



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

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OFFICE OF
SOLID WASTE AND
EMERGENCY RESPONSE

Mr. Gary Jones
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Printing Industries of America
200 Deer Run Road
Sewickley, PA 15143

Dear Mr. Jones:

This letter is in response to your email of May 3, 2011, and subsequent e-mails on May 5th and 12th, 2011 regarding the regulatory status of a water-solvent cleaning solution that becomes phase separated after use under the Resource Conservation and Recovery Act (RCRA) hazardous waste regulations.

As we understand, a common practice in printing operations with automatic blanket wash systems is to mix an organic solvent with water to make a cleaning solution that is applied to the blanket. The mix ratio is typically 40% water to 60% solvent. Once the solution has been used, it is collected in a container located at the side of the press, and once full, transferred to a larger container, such as a 55-gallon drum, for disposal. You explained that the solvent used is not one of the solvents that is a listed hazardous waste when spent or one that can cause a waste to exhibit the Toxicity Characteristic (see 40 CFR 261.24). You also explained that at the point the spent solvent is generated, the solvent and water are thoroughly mixed and the flash point of the mixture is over 140 °F. Thus, the solution does not exhibit the characteristic of ignitability (see 40 CFR 261.21). However, after some time, the spent solvent solution can phase separate into its two original components, leaving the organic solvent on the top and the water on the bottom, much like vinegar and oil. This is known as a biphasic solution.

In the particular situation you described, a printer shipped this waste as non-hazardous, not realizing that the solvent-water mixture had separated into two layers. When the container arrived at the disposal facility, it was opened and sampled from the top (the organic solvent layer) and rejected, as the flashpoint was below 140 °F, indicating that the solvent layer was a RCRA ignitable hazardous waste (waste code D001, see 40 CFR 261.21).

In reference to this situation, you seek answers to the following questions:

1. When determining the RCRA regulatory status of the waste (hazardous vs. non-hazardous), when is the determination made?
2. Is there any available guidance on sampling waste streams that are not homogenous?

3. If the waste phase-separates prior to shipment, may the generator remove the water phase and either use knowledge or testing to determine if it is non-hazardous? How would such separation be regulated?

Our responses are below:

- 1. When determining the RCRA regulatory status of the waste (hazardous vs. non-hazardous), when is the determination made?**

In this situation, the generator must make the hazardous waste determination not only at the point of generation, but also after the waste separates into phases. Generators of solid waste are required to make a hazardous waste determination at the initial point of generation following the procedure described in 40 CFR 262.11, which allows use of generator knowledge and/or testing, as appropriate. In this case, the initial point of generation would be when the spent water/solvent solution is removed from the blanket wash system and placed in the container located at the side of the press. A generator's hazardous waste determination at the initial point of generation is critical to ensure proper management of the waste not only by the generator, but also by transporters and treatment, storage and disposal facilities (TSDFs) who rely upon the generator's determination to allow them to safely manage the waste.

However, a generator's responsibility to make a hazardous waste determination may continue beyond the determination made at the initial point of generation. In the case of a non-hazardous waste that may, at some point in the future, exhibit a hazardous waste characteristic or meet a hazardous waste listing description, there is an ongoing responsibility to monitor and reassess if changes occur that may cause the waste to become hazardous. 40 CFR 261.3(b)(3) states that "a solid waste becomes a hazardous waste... when the waste exhibits any of the characteristics..." (Also see 45 FR 33095, May 19, 1980.) Thus, if there is reason to believe that the waste may physically or chemically change during management in a way that might cause the waste, or a portion of the waste, to become hazardous, the generator must monitor the waste for these changes. The generator should also notify any subsequent handlers of the waste so they are aware that they should also monitor the waste for changes.

With respect to the situation involving the printer's operation, the printer, like any person generating or managing waste, has a responsibility to understand the physical and chemical properties of the waste being managed that may affect whether the waste is hazardous. In this particular case, the printer should evaluate the solvent-water solution after it becomes biphasic, in addition to at the point of generation of the solvent-water solution. That is, the generator would be required under 40 CFR 262.11 to determine whether the various phases of the waste are hazardous. This is analogous to and consistent with situations we have discussed in the past such as when, over time, sludges that exhibit the characteristic of toxicity settle out of non-hazardous wastewaters managed in surface impoundments (55 FR 39410, September 27, 1990).

2. Is there any available guidance on sampling waste streams that are not homogenous?

A specific RCRA sampling protocol called the COLIWASA (Composite Liquid Waste Sampler, ASTM D-5495), found in Chapter Nine of EPA's waste testing guidance, "Test Methods for Evaluating Solid Waste (SW-846)," can be used to sample each phase in a multi-phasic solution. See also SW-846, Chapter Two, Sections 2.2.1, 2.2.4, and 2.3.1.5 for additional guidance. The COLIWASA test was developed to allow sampling of all phases throughout a container, including those that are not homogenous. The test involves placing a tube in the drum to capture a representative sample of each of the different layers from top to bottom.

3. If the waste phase-separates prior to shipment, may the generator remove the water phase and either use knowledge or testing to determine if it is non-hazardous? How would such separation be regulated?

Separating or physically removing the water phase from the ignitable solvent phase is considered treatment under the RCRA hazardous waste regulations. (See 40 CFR 260.10 for a definition of treatment.) However, under the federal hazardous waste regulations, generators may treat their hazardous waste without a permit or interim status in accumulation tanks and containers that are managed in compliance with the generator accumulation provisions of 40 CFR 262.34. (See 51 FR 10168, March 24, 1986.)

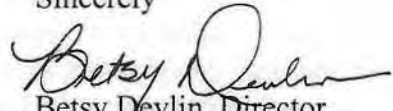
As specified in 40 CFR 262.11(c), for a waste that is not a listed hazardous waste, a generator may use either knowledge or testing to determine if the waste exhibits a characteristic. Thus, the printer may use either knowledge or testing to determine if the water phase after it separates from the solvent phase exhibits any of the characteristics of hazardous waste. In this case, the generator's knowledge that the cleaning solution can naturally separate into two layers, one of which is ignitable, is knowledge that is relevant to the hazardous waste determination. This knowledge must be considered in making the hazardous waste determination.

The COLIWASA protocol may be used to obtain a sample of the water layer if the generator would like to make this determination prior to removing the water phase from the biphasic solution. If the water that is removed proves to be non-hazardous, the generator may manage it in accordance with applicable requirements (e.g., place the water into another container for off-site disposal, or discharge it either directly or indirectly under the applicable Clean Water Act requirements, etc.). If any phase of the biphasic solution proves to be a hazardous waste, then the generator must manage such waste in compliance with the hazardous waste regulations at 40 CFR Parts 261-270.

Please note that most states are authorized to implement the RCRA hazardous waste program. State regulations, therefore, apply in authorized states in lieu of the federal regulations. Persons with questions about how the hazardous waste regulations apply to their operations should contact their implementing state agency or EPA regional office (in states not authorized for the RCRA program).

Thank you for your interest in the hazardous waste regulations. Should you have any questions regarding this response, please contact Greg Helms, at (703) 308- 8845 or helms.greg@epa.gov, or Jim O'Leary, at (703) 308-8827 or oleary.jim@epa.gov.

Sincerely



Betsy Devlin, Director
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