

# Omniceil Equipment Cleaning Guidelines

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Omicell is a leader in medication and supply dispensing automation, central pharmacy automation and IV robotics, analytics software, and medication adherence solutions. Hospitals, post-acute care sites, and pharmacies worldwide rely on Omnicell products to increase patient safety, streamline workflow, and more effectively address drug diversion and regulations.

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## Overview

Cleaning and disinfection of equipment are key to infection control.

This document describes cleaners recommended by Omnicell for cleaning and disinfecting pharmacy equipment.

Pharmacy equipment, which includes medication and supply dispensing systems, is essential to patient care and periodically requires cleaning and disinfection. Simple cleaning might be needed to remove dirt, oils, and fingerprints remaining from general handling and usage. Depending on the environment and location within a hospital, pharmacy equipment might be handled by multiple users in the course of their daily workflow. Within the hospital environment, frequent disinfection is often required to mitigate the transmission of pathogens from user to user or from user to patient. Because pharmacy equipment (for example, Omnicell Mobile Medication Management System, Savvy) allows medication control to be taken to the patient bedside, disinfection might be a key component of infection control.

Most hospitals have internal infection control procedures and practices already established. Refer to these internal procedures and practices for guidance on cleaning and disinfection frequency, disinfection methods, typical cleaning products and any reporting requirements. The cleaners and disinfectants indicated are recommended by Omnicell, but many similar or equivalent cleaners and disinfectants are readily available.

## Cleaning

Simple cleaning is sometimes enough.

Omniceil products are often handled on a daily basis in the hospital environment. Multiple users might interface with Omnicell products and general handling might leave dirt, oils, and fingerprints on surfaces. Many products are used in environments where disinfection requirements are not as stringent, due to their remote proximity to patients and pathogens. Simple cleaning may be all that is necessary to remove dirt, oils, and fingerprints from commonly accessed surfaces such as keyboards, mice, scanners, and touchscreens.



Many disinfecting products are effective at both cleaning and disinfecting equipment surfaces.

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## Disinfection

Blood-borne pathogens are disease-causing microorganisms that are carried in a host's blood, and are transmitted from one host to another through contact with infected blood, tissue, or body fluids.

These pathogens have been identified by the Centers for Disease Control and Prevention (CDC). The CDC is a U.S. federal agency which is responsible to protect public health and safety by providing information to enhance health decisions and by developing and applying disease prevention and control. The CDC has identified the following pathogens as posing the greatest risk:

- Human Immunodeficiency Virus (HIV), which causes Acquired Immunodeficiency Syndrome (AIDS; a condition in humans in which the immune system begins to fail)
- Two of the Hepatitis virus:
  - Hepatitis B (HBV)
  - Hepatitis C (HCV)

The level of infection control to use depends on the type of medical equipment.

## Sanitation: Level 1

The first step is to clean or sanitize the equipment by removing foreign material (e.g. soil/dirt, microorganisms, and any organic matter). This is generally done by using detergents. The sanitation process is used to clean equipment that touches only intact skin (e.g. blood pressure cuffs, stethoscopes, furniture, sinks, and so on); these instruments or equipment can be reused after sanitizing without further disinfection or sterilization.

## Disinfection: Level 2

The second step is to disinfect the equipment by applying a chemical which would destroy most pathogens. This step is required on equipment that may come in contact with intact mucous membranes.

The Environmental Protection Agency (EPA) lists registered antimicrobial products that are effective against certain blood borne/body fluid pathogens. Visit the EPA's website at <http://www.epa.gov> for additional information.

The Department of Labor's Occupational Safety and Health Administration (OSHA) standard 1910.1030 for blood borne pathogens provides a standard for exposure to potentially infectious materials. For the latest information on the compliance directive for blood borne pathogens, visit OSHA's website at <http://www.osha.gov>.

Disinfection kills many, but not all microorganisms on surfaces. It does not destroy spore-forming organisms. For selection of a disinfectant, the level of disinfection required should be determined according to the contamination likely to be present. Disinfection can be classified into three levels:

- LLD (Low Level Disinfectant) - destroys all vegetative bacteria (except tubercle bacilli), lipid viruses, some nonlipid viruses, and some fungi, but not bacterial spores.
- ILD (Intermediate Level Disinfectant) - destroys all vegetative bacteria, lipid enveloped and some nonlipid enveloped viruses, and fungus spores, but not bacterial spores.
- HLD (High Level Disinfectant) - destroys all vegetative bacteria, viruses and other microorganisms, and some bacterial spores.

Blood must be cleaned thoroughly before applying disinfectant. For heavily soiled items, thoroughly clean surfaces prior to disinfection.

## Sterilization: Level 3

The third step is to sterilize the equipment by completely destroying all microbial life including bacterial spores. This is required only for equipment that penetrates the skin (e.g. needles), comes in close contact with mucous membranes or non-intact skin, or comes in contact with the blood stream or with subdermal tissues.

Omniceil pharmacy equipment, including the Savvy Mobile Cart, comes into contact with normal and intact skin; therefore, only level 1 and 2 are required, because the pharmacy equipment can be disinfected and reused without sterilization.

## Disinfection Cleaner Properties

Disinfectants kill microorganisms, while disinfectant cleaners kill germs and clean surfaces. The types of disinfectants are:

- Quaternary Ammonium Chlorides (Quats)
  - Based on the active ingredient benzalkonium chloride
  - Destroy blood-borne pathogens or harmful microorganisms, such as HIV viruses and antibiotic-resistant strains of bacteria
  - Provide a safe and neutral pH
  - Disinfect and clean surfaces without damaging finish
- Chlorine Bleach Solution
  - Good disinfectant but poor cleaner
  - The acidic solution is extremely effective against many types of microorganisms including bacteria, fungi and viruses
  - Requires that surfaces be cleaned prior to their use
  - Lacks detergency, is very corrosive, emits unpleasant odors, attacks and discolors hard surfaces depending on concentration.
- Phenols
  - Used on areas where surfaces are contaminated with blood and body fluids
  - Destroy airborne pathogens, such as those that cause tuberculosis
  - Not as corrosive as Chlorine
  - Can damage surface finishes
- Iodines



- For disinfection
- Can stain surfaces and corrode some metals

Cleaners with higher pH (basic) tend to increase surface luster. Cleaners with lower pH (acidic) tend to degrease and to diminish surface gloss. Neutral-pH cleaners have quats in their ingredients. Cleaners that are formulated for dilution must be properly diluted to be effective. Most active ingredients in concentrated cleaners are activated by water. Too little dilution might leave a sticky surface.

Disinfectant cleaners must be properly applied and safety procedures must always be followed when using these chemicals. To ensure optimum effectiveness, the manufacturer's instructions must be carefully followed when using disinfectants.

### RECOMMENDED DISINFECTANT CLEANERS

Cleaner	Manufacturer, STATE	Mfr p/n	pH	Active Ingredient	Health	Fire	Reactivity	Comments
Oxivir Tb Wipes (12/32 fl. oz)	Diversey, Inc. 8310 16 <sup>th</sup> St. Sturtevant, WI 53177 (tel. 888-352-2249)	4599516	2.5 - 3.5	Benzyl Alcohol, Hydrogen peroxide	0	0	0	Flash pt. >200F; Wipes. EPA# 70627-60
Virex Tb Disinfectant Cleaner (12/32 fl. oz)	Johnson Diversey (Johnson Wax), WI	4743	11.5-11.9	Ammonium Chlorides, Ethylbenzyl, Diethylene Glycol Butyl Ether	2	0	0	Flash pt. 200F; spray. EPA# 70627-2
ZEP Lemon Disinfectant Deodorizing Cleaner	Zep, inc. 1310 Seaboard Industrial Blvd., Atlanta, GA 30318 (tel. 1-877-793-7776)	R02201 (12 qts/case); R02224 (4-1 gal/case)	12.5 - 13.5	Quaternary Ammonium Chloride	3	0	0	1 year minimum shelf life, soluble in cold and hot water; Flash pt.= none; Disinfectant Deodorizing Cleaner, Size 1 gal., Recommended Dilution 1:28 - 1:64, Lemon Fragrance, EPA Registered, Hospital Grade. EPA# 1839-101-1270
Tough Guy Neutral Quaternary Disinfectant	W.W. Grainger, Inc., 100 Grainger Parkway, Lake Forest, IL 60045	2CXC1	10.2	Dimethyl Benzyl Ammonium Chloride, Didecyl Dimethyl Ammonium Chloride, Ethyl Alcohol	3	0	0	Hospital-grade germicidal disinfectant cleaner and deodorant. Flash pt. 200F. Recommended Dilution 1:256, Lemon Fragrance, EPA# 5736-104-84533, Hospital Grade. OSHA compliant.

Cleaner	Manufacturer, STATE	Mfr p/n	pH	Active Ingredient	Health	Fire	Reactivity	Comments
Ramsey FreQuency 256	Diversey, Inc. 8310 16 <sup>th</sup> St. Sturtevant, WI 53177 (tel. 888- 352-2249)	2RV11	7.2 - 8.2	Dimethyl Benzyl Ammonium Chloride, Didecyl Dimethyl Ammonium Chloride, Ethyl Alcohol	3	0	0	Flash pt. 187F; Dilute 1:64; Ramsey is part of JohnsonDiversey (maker of Virex); EPA# 47371- 129-69920; OSHA compliant.

The EPA requires that all disinfectants and disinfectant cleaners be reviewed and registered before they can be offered for sale. Manufacturers must prove a product's effectiveness on various pathogenic organisms when the product is properly diluted according to label directions. These products must have special handling, use, and disposal procedures. The EPA assigns an EPA Registration Number for each product and this number must be displayed on every container of the product. After equipment has been disinfected, care must be exercised to prevent contamination of any surface that may later come in contact with a patient. The disposal of infectious waste must be in accordance with federal, state, or local regulations.

Desirable features:

- One-step disinfectant cleaner; that is, functions as cleaner and disinfectant
- Effective against TB, HBV, HIV-1, MRSA, VRE and other pathogens
- Complies with OSHA's Bloodborne Pathogen standard for disinfecting surfaces soiled with blood or other potentially infectious body fluids
- EPA-registered hospital germicide formula; must have an EPA Registration Number
- Safe for daily use
- Has one or more years of shelf life
- Non-phenol based, non-corrosive; therefore, will not damage surfaces
- Pleasant fragrance
- Reasonable cost
- Preferably, ready-to-use formula; otherwise just dilute with water, apply & wipe

When used as directed, the approved products are highly effective against pathogenic organisms including bacteria, antibiotic resistant bacteria, viruses, fungi, and so on. The approved products meet CDC and OSHA guidelines. For details, refer to the manufacturer's specifications/datasheets and MSDS.

The easy-to-use, fast-acting germicidal cleaners can clean and disinfect common nonporous surfaces and equipment, thereby providing a quick turnaround for scheduling of equipment usage.

Personal protection devices must be worn by the person performing the infection control. This includes disposable protective gloves, protective gowns, face masks, or eye coverings as appropriate when handling infected blood, body fluids, or other infectious materials. The use of puncture resistant nitrile gloves is highly recommended.

Any non-essential items can be removed from the pharmacy equipment to be cleaned or disinfected to prevent chemicals from splashing on these items. The AC power cord of the Omnicell equipment must not be connected to an AC outlet. All blood and other body fluids must be thoroughly cleaned from surfaces and objects before disinfection by the germicidal cleaners. As a precaution, do not use or store cleaners near heat or open flame.

# Product Specific Cleaning Recommendations

Specific components of the Omnicell product line need special care when being cleaned due to the materials used, or the type of construction.

Specific cleaning recommendations:

- Do not use a spray bottle to apply cleaning solution directly to the touchscreen, LCD, fingerprint reader or keyboard surfaces where spray would run down the surface. Spray bottles can be used to apply cleaner to a cloth prior to wiping the surface. Additionally, do not use a cloth that is dripping with a cleaning solution. Excess cleaning solution can enter the product along seams and openings or pool on the surfaces.
- It is preferred that surfaces are cleaned with a damp lint-free cotton cloth or equivalent. Note that some pre-moistened wipes or towlettes may leave lint on the surface after the solution dries. Lint on the surface does not affect the equipment operation. Use a lint-free cloth on the fingerprint reader.
- Ensure Biometric fingerprint readers are wiped clean, and remove any lint or cleaning residue.
- To prevent surface finish damage, do not use abrasive or harsh scrub pads to clean any surfaces.
- Avoid harsh chemicals such as acetone or toluene, which dissolve most plastics.
- Scanners should not be cleaned with window cleaner or equivalent products.
- Wireless scanners should be cleaned with the battery installed. To prevent cleaning solution from entering the scanner, do not clean the scanner with the battery removed.

# Product Matrix

Product specific cleaning steps.

## XT PRODUCT

Omicell XT cabinets, consoles and accessories have been tested successfully by Omnicell using five cleaning solutions: bleach, hydrogen peroxide, 50/50 isopropyl alcohol and water mix, 70% isopropyl alcohol, Virex TB and bleach. There were no observable functional issues or defects.

Product	Sub System	General Cleaning	Disinfecting
XT Tall Cabinets, Half Height, Shelves, FlexLock, External Return Bin	Exterior Painted Metal Surfaces	50/50 solution of isopropyl alcohol and water, mild detergent and water	Virex, ZEP, Tough Guy, Ramsey
	Keyboard/Mouse	50/50 solution of isopropyl alcohol and water, mild detergent and water	Sani-Cloth Plus, Super Sani- Cloth, Oxivir Tb Wipes
	Touchscreen	50/50 solution of isopropyl alcohol and water, mild detergent and water	70% solution solution of isopropyl alcohol and water
	Fingerprint Reader	Less than 50/50 solution of isopropyl alcohol and water, mild detergent and water	70% solution solution of isopropyl alcohol and water
	Pharmacy drawers, Flex Lock, ERB	50/50 solution of isopropyl alcohol and water, mild detergent and water	Virex, ZEP, Tough Guy, Ramsey
	Scanner	50/50 solution of isopropyl alcohol and water	70% solution solution of isopropyl alcohol and water

Product	Sub System	General Cleaning	Disinfecting
	Acrylic doors	50/50 solution of isopropyl alcohol and water, mild detergent and water	Virex, ZEP, Tough Guy, Ramsey
	Glass shelves	50/50 solution of isopropyl alcohol and water, mild detergent and water	

#### G4 PRODUCT

Product	Sub System	General Cleaning	Disinfecting
G4 Tall Cabinets, OmniRx, Table Top, Half Cell, FlexLock, External Return Bin	Exterior Painted Metal Surfaces	50/50 solution of isopropyl alcohol and water, mild detergent and water	Virex, ZEP, Tough Guy, Ramsey
	Keyboard/Mouse	50/50 solution of isopropyl alcohol and water, mild detergent and water	Sani-Cloth Plus, Super Sani- Cloth, Oxivir Tb Wipes
	Touchscreen	50/50 solution of isopropyl alcohol and water, mild detergent and water	70% solution solution of isopropyl alcohol and water
	Fingerprint Reader	Less than 50% solution of isopropyl alcohol and water, mild detergent and water	70% solution solution of isopropyl alcohol and water
	Pharmacy drawers, Flex Lock, ERB	50/50 solution of isopropyl alcohol and water, mild detergent and water	Virex, ZEP, Tough Guy, Ramsey

Product	Sub System	General Cleaning	Disinfecting
	Scanner (Symbol)	50/50 solution of isopropyl alcohol and water	70% solution solution of isopropyl alcohol and water
	Acrylic doors	50/50 solution of isopropyl alcohol and water, mild detergent and water	Virex, ZEP, Tough Guy, Ramsey

### ANESTHESIA WORKSTATION

Product	Sub System	General Cleaning	Disinfecting
Anesthesia Workstation	Exterior Painted Surfaces	50/50 solution of isopropyl alcohol and water, mild detergent and water	Virex, ZEP, Tough Guy, Ramsey
	Keyboard/Mouse	50/50 solution of isopropyl alcohol and water, mild detergent and water	Sani-Cloth Plus, Super Sani-Cloth, Oxivir Tb Wipes
	Touchscreen	50/50 solution of isopropyl alcohol and water, mild detergent and water	70% solution solution of isopropyl alcohol and water
	Fingerprint Reader	Less than 50% solution of isopropyl alcohol and water, mild detergent and water	70% solution solution of isopropyl alcohol and water
	Work Surface	50/50 solution of isopropyl alcohol and water, mild detergent and water	Virex, ZEP, Tough Guy, Ramsey

Product	Sub System	General Cleaning	Disinfecting
	Scanner (Symbol)	50/50 solution of isopropyl alcohol and water	70% solution solution of isopropyl alcohol and water

## SAVVY

Savvy keyboards come with a protective overlay membrane. Replace the membrane on an annual, or more frequent, basis depending in usage and wear. Contact Omnicell if a replacement overlay membrane cover is needed.

Savvy Mobile Cart, Rio Mobile Cart	Exterior painted Surfaces, Exterior plastic surfaces	50/50 solution of isopropyl alcohol and water, mild detergent and water	Virex, ZEP, Tough Guy, Ramsey
	Scanner (Code)	50/50 solution of isopropyl alcohol and water	Sani-Cloth HB, Sani-Cloth Plus, Super Sani-Cloth, Virex
	Scanner (Symbol)	50/50 solution of isopropyl alcohol and water	70% solution solution of isopropyl alcohol and water
	Touchscreen	50/50 solution of isopropyl alcohol and water, mild detergent and water	70% solution solution of isopropyl alcohol and water
	Keyboard/Mouse	50/50 solution of isopropyl alcohol and water, mild detergent and water	Replace keyboard overlay membrane, Virex, ZEP, Tough Guy, Ramsey, Sani-Cloth Plus, Super Sani-Cloth,
	Exterior Painted Surfaces	50/50 solution of isopropyl alcohol and water, mild detergent and water	Virex, ZEP, Tough Guy, Ramsey



**CONTROLLED SUBSTANCE MANAGER**

Product	Sub System	General Cleaning	Disinfecting
CSM	Exterior plastic surfaces	70% Isopropyl Alcohol and Water, Cloro-Wipe Towlette, Sani-Cloth HB, Sani-Cloth Plus, Super Sani-Cloth, Viraguard, Virex	Oxivir Tb Wipes
	Scanner	50/50 solution of isopropyl alcohol and water	Oxivir Tb Wipes
	Touchscreen	70% Isopropyl Alcohol and Water, Alcohol Prep Pads, Tuffie wipes	Oxivir Tb
	Keyboard/Mouse	70% Isopropyl Alcohol and Water, Cloro-Wipe Towlette, Sani-Cloth HB, Sani-Cloth Plus, Super Sani-Cloth, Viraguard, Virex	Oxivir Tb Wipes

## Summary

Frequent cleaning and disinfection of pharmacy products using readily available cleaners and disinfectants with EPA and OSHA approvals is essential for daily infection control in order to help reduce the transmission of pathogens while ensuring cost-effective personal and environmental safety, and product performance.

## References

For additional information on cleaners and cleaning practices, refer to the list of references.



The following references are provided for convenience and are available as of the publication of this document. Links may change over time. Check with the organization for any questions.

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Ramutkowski, Barrie, Keller, & Abel (1999). Clinical Procedures. McGraw-Hill. pp. 25. ISBN 0-02-802443-5

EPA Registered Hard Surface Disinfectants Comparison Chart  
[https://www.education.nh.gov/instruction/school\\_health/documents/disinfectants.pdf](https://www.education.nh.gov/instruction/school_health/documents/disinfectants.pdf)

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CDC Guidelines on Cleaning, Disinfections, and Sterilization of Medical Equipment,  
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<https://www.osha.gov/html/faq-bbp.html>

Selected EPA-Registered Disinfectants,  
<http://www.epa.gov/oppad001/chemregindex.htm>

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