Summary of
Bactericidal, Tuberculocidal
Virucidal, Fungicidal Studies Performed on
Opti-Cide³®
Surface Disinfectant and Cleaner
against human pathogens

This product meets the Bloodborne Pathogen Standard of the Occupational Safety and Health Administration (OSHA), US Department of Labor and is produced following FDA Good Manufacturing Practices in an EPA Establishment Facility. It is registered as such with the US EPA. Opti-Cide³ is registered and approved in all 50 states.

Updated April 2016

Description

Opti-Cide³ is the registered brand name for a proprietary antimicrobial liquid chemical solution registered to Micro-Scientific, LLC. Opti-Cide³'s unique formulation is produced with a combination of a number of solvents, anionic detergents and other ingredients acting in synergy with three distinct antimicrobial active agents. This formulation may be safely applied directly to surfaces as an effective decontaminant cleaner and disinfectant intended for use in medical/surgical and animal care facilities.

Contact times:

- **Clinical Equipment (Intermediate-Level Disinfection) – 2 minutes**
- **Non-Clinical, Non-Food Hard & Soft Surfaces (Sanitization) – 10 seconds**

Mycobactericidal / Bactericidal / Virucidal / Fungicidal Efficacy Studies on File

- Acinetobacter baumannii
- Avian Influenza Virus
- Escherichia coli (E. coli ESBL)
- Hepatitis B Virus (HBV),
- Hepatitis C Virus (HCV)
- Herpes Simplex Virus (HSV-2)
- Human Immunodeficiency Virus (HIV-1)
- Influenza A Virus
- Klebsiella pneumoniae – Carbapenem Resistant Strain (KPC)
- Listeria
- Methicillin Resistant Staphylococcus Aureus (MRSA)
- Mycobacterium tuberculosis (TB)
- Pseudomonas aeruginosa
- Rhinovirus
- Rotavirus
- Salmonella entérica
- Serratia marcescens
- Staphylococcus aureus
- Swine Influenza A Virus (H1N1 strain)
- Trichophyton mentagrophytes
- Vancomycin Resistant Enterococcus faecalis (VRE)

Toxicity / Irritation Study Titles

The overall results of the listed studies show Opti-Cide^3 disinfectant solution to be safe for use when used as directed.

"**Acute Oral Toxicity**"
Opti-Cide^3 was tested for potential acute oral toxicity in accordance with the procedure outlined in the Pesticide Assessment Guideline, US EPA. No signs of toxicity were exhibited during the 14-day observation period of this study. Based on the results, the acute oral toxicity LD 50 of Opti-Cide^3 is greater than 5g/kg of body weight. This product is not considered an oral toxin.

"Acute Inhalation Toxicity"
An acute Inhalation Toxicity Study was conducted to determine the potential for Opti-Cide^3 to produce toxicity via the inhalation route at an exposure level of 2.0 mg/L. Based on the results, the single exposure Acute Inhalation LD 50 of the test solution is greater than 2.08 mg/L. The test results show this product to be categorized in the safest category (Cat IV) for chemical pesticides and is not a primary inhalation toxin.

"Primary Dermal Irritation"
Opti-Cide^3 was tested for potential dermal irritation in accordance with the procedures outlined in the Pesticide Assessment Guidelines, US EPA. Test material exhibited no erythema, no edema and no tissue destruction during the observation period. Based on the results obtained in this study, the test material is NOT considered an irritant.

"Acute Dermal Toxicity Study"
Opti-Cide^3 was tested to evaluate its potential dermal toxicity. The specimens did not exhibit any signs of toxicity during the 14-day observation period following exposure. Based on the results of this study the LD 50 is greater than 2.0 g/kg of body weight and is non-toxic to skin.

"Primary Eye Mucosa Irritation Study"
New Zealand Albino Rabbits weighing 2.4-2.5 kg were employed to evaluate the potential irritant effects of Opti-Cide^3 on the eye mucosa. Based on the criteria outlined in Grades for Ocular Lesions: Pesticide Assessment Guidelines, US EPA, Opti-Cide^3 produced some slight reversible eye irritation. The results indicate that Opti-Cide^3 may produce reversible moderate eye irritation when instilled directly into the eye.

Reuse and Bottle Refilling Study

Bottles from 3 lots containing Opti-Cide^3 disinfectant solution were intentionally contaminated with 10 logs of E. coli bacteria, subsequently transferred to other bottles and tested for contamination. In all studies there was no cross contamination between containers and all of the bacteria was killed. This indicates that this solution can safely be transferred from container to container without producing cross-contamination and remains effective in extremely high soil loads.

Stability Studies

In both accelerated and real-time stability testing this product remained stable and efficacious throughout a 2 year period. The studies show this product to be a stable chemistry requiring no expiration dating under EPA requirements.

Additional information may be obtained from:

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