



Disinfection SERVICE REPORT

CKR Dormitory @ Woodlands E1

Site Address: 2 Woodlands Industrial Park E1
Commencement Date: 13th April 2020
Completion Date: 13th April 2020

GREENCARE PEST CONTROL & CLEANING PTE LTD
60 Albert Street #08-02 OG Albert Complex
Singapore 188969
Tel: 69208656 | 69208657

Email: enquiry@greencare.com.sg



Disinfecting Covid-19

TABLE OF CONTENTS

1	INTRODUCTION	PAGE 1
2	EFFICACY TESTS OF TECcare CONTROL – Chemical Used	PAGE 2
3	Method Statement	PAGE 3 - 4
4	Summary Report	PAGE 5



Our Solutions:

TECcare® CONTROL Antimicrobial Technologies

In formal testing at accredited laboratories to the internationally recognized **EN14476** Virucidal Efficacy test protocol, TECcare CONTROL is proven to kill 99.99% of enveloped viruses (such as COVID-19) and non-enveloped viruses within minutes of contact.

TECcare CONTROL has already been proven to be effective against several different types of coronavirus including;

- **SARS-associated coronavirus**
- **Human coronavirus (VR-740)**
- **Canine coronavirus (VR-809)**

Since Coronavirus (COVID-19) is a new virus there is NO commercially available virucidal efficacy test that can be used for any disinfectant against this specific virus at this point in time.

As a specific COVID-19 efficacy test does not currently exist, no disinfectant on the market can claim to be effective against the specific COVID-19 virus causing the current pandemic.

However, since Coronavirus (COVID-19) is classified as an 'enveloped virus', its physical structure is similar to other 'enveloped viruses' which in this case means that the COVID-19 capsid containing the nucleic acid essential to viral replication is surrounded by a lipid membrane, similar to other enveloped viruses such as influenza and the three coronaviruses listed above.

Introduction

Greencare Pest Control & Cleaning Pte Ltd has committed itself to the maintenance of a high standard of disinfection services at **CKR Dormitory @ Woodlands E1** amid the current Covid-19 pandemic world-wide. Health and safety of the personnel at the infected area which includes CKR workers and Greencare technicians are our utmost priority when conducting the disinfection. We are also committed in taking all the necessary procedures to ensure that all personnel involved at the infected site are exposed to the lowest practicable level of risk.

Standard Protocol to Observe NEA Guide Lines:

Areas where the confirmed case has visited, will be sealed off. This will prevent unsuspecting persons from being exposed to those surfaces;

- Disinfection crew are properly attired
- Equipment are cleaned after use;
- While cleaning using disinfection, all windows are opened for ventilation;
- Wipe down of high touch areas with disinfectant in which we are using **TECcare Control**. (Example of high touch areas: Door knobs, Switches, lift buttons, staircase railing, etc)
- The area will be left untouched for the next 2 hours after **TECcare Control** has been used to kill the Coronavirus of a confirmed case.



Disinfection of Covid-19 Carried Out @ CKR Dormitory



TECcare CONTROL

(Note to Reviewer: Marketing claims may be used on the front panel.)

Cleaner • Disinfectant • (Non-Food Contact) Sanitizer
 • Deodorizer • Fungicide • Mildewstat • Virucide*

ACCEPTED

11/21/2016

Under the Federal Insecticide, Fungicide and Rodenticide Act as amended, for the pesticide registered under EPA Reg. No. 85343-1

ACTIVE INGREDIENTS:

Didecyl Dimethyl Ammonium Chloride.....	10.14%
Alkyl (50% C ₁₄ , 40% C ₁₂ , 10% C ₁₀)	
Dimethyl Benzyl Ammonium Chloride.....	6.76%

OTHER INGREDIENTS:..... 83.10%

TOTAL: 100.00%

MICROBIAL CLASS	ANTIMICROBIAL EFFICACY TEST*	CONTACT TIME (MINUTES)	LOG REDUCTION
BACTERIA (Gram-positive/ Gram-negative)	EN 1276 ¹⁹	1	>6
	AOAC - Bactericidal ²⁰	10	>6
VIRUSES (enveloped and non-enveloped)	EN 14476 ²¹	5	>4
	AOAC - Virucidal ²²	5	>4
FUNGI (mould and yeast)	EN 1650 ²³	1	>5
	AOAC - Fungicidal ²⁴	10	>6
BACTERIAL SPORES	EN 13704 ²⁵	60	>3

TABLE 1. Antimicrobial efficacy of TECcare®

How effective is TECcare® CONTROL

against microorganisms? TECcare® CONTROL is a high level, broad spectrum disinfectant cleaner which is effective against all microbial classes up to and including bacterial spores. See Table 1 for a summary of the microbial classes and the results of extensive in-vitro testing performed at independent, accredited laboratories.

* All testing was performed using hard water and under dirty conditions in order to present the toughest challenge to the TECcare® CONTROL
 *LOG REDUCTION OF > 4 means it can kill 99.99% of the virus

The prolonged effect of TECcare CONTROL

TECcare CONTROL delivers a prolonged antimicrobial effect on all surfaces after application. What this means for the users is that it continues to work and kills or attenuates microbes for hours or even days after it has been used on a surface.

Therefore, any virus particles falling onto, or being deposited onto a surface that has been cleaned and disinfected with TECcare CONTROL will come under attack from the disinfectant and therefore be less likely to affect the next person to touch them.

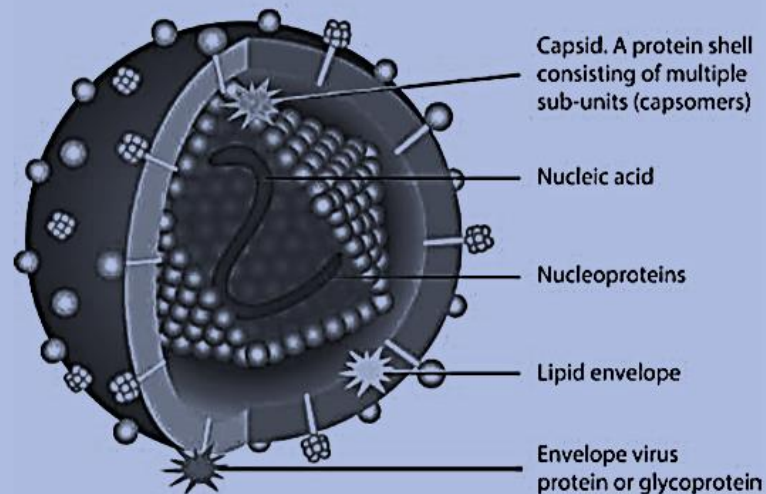
EFFICACY TESTS OF TECcare® CONTROL

TECcare® CONTROL is a high-level disinfectant technology platform offering safe, effective, user friendly single step cleaning and disinfection across a wide range of industries from healthcare to educational establishments to food processing to veterinary science. The TECcare® CONTROL technology platform is based around the quaternary ammonium compounds didecyl dimethyl ammonium chloride (DDAC) and benzalkonium chloride (BAC) with an adjuvant effect to enhance its antimicrobial efficacy.

Key features of the TECcare® CONTROL technology

In addition to very high levels of antimicrobial efficacy, TECcare® CONTROL is fragrance free, chlorine free, alcohol free and exhibits the following key qualities when in use; non-corrosive, non-irritant, non-toxic, food safe, safe in use, cost effective, excellent levels of user acceptance with a prolonged antimicrobial effect up to 28 days and excellent materials compatibility.

Figure 2



How does TECcare® CONTROL affect microbes?

TECcare® CONTROL is a powerful lytic agent which is based on the quaternary ammonium compounds benzalkonium chloride and didecyl dimethyl ammonium chloride. Quaternary ammonium compounds have multiple effects and points of action within the microbe (see Figure 2) which include:

- Inactivation of energy-producing enzymes
- Denaturation of essential microbial proteins
- Physical disruption of membrane lipids
- Bacterial cell walls

Proteins and lipids are essential components of bacteria, viruses, fungi and bacterial spores. Significant damage to these key microbial components is often fatal for the organism. TECcare® CONTROL causes rapid and significant changes at multiple sites within the microbe. The magnitude of this effect is so great that it is typically lethal to the microbe within minutes of contact (see Table 2).

ACTIVITY	LOCATION
DISINFECTION OF CONFIRMED COVID -19 CASE @ DORMITORY	2 WOODLANDS INDUSTRIAL PARK E1 - DORMITORY CKR CONTRACT SERVICES PTE LTD

3. METHOD STATEMENT

In the event of a confirmed case was in the premises, the management would need to seal off (where possible) the areas where the person has been. Open the door and windows to the affected areas (if possible) and leave the areas undisturbed for at least 8 hours. Cleaning and disinfection should be carried out after the area has been aired. There is no need for airing and special cleaning of other areas. Routine cleaning of these other areas can be carried out without additional PPE than what is usually used. (Extracted from MOH PANDEMIC READINESS AND RESPONSE PLAN FOR INFLUENZA AND OTHER ACUTE RESPIRATORY DISEASES (REVISED APRIL 2014).

Preparation

A. Materials & Equipment:

1. Chemicals

- TECcare Control
- TECcare Ultra

2. Equipment's

- ULV Mister (Airostar ULV Cold Fogger 20 – 60 microns adjustable)
- VP200ES Electrostatic Mister (40 – 110 microns adjustable)
- VP300ES Electrostatic Mister (40 – 110 microns adjustable)



Airostar ULV



VP200ES Electrostatic Mister



VP300ES Electrostatic Mister

3. Disposable Cleaning Cloths

4. Hot Water Carpet Extraction Machine (Optional)

5. Disposable Mop Head

6. Hand Sanitizer

B. Personal Protective Equipment:

Disposable Gloves	Goggles	Masks (N95)	Disposable Coverall	Foot Cover
✓	✓	✓	✓	✓

C. Disposal Materials

Biohazard Waste Bag	Cable Tie	Permanent Marker	Chemical Treatment / Incineration
✓	✓	✓	✓

D) Record

- ✓ To Complete Perform Disinfection Cleaning Record Form
- ✓ Briefing Record (E.g. Safety Briefing Before Start Work)

E) Donning Personal Protective Equipment

- ✓ Perform donning of PPE at the cold area

F) Closure of Affected Area

- ✓ Display signages on visible area
- ✓ All tenants must refrain from entering the affected area
- ✓ Off Aircon or any Centralized Air ventilation system
- ✓ Keep windows open for ventilation if possible

G) Perform Chemical Misting or Eco Statics Application (Optional)

- ✓ TECcare Control Solution with ULV Mister or Electrostatic Mister
- ✓ Ensure all possible area are misted
- ✓ Leave the area closed for 60 mins for chemical to settle and contact time
- ✓ Leave the infected area and perform doffing of PPE at the cold area
- ✓ Disposed PPE into Biohazard waste bag and fasten it with cable tie
- ✓ Double-bagged by using another biohazard bag and fasten with a cable tie
- ✓ Place used Biohazard waste bag in secured area
- ✓ Perform hand hygiene

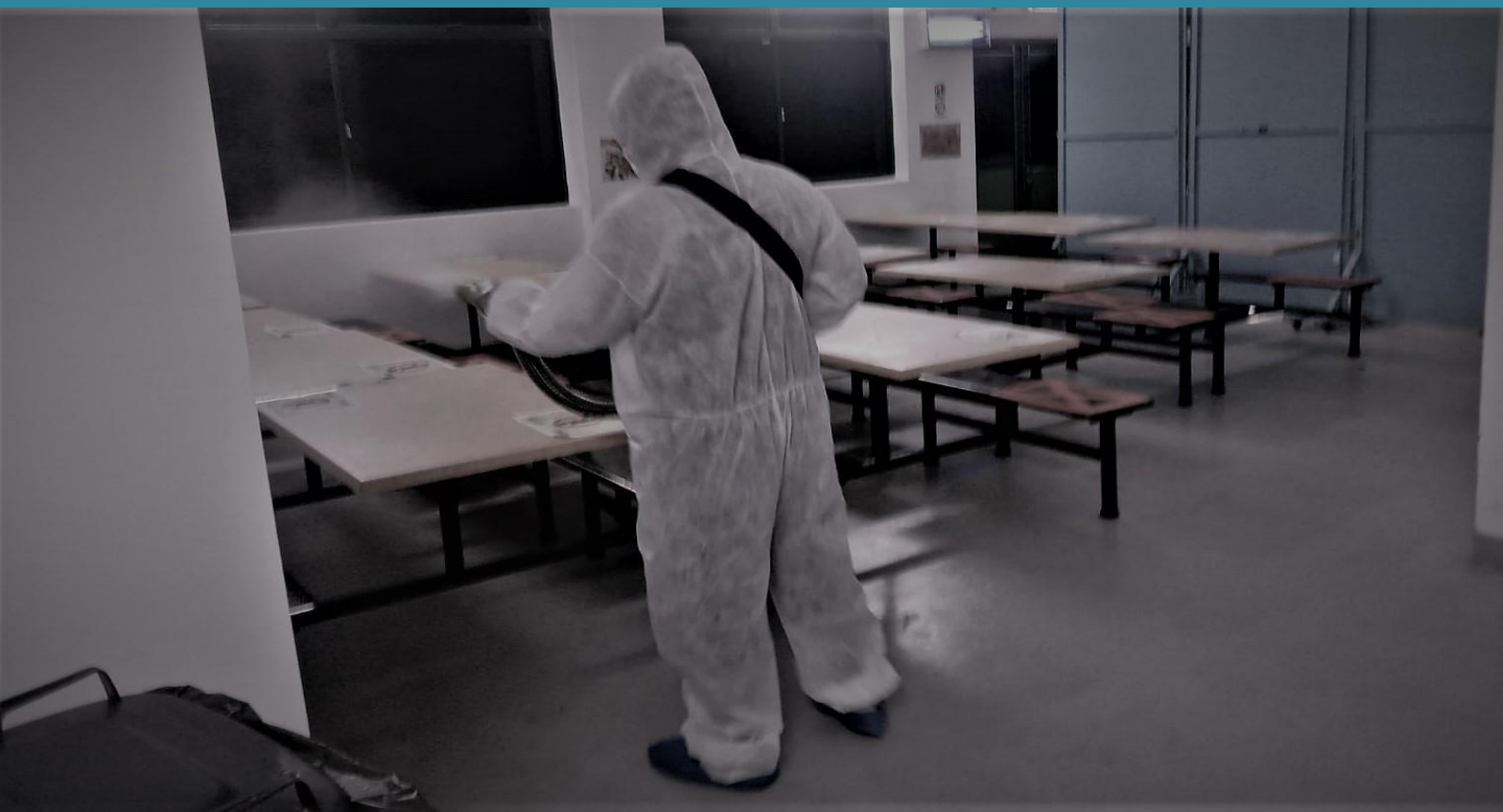
H) Perform Wipe down

- ✓ Using disposable cleaning cloth with TECcare Control Solution
- ✓ Wipe clean all high frequency touch areas; it leaves a layer of chemical coat on the surface to protect the environment lasting up to 28 days in lab test environment.

I) Reinstate Work

- ✓ Leave the infected area and perform doffing of PPE at the cold area.
- ✓ Disposed PPE, unwanted items in the premises and all porous materials used into Biohazard waste bag and fasten it with cable tie. Double-bagged by using another biohazard bag and fasten with a cable tie. Place used

Area of Disinfection Completed @ CKR Dormitory



Summary Report:

- ✓ Chemical : **TECcare Control – Quantity used 50 liters**
- ✓ Equipment : Airostar ULV Cold Fogger – 20 micron spray nozzle
- ✓ PPE : Full Set – Disposable coverall / gloves / mask-95 / goggles / foot cover
- ✓ Misting : Entire dormitory including – staircases / corridors / toilets / compound
- ✓ Wipe down : High touch areas including – door knobs / switches / railing / etc
- ✓ Hand hygiene : Sanitizing spray with disinfectant for every resident and worker



Disinfected Area

- ✓ Worker's Quarters – level 3-4
- ✓ Entire 2nd level – Resting Area
- ✓ Level 1 – Canteen Area
- ✓ All Corridors of every level
- ✓ All staircases – left & right side
- ✓ All Toilets Area
- ✓ Walkway
- ✓ Dormitory Compound Area

