

Standard Operating Procedure

CR Cassette & Imaging Plate: Cleaning and Disinfecting

SITE APPLICABILITY:

All Lower Mainland Medical Imaging (LMMI) sites in Fraser Health (FH), Providence Healthcare (PHC), Provincial Health Services Authority (PHSA), and Vancouver Coastal Health (VCH)

PURPOSE:

To provide LMMI staff with a procedure for performing low level disinfection (LLD) on computed radiography (CR) cassettes and imaging plates (IPs) using vendor approved products

SCOPE:

Applicable to all Medical Imaging staff and departments that use CR cassettes and IPs

RESPONSIBILITIES:

CR cassette cleaning must be performed immediately after patient contact and blood and body fluid exposure.

CR cassettes and IP plates should be inspected and cleaned on a regular basis and the regular cleaning process should be documented.

PROCEDURE:

Incorrect LLD processes and/or product exposure may cause significant damage to the IPs and CR cassettes.

- a) LLD is performed on the cassette housing and the IP
- b) High level disinfection (HLD) is never performed on the CR cassette or the IP

1. Clean

Cleaning is performed to remove any foreign matter (dust, soil, food, feces, blood, etc) using friction and rub/scrub motion. Clean from the cleanest area to the dirtiest area. Use as many wipes as necessary to remove the foreign matter.

2. Disinfect

Disinfection is performed immediately following cleaning, using friction and rub/scrub motion followed by maintaining a "wet contact time" as per product instructions. The item is then air dried to complete the disinfection process.

The different levels of the disinfection process are described in the [Disinfection Procedure](#)

For wipes that contain a cleaner and a disinfectant:

- If the surface is soiled use two wipes.
- If the surface is not soiled only one wipe is necessary. Use one side of the wipe to clean and second side to disinfect.
- If there are any issues with residual product potentially damaging an item or causing hazing or opaqueness a final wiping can be done with a clean/new cloth and plain water (lightly dampened) followed by air drying.

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Disinfection Procedure

Infection Level	CR Cassettes and Imaging Plates LLD Procedure
A. When universal precautions are followed and no plastic envelope used OR B. When there is intact skin, no additional patient precautions and a plastic envelope is used and cassette is removed without any cross contamination	<ol style="list-style-type: none"> 1. Post imaging procedure, carefully slide cassette out of plastic envelope/cover (if used), onto designated clean area. 2. Dispose of the plastic envelope/cover if used. 3. If wearing gloves, doff the gloves. 4. Perform hand hygiene and don clean gloves. 5. Dampen clean cloth with approved LLD solution or use a pre-saturated wipe Table 1. 6. Perform LLD on cassette. 7. Process cassette. 8. Perform LLD on work area. 9. Remove gloves and perform hand hygiene.
C. Unexpected blood and bodily fluid (BBF) exposure or patient's additional precautions are discovered during procedure OR The plastic envelope integrity is compromised OR Seepage into cassette occurs.	<ol style="list-style-type: none"> 1. Post imaging procedure, carefully slide cassette out of plastic envelope/cover (if used), onto designated clean area. 2. Dispose of the plastic envelope/cover if used. 3. If wearing gloves, doff the gloves. 4. Perform hand hygiene and don clean gloves. 5. Dampen clean cloth with approved LLD solution or use a pre-saturated wipe Table 2 & Table 3. Perform LLD on cassette external housing. 6. For cassettes that cannot be opened, contact Biomed to inspect the inside 7. For cassettes that can be opened, open cassette to inspect the inside. 8. Doff gloves and perform hand hygiene. Don clean gloves (to prevent any contaminants from damaging the IP), remove IP & place it on a clean linen surface (i.e. a clean bed sheet). 9. If seepage has occurred, clean IP according to manufacturer guidelines using vendor approved product Table 4 and place on another clean linen surface <ul style="list-style-type: none"> ○ Kodak/Carestream IPs: do not air dry. After cleaning, wipe IP dry with a dry low-lint wipe. ○ Agfa and Fuji IPs: air drying is acceptable. 10. Don clean gloves, place the IP from the exam into an alternate clean cassette for processing. Process cassette 11. Proceed to examine the used/dirty cassette interior housing. Perform LLD with vendor approved product Table 2 & Table 3, if contaminated. After appropriate contact time, wash off with water dampened cloth. Dry cassette by leaving cassette open to air dry to let fumes dissipate (~5 min or longer). Do not put any IP back into the cassette housing if the interior is still damp. 12. Perform LLD on area the dirty cassette was placed on in Step 1, if required. 13. Doff gloves and perform hand hygiene.

**** See [Appendix A](#), [Appendix B](#) & [Appendix C](#) for more product information****

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Table 1: Infection Level A and B: Vendor Approved LLD Products for Cassette (CR) Housing

Product	Active Ingredient	Contact Time
ALL: Plastic cassette envelope	Barrier method decreases contamination and damage to cassette possibility	N/A
AGFA ONLY Damp cloth of mild soap and water Isopropyl Alcohol (≥70% and a clean lint-free cloth or disposable low lint wipe)	70% Isopropanol	1 minute
AGFA Kimtech Pure Wipes	70% Isopropyl, 30% deionized water	1 minute. Can air dry.
FUJI No specific vendor name brand product as per vendor.	Ethanol anhydride >99.5% (sparingly and only and can be available from the laboratory, <u>Isopropyl alcohol can only be used on IP's of ST-III generation or older).</u> Sites with ST-IV and newer may use, it is accepted practice to use Isopropyl Alcohol (≥70%) with a clean lint-free cloth or disposable low lint wipe.	Unavailable
CARESTREAM/KODAK Sani-Cloth Bleach CaviWipe Sani-Cloth Oxivir Tb	Sites may use Isopropyl Alcohol (≥70%) with a clean lint-free cloth or disposable low lint wipe.	30 seconds – 3 minutes Do not air dry. Instead, wipe dry immediately with a soft dry lint-free cloth

Table 2: Infection Level C: Vendor Approved LLD Products for Cassette (CR) Housing

Product	Active Ingredient	Contact Time
ALL: Plastic cassette envelope	Barrier method decreases contamination and damage to cassette possibility	N/A
AGFA Mikrozyd Sensitive Wipes Sani-cloth	Mikrozyd: Ethanol, Propan-1-ol Sani-Cloth: Isopropyl Alcohol, Dimethyl Benzyl Ammonium Chlorides	3 minutes
Multigreen Surface Disinfection.MED	multiGreen Surface disinfection Med-no information available	5 minutes
AGFA Mikrozyd AF Universal Wipes	94% (25g) Ethanol, 35g Propan-1-ol	3 minutes
AGFA Sani-Cloth Active	<0.5 N,N-didecyl-N-dimthylammonium chloride <0.6 2-Amino ethanol	5 minutes
AGFA Accel INTERvention wipes	0.5% accelerated hydrogen peroxide (AHP)	Bacteria, Tuberculosis & Viruses. 1-3

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	(AGFA states, only use if other products unavailable. Use cautiously and sparingly)	minutes, then wipe down with cloth and water
FUJI Accel INTERvention wipes	No vendor recommendations available It is accepted practice to use >70% Isopropanol Alcohol	Not available
CARESTREAM/KODAK Clorox Bleach wipes	0.55% Sodium Hypochlorite wiped down with Carestream Screen cleaner afterwards, do not air dry.	Do not air dry. Wipe dry immediately with a soft dry lint-free cloth

Table 3: Alternative (IPAC) Approved LLD Products for Cassette (CR) Housing

Product	Active Ingredient	Contact Time
Germiphene Ultra Swipes wipes	79% ethanol	Bacteria, Fungus, Mycobacteria, Viruses 1 minute
Accel INTERvention wipes	0.5% accelerated hydrogen peroxide (AHP)	Bacteria, Tuberculosis & Viruses. 1-3 minutes, then wipe down with cloth and water
Accel PREvention wipes	0.5% AHP	3 minutes, then wipe down with cloth and water
Clorox Healthcare Bleach Germicidal Disinfectant wipes (<u>only use for C. Difficile</u>)	0.55% sodium hypochlorite (bleach)	Spores – 3 minutes, then wipe down with cloth and water

Table 4: Vendor Approved Imaging Plate (IP) Cleaning Products

Product	Active Ingredient	Contact Time
AGFA CR Phosphor Plate Cleaner	80% Ethanol	Minimum 5 minutes
CARESTREAM/KODAK Min-R Screen Cleaner	1% Ethylene glycol-10% bleach solution (1 part 5.5% sodium hypochlorite with 9 parts water) wiped down with Carestream Screen cleaner afterwards, do not air dry	Do not air dry. Wipe dry immediately with a soft dry lint-free cloth
FUJI Anhydrous ethanol	Anhydrous ethanol	5 minutes

REFERENCES/ASSOCIATED DOCUMENTS:

Diagnostic Accreditation Program Standards <https://www.cpsbc.ca/accredited-facilities/dap/accreditation-standards-DI>

Provincial Health Services Authority- MSDS Safety Data Sheets.
https://sds.phsa.ca/msds_files/10283.pdf





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APPENDICES:

Appendix A: Alcohol Based Products

Product Name	70% Isopropyl Solution	KIMTECH PURE W4	Mikrozid Universal Wipes	>99.5% Ethanol Anhydrous
Image of Product				
Drug Identification Number (DIN)	00602698	Not Available	Not Available	Not Available
Active Ingredients	70% Isopropyl Alcohol 30% Deionized Water	70% Isopropyl Alcohol 30% Deionized Water	17.4 Propan-2-ol, 12.6 Ethanol	>99.5% Ethanol Anhydrous
Drying time	Viruses & microorganism kills on contact TB 5 minutes	Not Available	3 minutes	5 minutes
Precautions	Flammable Avoid contact with eyes	Flammable liquid and vapour. Can cause serious eye irritation.	None	Flammable Avoid contact with eyes
Effective against:	Bactericidal, tuberculocidal, fungicidal and virucidal	Bactericidal, tuberculocidal, fungicidal and virucidal	Bactericidal, tuberculocidal, fungicidal and virucidal	Bactericidal, tuberculocidal, fungicidal and virucidal
Product application	Dampen clean cloth and wipe	Wipe	Wipe	Dampen clean cloth and wipe





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Appendix B: AHP Based Products



Product and Product image	Accel INTERvention	Opt/M 33 TB	ProSurface+ Disinfection Wipes with Total Clean Technology	Oxivir TB
				
Drug Identification Number (DIN)	02448637	02285347	02490013 02489929	02283530
Active Ingredients	Benzyl Alcohol 1.5% Hydrogen Peroxide 0.1 - 1.5% (MSDS states 0.5%)	Hydrogen Peroxide 0.5%	Ethyl Alcohol 72.5% Didecyl Dimethyl Ammonium Chloride 0.33% Other Ingredients 27.17 % w/w	Benzyl alcohol 1-5% Hydrogen peroxide > 0.1 - < 1%. Dodecylbenzene sulfonic acid > 0.1 - < 1%
Drying time	1 minute	1 minute 3 minutes for fungi	1 minute	1 minute 3 minutes for fungi
Precautions	Handle using gloves	Handle using gloves	Handle using gloves	No personal protective equipment required under normal use conditions. Avoid contact with skin and eyes.
Effective against:	Virucide, bactericide, tuberculocide, fungicide and non-food contact sanitizer. Kills MRSA and Norovirus	1 minute tuberculocidal, bacterial, virucidal contact time 3 minute fungicidal contact time	Virucidal, bactericidal, fungicidal, tuberculocidal	Virucidal, bactericidal, fungicidal, tuberculocidal
Product Application	Wipe	Wipe	Wipe	Wipe

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Appendix C: Chloride Based Products (Quats)

Product and Product image	3M surface disinfectant cleaner wipes	Sani-Cloth HB Germicidal
		
Drug Identification Number (DIN)	Not available	Not available
Active Ingredients	2-Butoxyethanol 1-5% Quaternary ammonium 0.1-1% Water 45-80% Isopropyl alcohol 10-30%	Alcohol free quaternary ammonium (N,N-didecyl-N-dimethylammonium chloride 2-Amino ethanol)
Drying time	3 minutes	10 minutes
Precautions	Not classified as hazard	Not classified as hazard Handle in accordance with good industrial hygiene and safety practice
Effective against:	Virucidal, bactericidal, tuberculocidal and fungicidal	Bactericidal, Fungicidal and Virucidal
Product Application	Wipe	Wipe

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Revision History:	Version	Date	Description/ Key Changes	Revised By (Name and Position)
	1.0	24-AUG-2020	Initial release	Regional Quality Coordinators, LMMI
	2.0	15-APR-2021	Update cleaning products from vendors and table edits	Regional Quality Coordinators, LMMI
	3.0	03-OCT-2023	Format into SHOP SOP Remove outdated links, rearrange procedure steps for clarity	Regional Quality Coordinators, LMMI

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