# Technical Bulletin

# Cidal

## Quaternary Sanitiser

### Product Description:

CIDAL (brand of Benzalkonium Chloride which meets B.P.* and U.S.P.** requirements) is a refined antiseptic and sanitiser for use in all food and beverage processing plants. The formulation, odourless and non toxic is use dilution, has broad spectrum of applications for the purpose of chemical disinfection and odour control where odours occur as a result of bacterial decomposition.
CIDAL is a 10% active quaternary ammonium compound effective to use across a wide temperature range, from 10 to 90℃. Quaternaries vary considerably in their germicidal effectiveness. CIDAL contains no such corrosive elements as phenol, iodine, mercury or other metals and is therefore free from the disadvantages of such compounds.

Phenol Co Efficients were conducted in order to assist in establishing the disinfectant efficiency of CIDAL against the following representative pathogenic organisms:

| TEST ORGANISM | GRAM STAIN | PHENOL CO EFFICIENT |
|---|---|---|
| Salmonella typhi | Gram-negative | 50 (R.W.) |
| Staphylococcus aureus | Gram-negative | 80 |
| Escherichia coli | Gram-negative | 62 |
| Pseudomonas aeruginosa | Gram-negative | 38 |

Further tests were conducted by Modified Phenol Co Efficient Method showing the dilution rate at which CIDAL is efficacious against a representative group of pathogens in the presence of water and in the presence of various organic contaminants:

Bacterial Activity of Cidal
N.B. It should be noted that CIDAL, together with all quaternaries, is ineffective against Mycobacterium tuberculosis and bacterial spores.

| TEST ORGANISM | DILUTION OF CIDAL BACTERICIDAL IN 10 MINS. AT 20°C IN WATER | | PHENOL CO EFFICIENT |
|---|---|---|---|
| | Pharmacide IC | Phenol | |
| Salmonella typhi | 1 : 4,500 | 1 : 90 | 50 |
| Staphylococcus aureus | 1 : 4,800 | 1 : 60 | 80 |
| Escherichia coli | 1 : 4,300 | 1 : 70 | 62 |
| Pseudomonas aeruginosa | 1 : 1,500 | 1 : 40 | 38 |
| Streptococcus faecalis | 1 : 1,000 | 1 : 50 | 20 |
| Shingella sonnei | 1 : 3,000 | 1 : 80 | 37 |
| Salmonella pullorum | 1 : 1,800 | 1 : 90 | 20 |
| Salmonella paratyphi | 1 : 1,000 | 1 : 80 | 12 |
| Brucella abortus | 1 : 4,000 | 1 : 100 | 40 |



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## Application:

Influence of Organic Contaminants
Table 2

| ORGANISM | CONTAMINANT OR DILUTENT | DILUTION OF CIDAL BACTERICIDAL IN 10 MINS. AT 20°C |
|---|---|---|
| Salmonella typhi | Distilled water control<br>1% hen manure | 1 : 4,500<br>1 : 2,000 |
| Staphylococcus aureus | Distilled water control<br>1% skimmed milk<br>1% cow manure | 1 : 4,800<br>1 : 2,400<br>1 : 2,800 |
| Salmonella pullorum | Distilled water control<br>1% hen manure | 1 : 1,800<br>1 : 700 |

**General surface disinfection of refrigerators, food racks and bins, food machinery**
Apply freely over surface or soak articles in bath of CIDAL diluted 1 : 500.

**Sanitising food and drink processing equipment**

1. Clean and rinse.
2. Apply to surface manually, or circulate through equipment and pipes or immerse equipment in bath.
3. If equipment is of such a nature that large quantities of CIDAL solution will be retained (eg. in circulating systems) flush with fresh water, otherwise air dry.
4. Dilutions:
   Metal, Glass, Plastics etc. 1: 400-500 (2ml per Lt – 2.6ml per Lt)
   Porous Surfaces 1: 200

**Meat Processing industry. Mould control on shrouds used for covering carcasses. Prevents mould growth on the shrouds and consequent contamination of carcasses**

1. Clean and rinse. (If soap used 2 or 3 rinses should be adopted).
2. Add CIDAL diluted 1 part in 1000 to final rinse.

**Mould and mildew control on walls, floors etc.**
Swab or spray with CIDAL diluted 1 : 400.

**Laundry Anti-Static Fabric Spray**
Effectively reduces static electricity caused by friction on man-made fabrics and polymers.
Do not dilute; **USE NEAT. Gloves, Safety Glasses; and if being used as a spray, a Protective Mask.**

**Laundry Hygiene Rinse - ANTIBACTERIAL ACTION**
The broad-spectrum activity of CIDAL over Gram negative bacteria, dermatophytes, basidiamycetous and anamorphic yeasts, that are major causes of cosmopolitan infections. The effective dilutions of CIDAL, in order to cause 95-100% growth inhibition of micro-organisms at concentrations of the order of log 3 range between 10mL of Cidal per 10 Litres of water (0.1%) to 2mL of Cidal to 10 Litres of water (0.02%). The 0.1% dilution is recommended for woollen items. The optimum temperatures for hand and machine-washing ranged between 30°C - 60°C.


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The range of mean growth inhibition on each fabric washing temperature and product dilution was 91-95% (corresponding to a growth reduction factor of 1.91-1.95). Dermaphytes were inhibited by 100% (growth reduction factor 2). Ordinary household detergents, without the supplementary use of CIDAL resulted in 2 - 5% mean growth inhibition of the microorganism load on each tested fabric at each washing effort and temperature.
Dermatophytes (fungi that colonize the hair, nails, and other outer layer of the epidermis), these fungal infections are informally known as tinea or ringworms were successfully inhibited using CIDAL at temperatures ranging between 14°C and 30°C.
50mL of CIDAL diluted in 70 Litres of water (70ppm or 0.1% dilution) would be reasonably expected to cover the following micro organisms.-5-

**Bacteria**
Aeromonas puntata
Leuconostoc messenteroides
Listeria monocytogenes
Bacillus mycoides
Propionibacterium acnes
Proteus mirabilis
Bacillus subtilis
Staphylococcus aureus

**Yeasts**
Candida albicans
Candida krusei
Torula rubra
Rhodotorula mucilaginosa
Sacchararomyces bailli

**Mould Fungi**
Mucor raemosus
Penicilium glaucum
Trichophyton mentagrophytes

**Quaternary Sanitiser Deodoriser : Deodorising food processing plants, coops, hatcheries, animal pens, killing floors and boning rooms in abattoirs, vegetable, fruit and fish canneries**

1. Hose down walls, equipment, floors, etc. brushing if necessary to remove soil.
2. Swab or spray with CIDAL diluted 1 : 500 = 2ml per Lt of water.

**Algae control in recirculated final rinse water used in frozen vegetable processing plants**

Dose final rinse water with CIDAL to a concentration of 1 : 20,000. Maintain concentration within limits of 1 : 20,000 to 1 : 40,000 by CC CIDAL test method which is available on demand.

**Quaternary Sanitiser – Warewashing**
Sanitising Dishes, Glassware etc.

1. Clean in usual manner
2. Rinse
3. Dip articles in CIDAL undiluted 1 in 500 2ml per Lt of water.
4. Allow to air dry. Do Not wipe or rinse.

Where a surface has been washed with soap, it should be thoroughly rinse with water, or alcohol, before applying dilute solutions of CIDAL.
Extensive studies have been made on the toxicology of CIDAL which show a wide margin between biocidal effective concentrations and those likely to be toxic or irritating.

## Food Safety Statement/Fitness For Purpose:

1) An FFP - Fit For Purpose Statement is available for this product when used in an export meat facility.

When used in accordance with the directions described in this product technical bulletin, this product complies with these recognised food safety parameters.

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