis B and C viruses, in the event of a sharps injury or contact with nonintact skin
Syringes and needles used for drug administration	Reduction of risk of cross-transmission of HIV to drug users unwilling or unable to use sterile, single-use needles and syringes
Environmental surfaces in room	Reduction of risk of cross-transmission of <i>C. difficile</i> in outbreak situations via the hands of health-care personnel
Regulated medical waste	Reduction of microbial load associated with regulated medical waste
Laundry	Reduction of potential risk of cross-transmission of pathogens and of acquisition by laundry workers
Dental appliances	Disinfection of contaminated dental equipment to prevent potential disease transmission to health-care workers and cross-transmission to other patients
Chlorination of hemodialysis water and machines	Reduction of bacterial growth and prevention of bacterial sepsis
Hydrotherapy tank	Reduction of risk of cross-transmission associated with shedding of pathogens into bathing water
Potable water	Control of waterborne pathogens
Hyperchlorination of potable water supplies	Control of <i>Legionella</i> spp. in outbreak situations
Decontamination of vase water	Reduction of potential risk that fresh flowers would serve as a reservoir of gram negative pathogens
Tonometers	Prevention of cross-transmission of microorganisms, especially adenovirus and herpesviruses
Manikins	Prevention of potential cross-transmission of herpes simplex virus and other pathogens in trainees practicing mouth-to-mouth resuscitation
Dental therapy	Disinfection of the root canal

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