9432.1987(11)

RCRA/SUPERFUND HOTLINE MONTHLY SUMMARY

SEPTEMBER 87

4. Treatment of Infectious Waste

There is growing national concern over proper infectious waste management. What are some of the treatment methods currently used for infectious wastes?

Although RCRA section 1004 includes waste with infectious characteristics in the definition of hazardous waste, there are presently no Federal regulations for management of infectious waste under RCRA Subtitle C. Instead, regulation of infectious waste has been left up to the States' discretion. EPA has, however, issued a guidance manual entitled EPA Guidance for Infectious Waste Management May 1986, available through NTIS (publication number PB-86-199130) which describes numerous methods for effective treatment of infectious waste. Many treatment methods employ some form of heat or chemical sterilization.

Steam sterilization uses steam at a temperature high enough to kill infectious agents in combination with pressurization in a vessel such as a steam sterilizer, autoclave, or retort. Steam sterilization is an effective treatment method for low-density wastes such as plastics. A method that can be used for most types of infectious waste is incineration. Incineration converts combustible wastes into a noncombustible ash while combustion gases are vented to the atmosphere. A third type of heat-related treatment is thermal inactivation. For liquid wastes, thermal inactivation heats the waste at a set temperature for a designated period of time. Solids may be chemically inactivated by heating them in an oven, typically at 320 degrees to 380 degrees Fahrenheit for two to four hours.

Chemical treatment methods include gas vapor sterilization and chemical disinfection. In gas/vapor sterilization, the infectious waste is fumigated with a gaseous or vaporized chemical such as ethylene oxide or formaldehyde. Chemical disinfection (the name is self-explanatory) is effective for liquid wastes but may also be used for solid wastes.

A technology that may be used in the future is sterilization by irradiation. Ionizing radiation has already been used to sterilize other materials such as food and medical supplies.

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