

APPENDIX B

DECONTAMINATION OF SPECIFIC ITEMS

RETAIN FOR FUTURE USE

APPENDIX B

DECONTAMINATION OF SPECIFIC ITEMS

Surface or Material

Asphalt Roads (applicable to small vital areas only)

Type of Contamination

Chemical

- Flush with water
- Spray with slurry from PDDE
- Cover with STB. When liquid contamination is visible and personnel are nearby, use dry mix.
- Weather
- Cover small areas or paths across roads with 10 cm (4 in.) of earth.

Biological

- Weather. Remain masked.
- Wet with water. This will prevent secondary aerosols, but does not decon.
- Apply 2% household bleach solution.
- Spray with slurry from PDDE.
- Pour, spray, or spread oil on surface. This will help prevent secondary aerosol, but does not decon.

Nuclear

- Brush or sweep.
- Flush with water. This may drive some of the contamination into the surface, Waste must be controlled.
- Vacuum cleaning.

Surface or Material

Roofs

Type of Contamination

Chemical

- Same as for asphalt roads.

Biological

- Same as for asphalt roads.
- Apply detrochlorite. Leave on at least 30 minutes, then flush with water.

Nuclear

- Same as for asphalt roads.
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Surface or Material

Brick and Stone Roads (applicable to small vital areas only)

Type of Contamination

Chemical

- Weather
- Spray with slurry from PDDE or apply with brushes and brooms. Let remain 24 hours, then flush with water.
- Wash with soapy water, preferably hot.
- Cover small areas or paths across roads with 10 cm (4 in.) of earth.

Biological

- Same as for asphalt roads.

Nuclear

- Same as for asphalt roads.
- Abrasion or sandblasting. This provides direct and complete removal of contaminated dust. Sand and equipment being used becomes contaminated.

Surface or Material

Buildings

Type of Contamination

Chemical

- Spray with slurry from PDDE or apply with brushes and brooms. Let remain 24 hours, then flush with water.
- Use STB or dry mix around buildings where waste water runs.
- Wash with soapy water, preferably hot.
- Weather.

Biological

- Same as for asphalt roads.
- Apply STB slurry to vertical surfaces by manual means or PDDE. Slurry may be left on exteriors.

Nuclear

- Same as for brick and stone roads.
-

Surface or Material

Concrete Roads (applicable to small vital areas only)

Type of Contamination

Chemical

- Spray with slurry from PDDE.
- Cover with STB or dry mix.
- Cover small areas or paths across roads with 10 cm (4 in.) of earth.
- Weather.

Biological

- Same as for asphalt roads.

Nuclear

- Same as for brick and stone roads.

Surface or Material

Buildings, Bunkers, Gun Emplacements, Tank Obstacles

Type of Contamination

Chemical

- Same as for brick and stone buildings.

Biological

- Same as for brick and stone buildings.

Nuclear

- Same as for brick and stone buildings.
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Surface or Material

Earth Road, Gun Emplacement, Bivouac Area, Pathways, Bomb Craters
(Applicable to small vital areas only)

Type of Contamination

Chemical

- Spray with slurry from PDDE.
- Cover with STB. When liquid contamination is visible and personnel are nearby, use dry mix.
- Weather.
- Burn. It may present downwind vapor hazard.
- Cover small areas or paths across roads with 10 cm (4 in.) of earth.
- Scrape layer of contaminated earth to side of road.

Biological

- Same as for asphalt roads.
- Burn.

Nuclear

- Earthmoving (removal). Contaminated dust should be controlled. Equipment may become contaminated. Waste disposal must be considered.
- Sealing with earth. No waste disposal problem. Equipment may become contaminated.

Surface or Material

Fabrics: Canvas, Covers, Tarpaulins, Tentage,
Mask Carriers, Web Gear, and Clothing.

Type of Contamination

Chemical

Cotton

- Immerse in boiling soapy water for 1 hour. Use 1 lb. soap to 10 gallons of water and stir.
- Use 5% Sodium Carbonate solution for G Agents.
- Immerse in boiling water for 1 hr.
- Launder by standard methods.
- Use slurry.
- Weather except for V Agents.

Woolen

DS2 is not recommended

- Immerse in warm (100° F) soapy water for 1 hr. or longer with light agitation. Dry items slowly. Fabric may shrink.

Biological

Cotton

- Boil in water for 15 minutes.
- Autoclave for 45 minutes at 123° C (253° F).
- Immerse in 2% household bleach solution for 30 minutes, rinse immediately.
- Launder. This destroys or inactivates all but highly resistant spores.

Woolen

DS2 is not recommended.

- Launder. Fabric may shrink.

Nuclear

Cotton and Woolen

- Brushing removes contaminated dust, but presents dust hazard to personnel.
- Laundering is the most practical procedure. Waste must be controlled. Fabric may shrink.

Surface or Material

Leather: Boots, Gloves and other items

Type of Contamination

Chemical

- Scrub with hot, soapy water and rinse.
- Immerse in soapy water at 120° F for 4 hours and rinse.
- Use 5% Sodium Carbonate solution for G Agents.
- Air.

Biological

- Immerse in 2% household bleach solution. Rinse.
- Immerse in 2% Peracetic Acid for 10 minutes, rinse, and air for 10 to 50 minutes.
- Wipe with 2% Peracetic Acid, remove excess, and air for 10 to 15 minutes.

Nuclear

- Brushing.
 - Flushing with water or soapy water.
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Surface or Material

Glass: Windows

Type of Contamination

Chemical

- Individual Equipment Decon Kit (DKIE)
- M258A1 or M280 Kit
- DS2
- Wash with hot, soapy water.
- Wash with clear water or organic solvent.
- Blot off surface.
- Air.
- Weather

Biological

- M258A1 or M280 Kit
- Wash with soap and water.
- Wipe with disinfectant solution or 2% Peracetic Acid. (See similar procedures for mess gear.)

Nuclear

- M258A1 or M280 Kit
 - Wash with detergent.
 - Flush with water.
 - Wipe with solvents.
-

Surface or Material

Lenses

Type of Contamination

Chemical

- M258A1 or M280 Kit
- Same as for windows. DS2 may damage lens coatings.
- Individual Equipment Decon Kit (DKIE)

Biological

- M258A1 or M280 Kit
- Wipe with soap and water.
- Wipe with alcohol or household bleach.

Nuclear

- M258A1 or M280 Kit
 - Brush or wipe. Care must be exercised to prevent scratching the lenses.
 - Use compressed air to blow contamination from surface.
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Surface or Material

Grass or Low Vegetation, Fields or Open Terrain

Type of Contamination

Chemical

- Burn.
- Spray with slurry from PDDE.
- Cover with STB or dry mix.
- Explode drums of STB.
- Clear paths through area by use of detonating cord or other detonating devices.

Biological

- Burn.
- Same as for asphalt roads.

Nuclear

- Same as for earth.
-

Surface or Material

Unpainted Metals and Ammunition

Type of Contamination

Chemical

- Wipe with soapy water.
- Wipe with organic solvent and dry.
- Air.

Biological

- Wipe with soapy water.
- Wipe with 2% household bleach solution.
- Air.

Nuclear

- Brush or wipe.
-

Surface or Material

Machinery

Type of Contamination

Chemical

- Use DS2.
- Same as for ammunition.

Biological

- Use DS2.
- Wipe with 2% Peracetic Acid, rinse, and air for 10 to 15 minutes.

Nuclear

- Brush or wipe.
 - Wash with detergent.
 - Flush with water.
-

Surface or Material

Mess Gear and Canned Rations

Type of Contamination

Chemical

- Immerse in boiling ,soapy water for 30 minutes and rinse.
- Immerse in boiling water for 30 minutes.
- Spray with DS2.
- Wash in hot, soapy water, rinse, and air.

Biological

- Wash with soap and water, then immerse in disinfectant solution, such as food service disinfectant solution, or 1/3 canteen cup of household bleach per 10 gallons of water.
- Boil in water 15 minutes. Not effective on toxins and bacterial spores. Immerse in 5% Sodium Carbonate or 4 lb. Washing Soda to 10 gallons of water and rinse with potable water.
- Immerse in household bleach solution, made with 1/2 gal. bleach to 25 gallons of water, for 30 minutes, then rinse and air for 10 to 15 min.
- Immerse in HTH Solution made with 1/2 lb. to 25 gallons of water, for 30 minutes, then rinse.
- Immerse in STB Solution made with 1 lb. to 25 gallons of water for 30 minutes, then rinse.
- Immerse in 2% Peracetic Acid for 10 minutes, rinse, and air for 10 to 15 minutes.

Nuclear

- Wash with soap and water, rinse.
- Brush, wipe contamination from surfaces and containers.

Surface or Material

Painted Metals: Vehicles, Weapons, and Equipment

Type of Contamination

Chemical

- DS2 may soften paint.
- Wash with hot, soapy water and rinse.
- Spray with slurry from PDDE, remove from surface in 1 hour and oil surface.
- Weather.
- Air.
- M291 Kit may be used to decon individual weapon.
- M280 Decon Kit, Individual Equipment (DKIE)

Biological

- Wash with detergent and spray with water at high-pressure.
- Apply Detrochlorite. Leave on 30 minutes, then remove by washing with water spray.
- Steam clean, using detergent.
- Use household bleach solution.
- Use 2% Peracetic Acid.

Nuclear

- Brush or wipe.
 - Wash.
 - Use organic solvents and caustics. Do not use on aluminum or magnesium surfaces.
Abrasives.
Complexing agents are of little value on weathered surfaces.
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Surface or Material

Opaque Plastics, Insulation, Telephones, Panel Boards

Type of Contamination

Chemical

- DS2 may soften or damage some plastics.
- Wash with hot, soapy water and rinse.
- Weather.
- Air.
- Blot off surface.

Biological

- Same as for lenses.

Nuclear

- Same as for opaque plastics.
-

Surface or Material

Rubber Aprons (Impermeable), Suits, and other items

Type of Contamination

Chemical

- Spray with DS2 and rinse after 30 minutes.
- Immerse in hot, soapy water (just below boiling point) for 1 hour. Do not agitate. Rinse with clear water and hang up to dry.
- For G Agents, use 10% Sodium Carbonate solution, rinse, and air.
- Apply hot, soapy water with brushes and rinse.
- Spray with slurry from PDDE. Wash off with clear water after a few minutes.

Biological

- Same as for leather.

Nuclear

- Brushing.
 - Scrubbing or flushing with water or soapy water.
-

Surface or Material

Rubber (Natural or Synthetic): Gloves and Boots

Type of Contamination

Chemical

- Spray with 10% mixture of HTH and rinse.
- Immerse in slurry solution for 4 hours, rinse, and air.
- Use the M291 Kit in emergencies.
- Air.

Biological

- Same as for leather.

Nuclear

- Same as for impermeable rubber.
-

Surface or Material

**Mask Facepieces and other rubber articles,
which come in contact with the skin.**

Type of Contamination

Chemical

- Use the M291 Kit in emergencies.
- Wash with warm, soapy water.
- Use M280 Decon Kit, Individual Equipment (DKIE).

Biological

- Wash in warm, soapy water; rinse in clear water, and dry at room temperature.
- Wipe with 2% Peracetic Acid; wipe off excess immediately, and air 10 to 15 minutes.

Nuclear

- Wipe or brush off.
 - Wipe off with water and detergent. Avoid wetting mask filters.
-

Surface or Material

Tires, Hoses, Mats, and Insulation

Type of Contamination

Chemical

- Spray with 10% mixture of HTH and rinse.
- Apply slurry paste. Allow slurry to remain at least 30 minutes, then flush with clear water. It may be left on tires.
- Apply hot, soapy water.
- Air.
- Weather.

Biological

- Use same methods used for chemical decon.

Nuclear

- Same as for impermeable rubber.
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Surface or Material

Sand, Beaches and Deserts
(Applicable to small vital areas only)

Type of Contamination

Chemical

- Flush with water.
- Spread STB or spray slurry over surface.
- Weather.
- Cover paths with roofing paper.
- Scrape off 5 to 10 cm (2 to 4 in.) of contaminated top layer.

Biological

- Burn.
- Wet with water. This will help prevent secondary aerosols, but does not decon.
- Apply 2% household bleach solution.
- Apply slurry of 7 parts STB and 93 parts water (by weight).
- Apply Sodium Hydroxide.

Nuclear

- Same as for earth.

Surface or Material

Undergrowth and Tall Grass, Meadows, Jungles and Forests
(Applicable to small vital areas only)

Type of Contamination

Chemical

- Burn. Avoid downwind vapor hazard.
- Spray slurry from PDDE.
- Weather.
- Explode drums of STB.
- Clear paths with detonating cord, bangalore torpedoes, or demolition snakes.

Biological

- Burn.
- Same as for sand.

Nuclear

- Use same procedures as for earth, to extent possible.
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Surface or Material

Wood Buildings (Unpainted), Vehicle Bodies,
Boxes, Crates, and Similar Items

Type of Contamination

Chemical

- Apply slurry with PDDE, brooms, or swabs. Let slurry remain 12 to 24 hours; flush and repeat application, then flush again.
- Scrub with hot, soapy water and rinse.
- Weather.

Biological

- Apply Detrochlorite. Leave on at least 30 minutes; flush with water.
- Apply STB slurry to vertical surfaces. Slurry may be left to interiors.
- Weather. Sun and rain eliminate most microorganisms within one day.
- Burn.

Nuclear

- Planing.
 - Wash exterior with large amounts of water. Some contamination may soak into surfaces.
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Surface or Material

Wood (Painted Surface), Buildings, and Boxes
DS2 may soften paint.

Type of Contamination

Chemical

- Apply slurry with PDDE, brooms, or swabs. Let slurry remain 12 to 24 hours, then rinse off with water.
- Scrub with hot water and rinse. Use DS2 and rinse.
- Weather.

Biological

- Same as for wood buildings and boxes as previously indicated.

Nuclear

- Wash exterior with large amounts of water.
 - Wipe contamination from surface.
-

Surface or Material

Water

Type of Contamination

Chemical

- Decontamination should only be undertaken by trained water purification personnel.

Biological

- Boil small amounts 15 minutes.
- Chlorinate using chlorination kit.
- Add Iodine Water Purification Tablets to small amounts of water.

Nuclear

- Flocculation requires special chemicals to remove suspended matter in water.
 - Ion exchange removes radio ions from solution.
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Surface or Material

Food (Not canned or protected by impermeable container)

Type of Contamination

Chemical

- Food known or suspected to be contaminated with chemical agents should not be consumed until approved by veterinary personnel.

Biological

- Boil in water 15 minutes. Cook thoroughly.
- Immerse in or spray with 2% household bleach solution. Packaged food or food which is peeled or pared may be immersed or sprayed.

Nuclear

- Wash or trim contamination from unpackaged food.
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Surface or Material

Food (Canned, bottled, or protected by impermeable container)

Type of Contamination

Chemical/Biological/Nuclear

- See mess gear and canned rations.

Surface or Material

Personnel

Type of Contamination

Chemical

- Use M291 Kit on exposed skin known or suspected to be contaminated.
- Use M280 Decon Kit, Individual Equipment (DKIE).
- Bathe with soap and water if readily available.

Biological

- Bathe with soap and hot water.
- Use M280 Decon Kit, Individual Equipment (DKIE).
- Use the M291 Kit.

Nuclear

- Brush or wipe from skin and hair.
- Bathe with soap and hot water.