

Note: This list should not be construed as a general endorsement by New York State of any of the technologies referenced.

**ALTERNATIVE TECHNOLOGIES TO TREAT REGULATED MEDICAL WASTE
JUNE 2005**

MICROWAVE

Manufacturer	Alt. Technology	System Description
<p>Sanitec Industries Corporate Headquarters 1250 24th St. NW Suite 350 Washington, DC 20007 Tel: (202) 263-3630 Fax: (202) 466-3079 E-mail: info@sanitecind.com</p> <p>CMB Maschinenbau GmbH Plabutscherstr. 115 8051 Graz, Austria Tel: 011-43-316-6855150 Fax: 011-43-316-685500-69 E-mail: cmb@christof-group.at Web site: www.christof-group.at/cmb And http://tinyurl.com/9ztzq</p>	<p>Sanitec Microwave Disinfection System Models HG-A-250S and HG-A-100S (Shredding/thermal inactivation by microwave)</p> <p>Sintion 1.1 (Microwave steam disinfection)</p>	<p>The Sanitec Microwave Disinfection System treats medical waste by grinding the waste within a closed container, then passing this waste through a series of microwaves, which in the presence of moisture from the addition of water to the waste, effectively heats to temperatures sufficient to provide an effective level of decontamination.</p> <p>The Sintion 1.1 converts regulated medical waste into treated, decontaminated solid waste by a combination of microwave and steam heat. Medical waste is collected in steam permeable plastic bags that are placed in a disinfection chamber. The waste is then heated by hot steam applied to the outside of the bags and microwaves applied to the middle, thereby reaching disinfection temperatures of 121°C.</p>

CHEMICAL INACTIVATION

<p>M.C.M. Environmental Technologies Inc. One Parker Plaza Fort Lee, NJ 07024 Tel: (201) 242-1222 E-mail: ekoppel@mcmtech.com Web site: http://www.mcmtech.com/</p>	<p>SteriMed/SteriMed-Junior (Shredding/Chemical inactivation)</p>	<p>This system shreds and disinfects with a chemical sterilant within a sealed container. After the addition of the chemical, a shredder crushes and shreds the contents of the waste container. Upon separation of the liquid effluent and solids, the liquids are discharged directly to a sewer system and the solid waste to a dumpster for final disposal.</p>
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<p>Sybron Dental Specialties, Inc. Metrex Research Corporation 1717 W. Collins Avenue Orange, CA 92867 Tel: (714) 516-7425 Fax: (714) 516-7488 Web site: http://www.metrex.com/</p> <p>Unitrade Ltd 300 East 56th Street New York, NY 10022 Tel: (212) 759-2771 Fax: (212) 751-3820</p>	<p>Premicide (Chemical disinfectant for suction canisters)</p> <p>UniMed Model No. 2518 (Shredding/Chemical inactivation by sodium hypochlorite)</p>	<p>Premicide is a dry powder cold sterilant that uses glutaraldehyde to solidify and treat blood and other body fluids contained in suction canisters. After a minimum exposure time of 24 hours, medical waste can then be stored, transported, and disposed of as non-infectious waste, thereby reducing potential for worker exposure to such fluids.</p> <p>The UniMed system consists of a hopper, shredding/grinding chamber, and a waste trap. Waste introduced into the hopper is first sprayed with a solution of sodium hypochlorite, followed by shredding and grinding of the waste, with final exit through a waste trap. Once the waste trap is filled with ground waste, additional sodium hypochlorite is added to achieve an acceptable working concentration of Free Available Chlorine. A pump attached to the waste trap recirculates the sodium hypochlorite for 30 minutes.</p>
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ELECTRO-THERMAL

<p>Thermal Waste Technologies (Acquired by Univec) Univec, Incorporated 10 East Baltimore Street Suite 1404, Baltimore, Maryland Tel: 410-347-9959 Fax: 410-347-1542 Email: univec@univec.com</p> <p>Stericycle, Inc. 28161 North Keith Drive Lake Forest, IL 60045 Tel: (847) 367-5910 Toll Free: (800) 643-0240 Fax: (847) 367-9462 Web site: http://www.stericycle.com/</p>	<p>Demolizer System (Electro-thermal inactivation)</p> <p>Stericycle Electro- Thermal Deactivation System (Shredding/Thermal inactivation by low frequency radio waves)</p>	<p>Medical waste is placed into a steel container within a heating cylinder where it is heated to 350°F for a period of 90 minutes, sealed and disposed. Emissions from the chamber are passed through a dual filtration system utilizing an activated carbon filter and a HEPA filter to remove odors and bacteria.</p> <p>Stericycle Electro-Thermal Deactivation System shreds medical waste into small fragments, moisturizes and compacts it, and then exposes the waste to a low frequency, oscillating electric field. The electrical energy is directly coupled to the waste fragments, which heats to temperatures between 90-100°C. The waste is held in insulated tubes for 2 hours at this temperature prior to disposal.</p>
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STEAM HEAT

<p>Sterile Technology Industries, Inc. (a WR² company) 2910-D Fortune Circle West Indianapolis, IN 46241 Phone: 317-484-4200 Fax: 317-484-4201 E-mail: sales@sti-wr2.com Website: http://www.sti-wr2.com/</p>	<p>STI Chem-Clav (Shredding/Chemical/Steam heat)</p>	<p>The STI Chem-Clav shreds and disinfects with sodium hypochlorite followed by a 30 minute 15 psi steam cycle. Medical waste is loaded onto a negative pressure steel conveyor containing a HEPA filter to eliminate the potential for aerosolization of infectious agents during the cycle. A spray mixture of NaOCL and water is applied to the waste containers prior to shredding. Upon shredding, the waste is introduced into a chute where it is mixed again with NaOCL before traveling through a particularizer for further reduction. The liquid is recycled for reuse in the system, while the solid waste is introduced into a steam container for steam sterilization.</p>
<p>WPS Company William D. Norton, President & CEO 3051 Washington Blvd., Suite B Baltimore, MD 21230 Tel: (443) 524-4245 Fax: (443) 524-4250 Web Site: www.redbag.com</p>	<p>SSM-150 (Maceration/steam heat)</p>	<p>Once medical waste is loaded into the processing chamber, steam is injected into the tank, followed by superheated water. After a 60-minute soak, the pump grinder is activated and the material is drawn through an external cutter. The waste is constantly cycled through the steam and hot waster bath and grinder for about 35 minutes. After drainage into a filter separator system, solids, now of confetti consistency, are separated from the liquids, which are drained into the local sewer tap.</p>
<p>Ecodas Jeff Squalli, President & CEO 28 Rue Sebastopol 59100 Roubaix, France Tel: 011 33 3 20 70 98 65 (France) 917) 855 6621 (U.S.) Fax: 011 33 3 20 36 28 05 Web site: http://tinyurl.com/b7mq2</p>	<p>Ecodas Process Models T300, T1000, T2000 (Pressurized heated steam)</p>	<p>Ecodas systems use moist heat, in the form of heated pressurized steam under high pressure in the treatment of regulated medical waste. Before the sterilization phase begins, medical waste is shredded allowing for exposure of its inner contents to the direct steam. The system operates at 280.4°F, 55 psig, and a residence time of 10 minutes.</p>

ALKALINE HYDROLYSIS

<p>Waste Reduction By Waste Reduction, Inc. 2910-D Fortune Circle West Indianapolis, Indiana 46241 Tel: (317) 484-4200 Toll Free: 877-749-2783 Fax: (317) 484-4201 Website: www.wr2.net</p>	<p>WR² Animal Tissue Digester (Alkaline Hydrolysis)</p>	<p>The WR² Animal Tissue Digester uses an alkaline hydrolysis process to solubilize animal carcasses and tissues. The waste is heated in a stainless steel, sealed digester vessel. Standard digestion cycle time is determined by temperature (approximately 3 hours at 150° C) in the presence of a circulating solution of 1N aqueous sodium hydroxide. The alkaline process liberates the 70-80% water content of the animal producing a sterile liquid waste, which may be disposed to a closed sewer system. Insoluble remains are disposed as sterile waste.</p>
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THERMAL – DEPOLYMERIZATION

<p>Changing World Technologies, Inc. 460 Hempstead Ave. W. Hempstead, NY 11552 Tel: (516) 486-0100 Fax: (516) 486-0460 Web site: www.changingworldtech.com/</p>	<p>Thermal Conversion Process (TCP)</p>	<p>The TCP process combines water, temperature, and pressure in a contained environment to convert organic waste into end products for industrial and commercial use. Water and organic material are heated under pressure and separated into liquid, solid, and gas streams. Materials that are fed into the machine are converted into high quality oils, gases, carbon, and specialty chemicals.</p>
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PLASMA ARC

<p>Startech Environmental Corp. 15 Old Danbury Road, Wilton, Connecticut 06897-2525 Te: (203) 762-2499 Toll Free: (888) 807-9443 Fax: (203) 761-0839 E-mail: starmail@startech.net Web site: http://www.startech.net/</p> <p>Integrated Environmental Technologies, LLC 1935 Butler Loop Richland, Washington 99352 Idaho Office: 208-535-9001</p>	<p>Startech Plasma Converter System (PCS)</p> <p>Plasma Enhanced Melter (PEM) Models G100,G200, G300, G500</p>	<p>The Startech Plasma Converter System ionizes plasma so it becomes an effective electrical conductor and produces a lightning-like arc of electricity that is the source of the intense energy transferred to the medical waste as radiant energy. The arc in the plasma plume within the vessel can be as high as 30,000°F. When waste materials are subjected to the intensity of the energy transfer, the excitation of the wastes' molecular bonds is so great that the wastes' molecular bonds break into their elemental components. It is the absorption of energy that forces the waste destruction.</p> <p>Plasma Enhanced Melter (PEM) uses an electrically conducting gas or plasma to dissociate organic molecules into elemental materials in an endothermic process. The average temperature in the chamber is in excess of 1100°C. The residues produced in</p>
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<p>Main Office: 509-946-5700 Fax: (509) 946-1819 E-mail: wjquapp@inentec.com Web site: http://www.inentec.com/</p>	<p>(Plasma Arc)</p>	<p>the process are the gasses CO and H₂ and a glass that results from a vitrification process.</p>
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