



KONICA MINOLTA

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Healthcare Business Headquarters
KONICA MINOLTA, INC.

COVID-19 Support from KONICA MINOLTA INC.

Cleaning and Disinfecting Methods for Diagnostic Ultrasound Systems and Transducers

■ **Scope**

- ✓ SONIMAGE HS2 : SONIMAGE HS2, SONIMAGE HS2 Lite
- ✓ SONIMAGE HS1 : SONIMAGE HS1, SONIMAGE HS1 Lite
- ✓ SONIMAGE MX1 : SONIMAGE MX1
- ✓ Transducers : C5-2, L18-4, L11-3, L14-4, WL13-3, S4-2, S4-2A, MC10-3, HL18-4, EC9-3

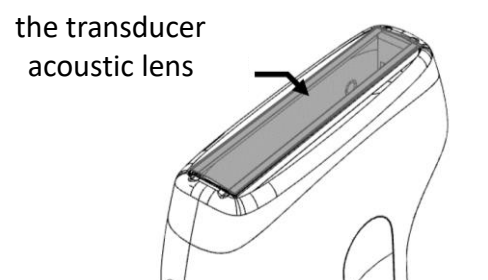
■ **Available Disinfectants and Procedures**

If the chemical (disinfectant) lists are available in the operation manual, please disinfect according to the manual.

<Ethanol for Disinfection>

1. Spray on soft cloth or kitchen paper thoroughly with ethanol for disinfection (approx. 80vol%) (like wet tissue moistness). Wipe off the main body and the transducer. * please avoid rubbing strongly the transducer acoustic lens.
2. Wipe off monitor surface, gaps of monitor edges and console, transducer surface etc. with a soft, clean cloth and make sure to prevent ethanol getting inside.

*Disinfecting MX1 handle with ethanol may cause resin peeling, and disinfecting the transducer acoustic lens with ethanol may cause lens detachment, so do not rub it strongly.





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<Sodium Hypochlorite Solution>

1. Spray on soft cloth or kitchen paper thoroughly with sodium hypochlorite solution diluted by approximately 0.05% to 0.1% (like wet tissue moistness). Wipe off the main body and transducer.
Make sure to prevent the solution from entering the gaps or metal parts.
2. Wipe off the entire surface carefully with water within 5 minutes.

■ Precautions Concerning Cleaning and Disinfecting

- Use the appropriate amount of chemical solutions. Do not immerse the main body and transducer or leave them wet. Please make sure to prevent the chemical solution from entering inside through the gap. It may cause rust, cracks, or paint peeling.
- Do not rub strongly with cloth soaked by the chemical solution to remove dirt. If it is dirty, wash off all residues with the chemical solution listed in the operation manual or diluted neutral detergent.
- Turn off the power of the system and work in a well-ventilated place in cleaning and disinfecting.
- Make sure to use an eye protection and surgical gloves to secure safety.
- Make sure to refer to the instruction manual provide by the manufacturer when using the chemical solution listed in the operation manual.
- Using those disinfectants does not guarantee cleaning or disinfection efficacy and have not been tested by KONICA MINOLTA, Inc. for use with the COVID-19 virus. Please follow the policies and procedures of your institution for the cleaning and disinfection of equipment.



■ **Reference**

Refer to the operation manual or “Handling of Transducer” regarding cleaning and disinfecting and immersion range for transducers. (Below is the excerpt from HS1 operation manual)

● **Cleaning**

- 1 Wash off all residues on the transducer with purified water.
- 2 Clean the transducer using one of the solutions listed in the table below.
 - For the immersion, refer to the waterproof range in "8.1.3 Transducer Part Names".
- 3 Rinse off the transducer with sterile water after taking it out from a chemical solution.
- 4 Wipe off the surface of the transducer using a sterile soft cloth. Then, let the transducer air-dry.
 - When drying the transducer, do not heat or blow a hot wind over it. Doing so may cause damage.

Chemical type	Trade name	Method and time
Enzyme	CIDEZYME® (0.8 %)	Immersion: 1 min. Temperature: Room temperature
Isopropyl Alcohol	Isopropyl Alcohol 70 %	Wiping with a sterile gauze Temperature: Room temperature
Benzalkonium chloride	Protex™ Disinfectant Wipes	Wiping with a sterile soft cloth Temperature: Room temperature
Benzalkonium chloride	Protex™ Disinfectant Spray	Wiping with a sterile gauze Temperature: Room temperature
Benzalkonium chloride	Super Sani-Cloth®	Wiping with a sterile soft cloth Temperature: Room temperature
Benzalkonium chloride	Sani-Cloth® HB	Wiping with a sterile soft cloth Temperature: Room temperature
Benzalkonium chloride	Sani-Cloth® Plus	Wiping with a sterile soft cloth Temperature: Room temperature
Benzalkonium chloride	PI Spray	Wiping with a sterile gauze Temperature: Room temperature

● **Disinfection (immersion)**

- 1 Clean the transducer before disinfecting it.
- 2 Immerse the transducer in chemical solutions shown in the table below.
 - For the immersion, refer to the waterproof range in "8.1.3 Transducer Part Names".
- 3 Rinse off the transducer with sterile water after taking it out from a chemical solution.
- 4 Wipe off the surface of the transducer using a sterile soft cloth. Then, let the transducer air-dry.
 - When drying the transducer, do not heat or blow a hot wind over it. Doing so may cause damage.

Chemical type	Trade name	Method and time
Glutaraldehyde	CIDEXPLUS® 28 day solution (3.4 %)	Follow the manufacturer's instructions. Immersion: 20 min. Temperature: Room temperature
Ortho-phthalaldehyde	CIDEX® OPA (0.55 %)	Follow the manufacturer's instructions. Immersion: 12 min. Temperature: Room temperature

IMPORTANT

- Repeated disinfection of the transducer may cause discoloration, but it won't affect the performance of the transducer.
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● **Disinfection (trophon® EPR)**

- 1 Clean and dry the transducer before disinfecting.
- 2 Disinfect the transducer with trophon® EPR
 - Use a cartridge for high level disinfectants.
 - Be sure to refer to the instruction manual provided from the manufacturer Nanosonics.

Chemical type	Trade name	Method and time
Hydrogen Peroxide	trophon® NanoNebulant®	Follow the manufacturer's instructions.
Hydrogen Peroxide	trophon® Sonex-HL®	Follow the manufacturer's instructions.