

HW-2

2017

Management of Waste Photoprocessing Solutions

The New Hampshire Department of Environmental Services (NHDES) receives many inquiries concerning the regulatory status of waste photoprocessing solutions. This fact sheet clarifies NHDES' position by answering commonly asked questions regarding the management of photoprocessing solutions, as required under the New Hampshire Hazardous Waste Rules, Env-Hw 100-1200.

1. What is hazardous waste?

A hazardous waste is any waste that, because of its chemical or physical makeup or because of its potential for mismanagement, may pose a threat to human health or the environment. How do you know if your waste is hazardous or whether it can be managed simply as a solid waste? First, you determine whether the waste is exempt from the rules, which can be done by viewing the specific exemptions found at Env-Hw 401. Secondly, if the waste is not exempt, you should look at the lists of wastes found at Env-Hw 402.04 through 402.07. If you find your waste listed, it is automatically a hazardous waste. If not listed, then you have to determine whether the waste exhibits any of the hazardous waste characteristics described in Env-Hw 403.03 through Env-Hw 403.06 (ignitability, corrosivity, reactivity or toxicity). Finally, be aware that your waste may be a "hazardous waste mixture" per Env-Hw 404.01. This occurs when a waste or material is mixed with a hazardous waste. Additional information on hazardous waste mixtures or characteristics may be found on NHDES fact sheet WMD-HW-11, which will guide you through the hazardous waste determination process.

2. Are waste photoprocessing solutions considered hazardous wastes?

Some spent photoprocessing solutions are considered hazardous wastes and some are not. Persons generating such wastes should contact the supplier to obtain safety data sheets (SDS) pertaining to the products they use. The SDS should list any hazardous constituents and hazardous characteristics of the product and should also have a number to call to obtain more information. Although this information is very helpful, the spent solutions may be different from the unused product, therefore the wastes may require testing to determine if they are hazardous wastes. Analyses should be performed on the spent solution, i.e., the waste.

3. What laboratory analyses should be performed?

There are three major classes of photoprocessing wastes, each of which may require different analyses:

- a) **Spent developers.** Spent developers used in photoprocessing do not typically classify as hazardous waste. In the past some spent developers were hazardous because of their pH or the presence of regulated volatile organic compounds (VOCs). If you are unsure if your spent developer is a hazardous waste, you should determine if it has a pH greater than or equal to 12.5 or contains regulated VOCs. This determination can be made by reviewing the SDS and/or having a representative sample of the spent developer analyzed.
- b) **Spent fixers.** Spent photographic fixers, rinse waters and bleach baths following fixer baths should be analyzed for pH and silver content.
- c) **Spent cleaners.** Spent photoprocessing machine cleaners should be tested for pH. Many cleaners contain sodium dichromate. If this is not evident from the SDS, contact the manufacturer. Otherwise, testing for chromium content may be required. Solutions from cleaning developer tanks, which redissolves precipitated silver, should be tested for silver content.

Films, negatives and photographic paper may also be toxic for silver. Testing may be required to make this determination, unless the product supplier can provide information that can be used to determine if these materials are hazardous wastes or not when they are no longer useable. Testing should be repeated as often as necessary, or when the process changes, to ensure that you have made a correct hazardous waste determination.

Wastes are defined as hazardous due to corrosivity if the pH is less than or equal to 2.0 or greater than or equal to 12.5. Liquid wastes that contain greater than or equal to 5.0 ppm silver or 5.0 ppm chromium are classified as hazardous waste based on toxicity.

4. Are silver bearing fixer solutions regulated when they are shipped off-site for silver recovery?

Yes. The regulations in part Env-Hw 808 are applicable to recyclable materials that are reclaimed to recover economically significant amounts of silver, such as spent fixer solutions. Generators of recyclable materials would therefore not be subject to the full standards for generators under Chapter Env-Hw 500. The generator would, however, be required to notify NHDES of its activities and ship the wastes via a New Hampshire registered hazardous waste transporter, using a uniform hazardous waste manifest, to a facility authorized to accept such wastes. In addition, these wastes may not be accumulated speculatively as described in Part Env-Hw 811.

5. Are silver recovery units required to be permitted under the Hazardous Waste Rules?

Silver recovery units are commonly used to remove silver from photographic solutions. Under the state's Hazardous Waste Rules, the use of a silver recovery unit is considered a recycling process, and therefore does not require a permit per Env-Hw 802.02.

6. How must spent ion exchange columns from silver recovery units used to treat photoprocessing waste be managed?

Spent ion exchange columns are typically sent to a silver reclamation facility for removal of the captured silver. In most situations, these columns do not contain any listed hazardous wastes, but do exhibit the characteristic of toxicity for silver using the Toxicity Characteristic Leaching Procedure (TCLP). When this is the case, the columns are not regulated as a hazardous waste if recycled by being reclaimed for their silver content per Env-Hw 803.04(b)(1), because the spent columns would be considered “sludges.” It should be noted however, that if the columns contain listed hazardous waste constituents or are considered hazardous waste for any reason other than their silver content, they are regulated as hazardous waste when destined for silver reclamation.

7. Can photographic wastes be discharged to a town sewer system?

Industrial wastewater discharged to a municipal wastewater treatment plant is regulated by the city or town with concurrence of the NHDES Water Division, Wastewater Engineering Bureau, Permits and Compliance Section at (603) 271-2052. Persons desiring to discharge any wastes to the sewer system must contact the local treatment plant for approval prior to discharge. Photographic process wastes may be discharged provided that the discharger complies with the discharge permit and permit standards. Discharges that fail to meet the standards may be subject to regulation by NHDES as hazardous waste.

8. Can photographic wastes be discharged to a septic system?

Industrial wastewaters discharged to a septic system are regulated by NHDES' Water Division, Groundwater Discharge Program. However, industrial wastewaters, while being collected, stored or treated prior to discharge, and sludges generated by their treatment, are subject to the Hazardous Waste Rules. Groundwater discharges must not violate drinking water standards and are stringently regulated. Persons desiring to discharge industrial wastewaters to a septic system must contact NHDES' Water Division, Groundwater Discharge Program for a groundwater discharge permit prior to discharge at (603) 271-2858.

For more information

Questions regarding this fact sheet should be directed to the NHDES Waste Management Division at (603) 271-2942 or toll-free within New Hampshire at 866-HAZWAST. For a complete description of the requirements, refer to the New Hampshire Hazardous Waste Rules, Env-Hw 100-1200, available from NHDES' website at www.des.nh.gov.