Sec. 21a-235-18. Sterilization processes

"Sterilization," in reference to chapter 420a of the general statutes, means the destruction of all bacilli and spores of bacilli as well as insects and insect eggs (nits). Only those processes and agencies which destroy all disease germs, insects and insect eggs shall be accepted as effective sterilization processes or agencies under the law. There are five effective sterilization processes recognized: (1) Live steam under pressure; (2) live steam streaming from a boiler carrying not less than fifteen pounds pressure; (3) boiling water; (4) hot air, and (5) caustic solution of standard strength for sterilizing metal articles and parts. The types of apparatus and processes described below are accepted sterilizers and, when shown to be effective, shall be approved by the commissioner.

(a) **Steam pressure.** The most efficient process of sterilization is the steam pressure process when properly applied. Live steam, applied in a steam tight chamber from which the air has been expelled so as to penetrate to all parts of any article or material treated, and maintained at a pressure of at least fifteen pounds per square inch and a temperature of at least 250°F. at the point of lowest temperature for a period of not less than thirty minutes is an effective sterilizer. If the pressure is maintained at twenty pounds per square inch, the time of treatment may be reduced to twenty minutes. The articles or materials treated shall be placed on racks so as to allow free access of steam to all surfaces and parts. Materials treated shall not be compacted or compressed to a density greater than that of ordinary cotton felt used for filling material. The sterilizing chamber shall be strong enough to withstand the pressure indicated and shall be equipped with a standard steam gauge plainly visible at all times from the working floor. Temperature control shall be maintained by means of a recording temperature gauge. A Diac sterilizer control or equally effective control may be used until a recording temperature gauge can be installed.

(b) **Streaming steam.** A stream of live steam applied to articles or materials in the condition described above is acceptable as a sterilizing process, provided the steam shall have a temperature of at least 212°F. and shall be applied for a period of not less than three hours. Streaming steam may be used in two applications of one and one-half hours each with an interval of six hours but not more than twenty-four hours between each application. The steam chamber shall be steam tight with outlet valves at top and bottom which shall be kept open to prevent pressure in the chamber. Condensed steam shall be drawn off.

(c) **Boiling water.** Boiling water is acceptable as a sterilizing process if uncompacted materials are immersed in it for a period of not less than two hours.

(d) **Hot air.** Hot air may be accepted as a sterilizer under proper conditions although it is not as effective as steam or boiling water. A hot air sterilizing process to be approved by the commissioner shall safely produce a temperature of 250°F. at the point of lowest temperature in the chamber. Temperature shall be automatically controlled and shall be maintained for a period of at least two and one-half hours. Temperature shall be generated by means of properly guarded electric heating units or by steam pipes carrying live steam. An indirect gas heating system may be used if the material cannot be ignited by the gas flame. Hot air may be used for sterilizing material which is not compressed to a degree in excess of the customary compression of cotton felt. Articles shall be so spaced as to allow free circulation of hot air.

(e) **Caustic soda.** For sterilizing second-hand metal used in springs, cribs, cots, etc., the

commissioner will approve a caustic solution of one-half pound of caustic soda (76% sodium hydroxide) to each gallon of water. The solution shall be used in a tank impervious to the action of the solution and of sufficient size to permit the complete submersion of material. Metal shall remain in a cold solution for a period of at least twenty-four hours but, if the solution is kept at the boiling point, this period may be reduced to three hours. In using such caustic process, all plugs and obstructions shall be removed so as to permit free passage of the solution to the inside of all tubing and to all other parts. After sterilization all metal articles shall be thoroughly washed with clean water until all of the caustic solution is removed.

(f) **Chemical sterilization.** An approved chemical germicide may be used under proper conditions.

(Effective July 27, 1984)