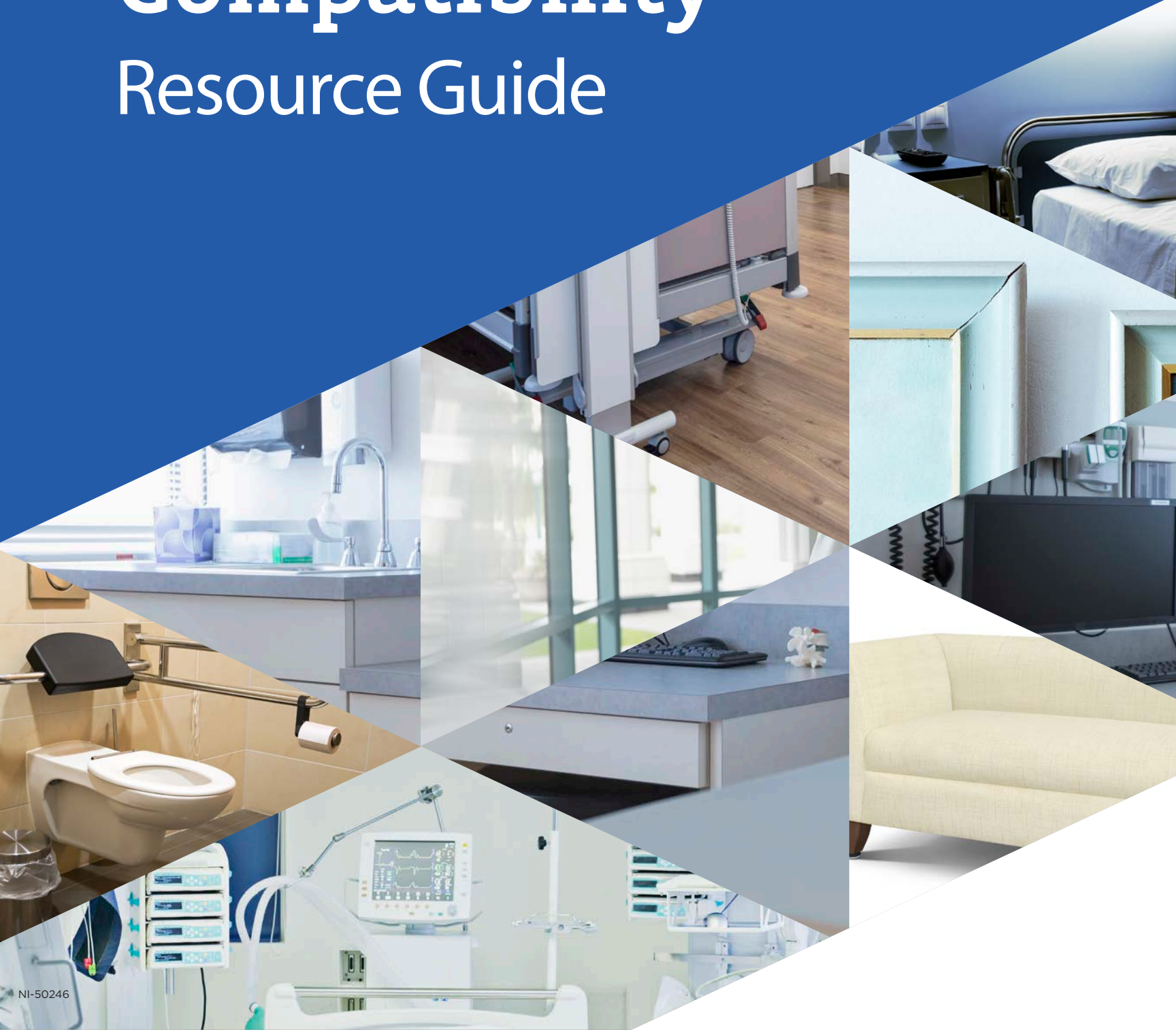




HEALTHCARE™

# Surface Compatibility Resource Guide



# 16 months

is how long some of the most dangerous pathogens can survive on a medical device.\*



\* Magill, SS. et al N. Engl. J. Med. 2014, 370 (13), 1198-1208.

THE CHALLENGE:

# FDA and CDC guidance highlight the importance of medical device disinfection

*“FDA recommends that you validate your disinfection processes and instruction. FDA also recommends that you follow the recommendations in device-specific FDA guidance documents or any relevant FDA-recognized standards.”\**

— FDA from  
“Reprocessing Medical Devices in Health Care Settings: Validation Methods and Labeling. IX. Validation of the Final Microbicidal Process to Prepare the Device for the Next Patient”

*“Medical equipment surfaces (e.g., blood pressure cuffs, stethoscopes, hemodialysis machines, and X-ray machines) can become contaminated with infectious agents and contribute to the spread of healthcare-associated infections. For this reason, noncritical medical equipment surfaces should be disinfected with an EPA-registered low- or intermediate-level disinfectant.”†*

— CDC from  
“Disinfection of Healthcare Equipment: Surface Disinfection”

\* Reprocessing Medical Devices in Health Care Settings: Validation Methods and Labeling: Guidance for Industry and Food and Drug Administration Staff  
† <https://www.cdc.gov/infectioncontrol/guidelines/disinfection/healthcare-equipment.html>



## THE CHALLENGE:

# Damage to dollars

*Cleaning practices and products that are incompatible with medical materials can result in enormous hidden costs*

*“Use of cleaning agents or cleaning practices that are incompatible with the materials used in a medical device’s construction, or that are otherwise inappropriate for the device’s design, can cause the device to malfunction or to fail prematurely, possibly affecting patient care.”*

— ECRI Institute

- ▶ Medical device manufacturers create numerous generations of the same device with varying material blends every year. These components/blends are never shared with the customer.
- ▶ Historically, disinfectant manufacturers prioritize efficacy and safety to patients.

## Types of Surface Damage Seen in Healthcare

*Multiple types of surface damage can result from the use of cleaners and disinfectants on healthcare surfaces*



### **Plastic fatigue**

cracks, crazing, often caused by plasticizing ingredients in formula (usually solvents)



### **Discoloration**

can occur when the protective coating is removed and then exposed to sunlight or heat




### **Metal corrosion**

occurs when acidic and alkaline disinfectants damage metal surfaces, even those covered with protective paints and coatings



### **Residue**

streaky residues caused by surfactants and solvents, or salty residues caused by dissolved solids are unsightly but usually removable by wiping with clean damp cloths

A photograph of a hospital room. On the left is a hospital bed with white linens and a pillow. Above the bed is a long, horizontal light fixture. To the right is a bedside table with a telephone, a remote control, and three light switches. The room is lit with a cool, blueish-white light.

**33**  
billion

in annual healthcare cost is in preventable HAIs, of which 20% are associated with contamination related to medical devices.\*

- *Office of Disease Prevention and Health Promotion*

\*Office of Disease Prevention and Health Promotion. National Action Plan to Prevent Health Care-Associated Infections: Road Map to Elimination. Available at: [www.health.gov/hcq/prevent-hai-action-plan](http://www.health.gov/hcq/prevent-hai-action-plan). asp?ga=1.149183862.151257667.1479836176. Accessed Dec. 1, 2016.



THE CHALLENGE:

# Complexity stems from numerous factors

*Why is it so difficult to create a disinfectant that doesn't damage surfaces?*

**What factors can affect compatibility on devices?**

- ▶ Disinfectant active ingredient
- ▶ Types and varieties of surfaces
- ▶ How device is being used
- ▶ Frequency of cleaning and the protocols
- ▶ Poor design for cleanability
- ▶ Other components of disinfectant (solvents, surfactants, additives)

A medical device can consist of up to **40** different materials and blends



# 25 different

surfaces can be found  
within a healthcare facility.



acrylic



stainless steel



laminate



glass



paint



chrome



polypropylene



ABS



polyurethane/vinyl



linoleum/vinyl



PVC



HEALTHCARE™

COMPATIBLE™

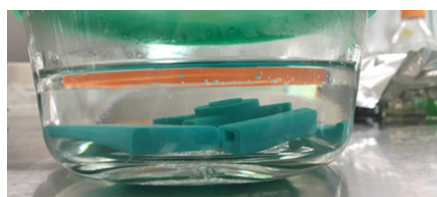
OUR PROGRAM:

# Clorox's approach to compatibility testing

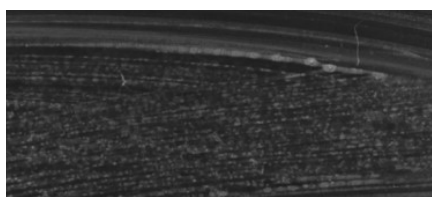
## The Clorox Healthcare Compatible™ Program

In 2015, Clorox launched the Clorox Healthcare Compatible™ program to rigorously evaluate the compatibility of materials and equipment commonly used in healthcare with our range of disinfectants.

Our scientists continue to develop industry best practices to help our customers feel confident about the performance of our products.



**Soak test.** Material submerged in disinfectant chemistry for 4 days with a wet/dry cycle each day. Provides data on durability of material after intense exposure to chemical.



**Wipe test.** Surface wiped and allowed to dry 180 times. Simulates real-world exposure to wipes and residue build-up. Provides data on durability of material after intense exposure to chemical.



**Stress test.** Hole drilled near material edge, and vertical cut made to create high-stress area. Material immersed in disinfectant for up to 72 hours. Provides data on durability of material after intense exposure to chemical.

*Our three-prong approach to compatibility testing determines how we rate the compatibility of disinfectants with commonly found materials in the healthcare setting.*

Learn more at:  
[www.cloroxhealthcare.com/compatible](http://www.cloroxhealthcare.com/compatible)

## The Clorox Healthcare Compatible™ Star Rating System

### 3-Star System



No visible surface damage or effect on the material is likely to occur when used according to label directions. No change to the integrity of the material is expected.



Some visible surface damage such as tarnishing or clouding may be seen with long-term exposure. Little to no effect on material integrity is expected. Periodic wiping of surfaces with a clean damp cloth to remove residue can help to minimize damage.



Visible damage to the surface is likely to occur with long-term exposure and some effect on material integrity is possible. Surfaces should be wiped with a clean damp cloth immediately after the contact time has been reached to reduce the risk of damage. Users should evaluate the risk of surface damage vs. benefits of disinfectant efficacy against pathogens to determine whether the product is appropriate for use.



# CLOROX HEALTHCARE: DISINFECTANT COMPATIBILITY CHART



	Surface	Potentially found in...	Clorox Healthcare® Bleach Germicidal Wipes	Clorox Healthcare® Fuzion® Cleaner Disinfectant	Dispatch® Hospital Cleaner Disinfectant Towels with Bleach	Clorox Healthcare® Hydrogen Peroxide Cleaner Disinfectant Wipes	Clorox Healthcare® VersaSure™ Cleaner Disinfectant Wipes
POLYMERS	<b>Acrylics (PMMA)</b>	Phone displays, incubators, X-ray protective shields, isolettes	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★
	<b>ABS</b>	Keyboards, pumps, medical devices for blood access, enclosures for electrical and electronic assemblies	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★
	<b>High-Density Polyethylene (HDPE)</b>	Packaging, trays, bottles, and other industrial plastic products	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★
	<b>Marlite®</b>	Wall panels	★ ★ ★	★ ★	★ ★	★	★ ★ ★
	<b>Polypropylene (PP)</b>	Hard molded plastic used for bottles, trays, device exteriors	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★
	<b>Polyvinylchloride (PVC)</b>	Furniture, mattress covers, tubing, floors	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★
POLYMERS	<b>Tritan™ Copolyester</b>	Clear polymer device components	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★
	<b>Healthcare-grade vinyl fabric</b>	Furniture, exam tables, curtains	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★
	<b>Polycarbonate</b>	Lenses, housings, IV connectors	★ ★ ★	N/A	N/A	★ ★ ★	★ ★
GLASS	<b>Etched Glass</b>	Wall panels, bathroom/shower enclosures	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★
	<b>Glass</b>	X-ray shields, glass partitions	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★
	<b>Sapphire Glass</b>	Device screens, protective covers	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★
METALS	<b>Aluminum (Multipurpose 6061)</b>	Walkers, isolation carts, seating	★	★	★	★	★ ★ ★
	<b>Chrome Plated Metal</b>	Bathroom fixtures, IV poles, gurneys, equipment racks, stools, chairs, grab bars	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★
	<b>Stainless Steel 316</b>	Sinks, wheelchairs, bed frames, cabinets, carts, trolleys, furniture, fixtures, equipment, counters	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★
HARD, POROUS SURFACES	<b>Corian®</b>	Countertops	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★
	<b>Glazed Ceramic</b>	Tiles	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★
	<b>Glazed Porcelain</b>	Bathroom tiles, toilets, sinks	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★
	<b>Natural Marble</b>	Decorative countertops	★ ★ ★	★ ★ ★	★ ★ ★	★	★ ★ ★
	<b>Porcelain Enamel</b>	Coatings on metal appliances, bathtubs	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★
	<b>Sealed Marble</b>	Decorative countertops	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★
	<b>Sealed Granite</b>	Decorative countertops	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★	★ ★ ★

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 Tritan™ is a trademark of Eastman Chemical Company  
 Corian® is a registered trademark of DuPont Building Innovations  
 \*Testing completed by manufacturer.