

Decontamination Methods for Prions

The safest and most unambiguous method for ensuring that there is no risk of residual prion infectivity is to discard and destroy contaminated materials by incineration. Instruments that will be reused should be kept moist between the time of exposure to prions and subsequent decontamination and cleaning.

Current research indicates that inactivation of prions may be achieved by applying one of the following methods:

Liquid Wastes

- Mix with NaOH for a final concentration of 1.0 N NaOH and hold for 24 hours. Neutralize and dispose of down the drain or hold for chemical waste disposal.
- Autoclave at 132°C for 4½ hours and dispose of down the drain.

Heat Resistant Instruments

- Soak in 2.0 N NaOH for 1 hour (or 1.0 N NaOH for 2 hours). Rinse and autoclave autoclave at 134°C for 1 hour.
- Immerse in 1.0 N NaOH and autoclave at 121°C for 30 min. Clean and rinse.
- Soak in 1.0 N NaOH (or full-strength household bleach) for 1 hour. Rinse and place open pan, covering with water if desired. Autoclave at 121°C for 1 hour.
- Immerse in 1.0 N NaOH and boil for 10 min. Clean and rinse.
- Immerse in full-strength household bleach (or 1.0 N NaOH) for 1 hour. Clean and rinse.
- Autoclave at 132°C for 4½ hours.

Surfaces and Heat Sensitive Instruments

- Flood with 2.0 N NaOH or full-strength household bleach and let stand for 1 hour. Mop up and rinse with water.
- Clean with 1.0 N NaOH allowing a 5 minute contact time, followed by a wipedown with 1.0 N HCl. Rinse with water.
- Where surfaces cannot tolerate the proceeding methods, thorough cleaning will remove most infectivity by dilution and some additional benefit may be derived from the use of one or another of the partially effective methods listed in the table below.

Dry Materials, Dry Waste, Sharps

- Heat in porous load autoclave at 134°C for 1 hour.
- Autoclave at 132°C for 4½ hours.
- Identify container with label reading “Prion-Contaminated– For Incineration Only”. Arrange for pick-up and final destruction by incineration.

Contaminated Skin Surfaces and Splashes to the Eye

- Swab skin with 1.0 N NaOH for 5 minutes. Rinse with copious amounts of water.
- Eyes are rinsed with copious amounts of water or saline *only*.

Ineffective or Sub-Optimal Prion Disinfection Methods

Chemical Disinfectants	Gaseous Disinfectants	Physical Processes
<p><u>Ineffective</u> Alcohol Ammonia β-propiolactone Formalin Hydrochloric acid Peracetic acid Phenolics Sodium dodecyl sulfate (SDS) (5%)</p> <p><u>Variably or Partially Effective</u> Chlorine dioxide Glutaraldehyde Guanidinium thiocyanate (4 M) Iodophores Sodium dichloro-isocyanurate Sodium metaperiodate Urea (6 M)</p>	<p><u>Ineffective</u> Ethylene oxide Formaldehyde</p>	<p><u>Ineffective</u> Boiling Dry heat (<300°C)</p> <p><u>Variably or Partially Effective</u> Autoclaving at 121°C for 15 minutes Boiling in sodium dodecyl sulfate (SDS) (3%)</p>