FS No. 033-0324

Characterization of Used and Unused Formalin

BACKGROUND. Formalin is a mixture of 37–40% formaldehyde, water, and usually 10% methanol. Ten percent formalin (i.e., a 4% formaldehyde solution) is often used as a working solution for tissue fixation and as a preservative-holding solution for fixed specimens in pathological laboratories.

A distinction must be made between used and unused formalin to be discarded as they are regulated differently under the Resource Conservation and Recovery Act (RCRA).

UNUSED FORMALIN DISPOSAL. Unused formalin and **unused** 10% formalin solutions are both considered commercial products under the RCRA. Both contain formaldehyde as the sole active ingredient, which is listed as a hazardous waste with the Environmental Protection Agency hazardous waste number U122. This classification applies only to unused commercial products, off-specification commercial products, and spill residues from unused commercial products (40 Code of Federal Regulations (CFR) 261.33 (f)).

USED FORMALIN DISPOSAL. Used 10% formalin (i.e., the working solution) may be discharged to the sanitary sewer and then flushed through the trap with copious amounts of water. Disposal to the sanitary sewer is permissible from a RCRA perspective because the solution has been used for its intended purpose and is, therefore, no longer considered a commercial chemical product. It is classified as a non-hazardous spent material because it does not exhibit any of the RCRA characteristics of a hazardous waste (ignitability, corrosivity, reactivity, or toxicity), as described in Subpart C of 40 CFR 261.

Before the discharge of the used formalin, it is important to obtain approval from the installation environmental office or the officials at the receiving wastewater treatment plant (WWTP). Representatives from those locations can help evaluate any potential state discharge provisions, as well as any permit restrictions regarding the biochemical oxygen demand. If sewer disposal is agreed upon, the preferred method is to limit the discharge to approximately 1 quart per hour to minimize the impact on the biological treatment at the WWTP. Should sewer disposal not be available, contact the Defense Centers for Public Health–Aberdeen for further guidance.

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