



Used and Unused Formalin Management

FACT SHEET 37-067-0915

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

A distinction must be made between used and unused formalin when disposal action is planned. The distinction is defined in the Resource Conservation and Recovery Act (RCRA).

2. USED FORMALIN DISPOSAL. Used 10 percent formalin (i.e., the working solution) may be poured down the sink drain and then flushed through the trap with copious amounts of water. Disposal to the sanitary sewer is acceptable from a regulatory perspective because the solution has been used for its intended purpose and therefore is no longer considered a commercial chemical product. It is a spent solution which does not possess the same constituents as the original unused solution; it is changed in nature from having been used and therefore, does not meet the criteria stated in the RCRA regulations at 40 Code of Federal Regulations (CFR), Part 261, Section 261.33f, Protection of Environment, Identification and Listing of Hazardous Waste. This means that the used formalin working solution is not a hazardous waste because it is not listed and it is not a characteristic hazardous waste. It does not have the RCRA characteristic of ignitability, corrosivity, reactivity, or toxicity (40 CFR 261.21 - 261.24).

Sewer disposal is allowed provided that approval has been obtained from either the environmental authority at the installation or from officials at the receiving waste water treatment plant (WWTP). Ascertain that any State hazardous waste regulations are not violated and that the permit restrictions regarding the biochemical oxygen demand (BOD) has not or will not be exceeded. If sewer disposal is agreed to, the preferred method is to limit the disposal to about 1 quart per hour so as not to injure the biological treatment at the WWTP or to exceed the BOD limits. The operators of the WWTP may impose other limits.

3. UNUSED FORMALIN DISPOSAL. Unused formalin and unused ten percent formalin solutions are both considered commercial products. Both contain formaldehyde as the sole active ingredient. The regulations that implement RCRA identify formaldehyde as a toxic waste with the EPA hazardous waste number of U122. This classification applies only to unused commercial products, off-specification commercial products, and spill residues from unused commercial products (40 CFR 261.33f). Whether in an unopened container, a partially full container, or if it is otherwise off specification or determined not for use, this product must be managed as a hazardous waste when a disposal decision has been made.