

All CR, DR, and Dryview Products

Disinfecting Agents on Carestream Equipment and Media

When doing the procedures in this document, you must use safe work practices and wear the correct personal protective equipment (for example, safety eyewear) according to your company's standard operating procedures.

Instructional

This Service Bulletin is to instruct the disinfecting and cleaning protocols for Carestream CR, DryView and DR equipment and media. This bulletin provided does not supersede the information in the existing user documentation, but is used as a supplement.



IMPORTANT

- This bulletin will cover the use of disinfecting agents used on the various products used by the customer.
- It is important to note that not all agents are approved for all products.
- Read the entirety of the bulletin to know what agents are approved for a certain product.
- Always review ingredients of commercial products before use, as formulations can change without notice.

General Disinfecting Guidelines



IMPORTANT

Clean the exterior of the equipment by removing visible organic matter prior to disinfecting.



CAUTION

Always power down the equipment before cleaning.

- Never use abrasive cleaning products such as abrasive sponges, steel wool pads, abrasive powdered cleaners, or harsh detergents. Plastic surfaces are easily scratched. This can ruin the finish.
- Aggressive cleaning agents can have an adverse reaction with the equipment’s surface, possibly causing damage.
- Do not use glass cleaner on plastic.
- Only use a cloth moistened with the cleaner, or a pre-moistened wipe. Do not spray cleaning solutions directly onto the equipment. If spray cleaner is used, spray the cleaning material on a cleaning cloth, and then use the cloth to clean the machine.
- The easiest touchscreen cleaning method is to use a screen cleaner kit that includes anti-static wipes. Spray a little of the cleaning solution on a wipe, and then rub it gently across the screen. If necessary, finish cleaning the touchscreen with a dry, lint-free cloth to wipe off any moisture.
- Do not use volatile agents like ammonia. These may degrade or discolor the unit.
- Do not use isopropyl alcohol or any alcohol product when the machine is running, as they are flammable liquids. If this is a concern, keep in mind that batteries always retain a charge. If gas from the spray comes in contact with hot electrical components, fire or electrical shock may result.
- Do not immerse the equipment in liquid.
- Do not let any liquid drip into the components.
- Do not use ultraviolet disinfecting. Indeterminate amounts may degrade the finish and integrity of plastic covers.

DR and DRX Equipment, and DryView Exterior

Below are cleaning agents that have been tested and approved by Carestream, to be used on covers and exterior components. Internal surfaces and lubricated components that do not come into contact with the user or patient are not to be disinfected by the customer. This includes all DryView, DR and DRX Systems, DRX-1 and DRX-Plus Detectors, and the Onsite 3D Extremity Systems.

Always review ingredients of products before use, as formulations can change.

Disinfectant Class Type	Example of single brand tested
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Sodium Hypochlorite (Bleach)	PDI Sani-Cloth Bleach Germicidal Disposable Wipes
Quaternary/Alcohol	Metrex CaviWipe1
Quaternary (Alcohol Free)	PDI Sani-Cloth AF3 Wipe*
Hydrogen Peroxide	Diversey Oxivir Tb

In addition to these cleaning agents, the use of the following have not shown any adverse reactions.

70% Isopropyl Alcohol
1:10 Bleach Solution (one part 5.25% Sodium Hypochlorite and nine parts water)**

*PDI Sani-Cloth AF3 Wipes have been shown to adverse effects on DRX-1 and OEM Flat Panel Detectors, manufactured before June 2017.

**1:10 Bleach and water solutions when applied repeatedly to the exterior plastic panels may lead to eventual yellowing of the surface. This is a cosmetic impact and should not impact the function of the unit.

Cleaning Touch Screens and Monitors

Always follow manufacturer’s guidelines for a list of approved products to clean a touch screen or monitor. Instructions can be found on their website.

Company	Product	website
HP	Monitors, keyboard, computers	http://h10032.www1.hp.com/ctg/Manual/c06593291
Tangent	DRX-Mobile Retrofit	https://www.tangent.com/
Arbor	DRX-Mobile Retrofit Motion Mobile DR Retrofit	https://www.arbor-technology.com/gl/Form/ContactUs/Index/Technical%20Support
Tablet Kiosk	DRX-Transportable/Lite	https://www.tabletkiosk.com/support/files/Sahara_i500/TK_i500_Users_Guide_English.pdf
Motion Computing	DRX-Transportable	https://www.zebra.com/content/dam/zebra_new_ia/en-us/manuals/tablets/i-series/i3500-rg-mul.pdf

Basic Cleaning Steps

- Dampen a soft lint free microfiber cloth with warm soapy water and wring out excessive liquid.
- Wipe screen gently in long sweeping motions in one direction.
- Thoroughly dry screen.

Avoid using circular motion as it may cause solution to trickle down toward the edges of the screen. If this happens it could seep into the monitor and damage the electronic components.

Never spray solutions directly on the screen, cloths should only be dampened, not be dripping wet.

Avoid using tissue paper. The fibers can be lodged between the screen and the bezel.

Use of alternative cleaners, or those not approved by the manufacturer, could lead to yellowing, streaking in addition to electrical damage.

DryView Media - Film Cartridges

Only the exterior of all DryView products and film cartridges can be cleaned with dampened cloths using 75% Ethanol (alcohol) or 70% Isopropyl alcohol solutions.

DryView rollers can only be cleaned with a soft cloth dampened with cleaner TLUN8454977 or water. Rollers must be thoroughly dried before installing in system. The use of any other cleaning agent will degrade the rollers.

The internal components of the DryView products and film cartridges are not accessible to the customer, so disinfecting the components inside are not recommended.

CR Media and Equipment

CR equipment comprises of both the CR Scanner Exterior and the CR Cassette or Phosphor screen. Unlike DR equipment, each aspect of the CR product family has its own requirements.

CR Media - Cassette and Phosphor Screen



IMPORTANT

The following materials should be avoided. Any contact with them or their fumes may cause visible, or hidden damage to the screen and synthetic rollers, resulting in immediate or future image artifacts:

- hydrogen peroxide and other peroxides,
- isopropyl alcohol,
- citrus-based cleaners,
- hand lotions,
- waterless hand sanitizers

Frequent disinfecting of screens could lead to cracking of the overcoat and yellowing of the phosphor which will shorten the life of the screen.

- Do not leave the screen to air-dry.
- Do not insert a damp storage phosphor screen into a cassette. The screen and cassette must be thoroughly dry before reinserting phosphor screen into cassette shell.
- Phosphor screens are extremely sensitive to moisture. Exposure to moisture can cause damage to the phosphor screens, which results in image-quality problems. The phosphor screen is coated with a moisture-resistant polymer blend. It is possible to damage this protective coating during cleaning and permanently damage the screen.
- If possible, remove the screen when disinfecting the cassette shell. Ensure that the screen is dry and entirely devoid of the solution. Any solution applied to a flexible screen may transfer to the rollers and damage them.

- CR rollers can only be cleaned with a soft cloth dampened with cleaner TLUN8454977 or water. Rollers must be thoroughly dried before installing in system. The use of any other cleaning agent will degrade the rollers.

The following disinfecting agent has been approved to be used on CR cassettes and Phosphor screens.

1:10 Bleach Solution (one part 5.25% Sodium Hypochlorite and nine parts water)**

These steps can be followed to disinfect the CR media:

1. Apply solution with moistened lint free cloth.
2. Carefully wipe the soiled area with the damp cloth.
3. Rinse with a soft cloth moistened with Carestream Screen Cleaner.
4. Wipe the area dry with a soft, dry, lint-free cloth.



IMPORTANT

Never pour/spray dilute bleach or Carestream screen cleaning solution directly onto the CR scanner, cassette or screen. Follow the steps outlined in User and Service documents.

**1:10 Bleach and water solutions when applied repeatedly to the exterior plastic panels may lead to eventual yellowing of the surface. This is a cosmetic impact and should not impact the function of the unit.

CR Scanner Exterior

In addition to dilute bleach solution, the following commercially available disinfecting agents are also suitable for CR scanners. These are not approved to be used on the cassettes or phosphor screens.

Always review ingredients of products before use, as formulations can change.

Disinfectant Class Type	Example of brand
Sodium Hypochlorite (Bleach)	PDI Sani-Cloth Bleach Germicidal Disposable Wipes
Quaternary (Alcohol Free)	PDI Sani-Cloth AF3 Wipe



IMPORTANT

Do not clean with any commercial products containing chemicals or agents that can damage or harm the phosphor screen.