

Essential drugs / Drugs for external use, antiseptics and disinfectants

CHLORINE-RELEASING COMPOUNDS (NaDCC, HTH, bleach, chlorinated lime)



Therapeutic action

– Disinfectants

Indications

– Disinfection of medical devices, instruments, linen, floors and surfaces

Forms and strengths

– The potency of chlorine disinfectants is expressed in terms of active chlorine in either:

- percentage (%)
- g/litre or mg/litre
- parts per million (ppm)
- chlorometric degree (1°chl. = approximately 0.3% active chlorine)

1% = 10 g/litre = 10 000 ppm

1 mg/litre = 1 ppm = 0.0001%

– The most widely used chlorine disinfectants are:

- Sodium dichloroisocyanurate (NaDCC), 1,67 g tab.....1 g active chlorine/tab
- Calcium hypochlorite (HTH), granules.....65-70% active chlorine
- Sodium hypochlorite solutions (liquid bleach):
 - concentrated bleach36°chl. = 9.6% active chlorine
 - bleach9°chl or 12°chl. = 2.6% or 3.6% active chlorine
- Chlorinated lime, powder25-35% active chlorine

Preparation and use

– The concentration required depends on the amount of organic material present (how clean/unclean the surface is).

– The active chlorine content must always be checked on the product packaging in order to adjust the dilution if necessary.

- Prepare solutions with cold water in non-m
- A deposit in HTH solutions and chlorinated

	Clean medical devices, equipment, surfaces and linen (after cleaning)	Surfaces, beds, utensils in case of cholera (after cleaning)	Surfaces, equipment contaminated with blood and other body fluid spills (before cleaning)	Corpses, excreta, boots in case of cholera
Concentration required, expressed in active chlorine	0.1% = 1000 ppm	0.2% = 2000 ppm	0.5% = 5000 ppm	2% = 20 000 ppm
NaDCC (1 g active chlorine/tablet)	1 tab/litre water	2 tab/litre water	5 tab/litre water	20 tab/litre water
Calcium hypochlorite (70% active chlorine)	15 g/10 litres = 1 level tablespoon for 10 litres water	30 g/10 litres = 2 level tablespoons for 10 litres water	7.5 g/litre = ½ tablespoon for 1 litre water	300 g/10 litres = 20 level tablespoons for 10 litres water
Bleach (2.6% active chlorine)	For 5 litres: 200 ml + 4800 ml water	For 5 litres: 400 ml + 4600 ml water	For 1 litre: 200 ml + 800 ml water	For 5 litres: 4000 ml + 1000 ml water

For more information, see [Antiseptiques et désinfectants](#), Part two.

Precautions

- Handle concentrated products with caution (avoid jolts and exposure to high temperatures or flames).
- Do not bring dry products, particularly HTH and chlorinated lime, in contact with organic materials (e.g. corpses): risk of explosion.
- Avoid inhaling vapours and dust when opening or handling the containers.

Remarks

- Sodium dichloroisocyanurate (NaDCC) is less corrosive than the other products.
- Bleach or concentrated bleach, or if not available HTH, may be used to prepare an antiseptic solution at 0.5% active chlorine (as substitute to Dakin's solution), provided sodium bicarbonate (one tablespoon per litre) is added to the final solution to neutralise the alkalinity (e.g. for one litre: 200 ml of bleach 2.6% + 800 ml distilled or filtered water, or if not available, boiled and cooled water + 1 tablespoon of sodium bicarbonate).
- Chloramine T (powder or tablet, 25% active chlorine) is another chlorine-releasing compound used above all as an antiseptic.
- Trichloro-isocyanuric acid (TCCA), in powder or granules (90% active chlorine), is very similar to NaDCC,

but its use is limited due to its poor solubility.

– Storage: in airtight, non-metallic containers

- 

Chlorinated lime, bleach and concentrated bleach are unstable. HTH is more stable. NaDCC is by far the most stable