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Fact Sheet:

Properly Managing Parts Washer Waste

Background

Under the federal Resource Conservation and Recovery Act (RCRA), which Idaho has adopted by reference into state rules and regulations, businesses in Idaho are required to track the volume of wastes generated, determine whether or not each is hazardous, and **ensure that all wastes are properly disposed of according to federal, state and local** requirements.

Spent parts washer cleaning solutions are one type of waste covered by this requirement. Owners and/or operators of facilities where spent solvents are generated must be able to demonstrate they have adequately determined if the solvents are hazardous prior to shipping offsite for disposal.

In general, the regulations require generators to:

- Determine if their waste is a hazardous waste, and
- Ensure that their waste is managed properly in compliance with applicable requirements.

This fact sheet provides information and DEQ recommendations designed to assist you in understanding and satisfying the hazardous waste determination requirements that apply to spent cleaning solutions used in parts washers. Additional requirements may apply, including Land Disposal Restrictions and manifesting requirements. This document is not intended to replace, limit, or substitute for federal and state regulations. Generators and facilities that generate or manage spent parts washer cleaning solutions must ensure that they comply with all applicable regulatory requirements. For complete hazardous waste regulations, see the Code of Federal Regulations, Title 40 [40 CFR], Parts 124, 260 – 268, 270, 273, 278, and 279 which is incorporated by reference into Idaho's Rules and Standards for Hazardous Waste (IDAPA 58.01.05.000, *et seq.*).

Parts Washer Waste

Parts washers are commonly used in manufacturing or maintenance operations to clean parts or components. Parts washers use cleaning solutions that eventually become spent and must be disposed of or recycled. Spent parts washer cleaning solutions may be a hazardous waste.

Cleaning solutions used in parts washers include solvents and aqueous (water-based) cleaners. Solvents clean by dissolving away dirt. Solvents may be petroleum-based such as mineral spirits, Stoddard solvent, or petroleum naphtha; or they may be organic such as tetrachloroethylene, trichloroethane, trichloroethylene, benzene, and xylenes. Aqueous cleaners are pH-neutral or alkaline (high pH) water-based solutions that break down and remove dirt from part surfaces.

40 CFR § 262.40(c) requires generators of spent solvents to keep records of any test results, waste analyses, or other determinations made to satisfy the requirement found in 40 CFR § 262.11 to determine if the waste is a hazardous waste.

Spent parts washer cleaning solution is a hazardous waste if one or more of the following applies:

- It meets the definition of a listed waste. This means the spent solution contains, before use, 10% by volume of one or more of the constituents in the listing description for waste codes F001 – F005. These listings can be found in IDAPA 58.01.05.005 [40 CFR Part 261.31]. See Table 2 below.
- It is ignitable. This means the solution has a flashpoint of less than 140° F as specified in 40 CFR § 262.21. Solvents which exhibit this characteristic carry the D001 hazardous waste code.
- It is corrosive. This means the solution has a pH less than or equal to 2.0, or greater than or equal to 12.5 as specified in 40 CFR § 261.22. Solvents which exhibit this characteristic carry the D002 hazardous waste code.
- It is reactive. This means the solution is explosive, unstable, or reacts violently or generates toxic gases, vapors or fumes when mixed with water as specified in 40 CFR § 261.23. Solvents which exhibit this characteristic carry the D003 hazardous waste code.
- It contains toxic metals or organic chemicals above regulatory limits. The list of the toxicity characteristic chemicals and regulatory limits can be found in IDAPA 58.01.05.005 [40 CFR Part 261.24]. See Table 1 below.

Solvent-Based Parts Washers

Many commonly used **solvents** have flashpoints below 140° F, making them an ignitable hazardous waste (D001). Spent solvents are also often found to be hazardous waste because they contain toxic metals such as cadmium, chromium, and lead from parts and equipment cleaned in the parts washer. Spent solvents may also meet the definition of an F-listed waste. To manage spent solvents as non-hazardous waste, the generator must have sufficient process knowledge, or site-specific flashpoint, corrosivity, reactivity, and/or Toxicity Characteristic Leaching Procedure (TCLP) results, as applicable, to show they are non-hazardous. What constitutes sufficient process knowledge, in the context of spent parts-washer solutions, is addressed more fully below. To make a determination that your spent solvent is not a hazardous waste under 40 CFR 262.11, you will need to:

- Through testing or sufficient knowledge show that the flashpoint is 140° F or higher.
- Through testing or sufficient knowledge show that the pH of the spent solution is higher than 2.0 but lower than 12.5 as specified in 40 CFR § 261.22;
- Through testing or sufficient knowledge show that it is not reactive as specified in 40 CFR § 261.23;
- Through testing or sufficient process knowledge, show that the solution does not contain toxicity characteristic metals or organic chemicals above TCLP regulatory limits (see Table 1.); and
- Through testing or sufficient process knowledge show that the spent solvent is not F-listed, or contaminated with F-listed solvents (see Table 2 and 40 CFR § 261.31.)

Aqueous Parts Washers

Aqueous cleaners are often advertised as non-hazardous. Although most aqueous cleaners are not ignitable and are non-toxic when new, they can become a hazardous waste after use because they can contain toxic metals from the parts and equipment cleaned in the parts washer. Spent aqueous cleaners can also be hazardous for corrosivity if the pH is less than 2 or greater than 12.5. Both spent solvents and spent aqueous cleaning solutions may also be hazardous if they are contaminated with listed hazardous solvents or other toxic organic compounds applied to parts before washing, such as from aerosol sprays. To manage spent solvents as non-hazardous waste, the generator must have sufficient process knowledge (see below) or site-specific flashpoint, corrosivity, reactivity, and/or Toxicity Characteristic Leaching Procedure (TCLP) results, as applicable, to show they are non-hazardous. If no solvent-based cleaners, such as brake

or carburetor cleaners, have been used on parts or near the aqueous parts washer, TCLP analysis for the eight RCRA metals should suffice. To show that your spent aqueous cleaning solution is not a hazardous waste, you will need to:

- Through testing or sufficient process knowledge show that the flashpoint is 140° F or higher.
- Through testing or sufficient knowledge show that the pH of the spent solution is higher than 2.0 but lower than 12.5 as specified in 40 CFR § 261.22;
- Through testing or sufficient knowledge show that it is not reactive as specified in 40 CFR § 261.23;
- Through testing or sufficient process knowledge, show that the solution does not contain toxicity characteristic metals or organic chemicals above TCLP regulatory limits (see Table 1); and
- Through testing or sufficient process knowledge, show that the solution is not contaminated with F-listed solvents (see Table 2 and 40 CFR § 261.31.)

Waste management service companies may offer to perform or assist you, the generator, with your hazardous waste determination. However, the waste generator has the ultimate responsibility for performing the hazardous waste determination and for any mismanagement of their hazardous waste. You need to document your hazardous waste determination in your files, whether you have relied on analytical testing or can demonstrate sufficient process knowledge.¹

Record Keeping

Keep the following records for a minimum of three years:

- Test results or other documentation showing a waste is hazardous or non-hazardous, whether you have relied on analytical testing or can demonstrate sufficient process knowledge. These records should be kept for three years from the time the waste was last generated.¹
- Hazardous waste manifests (and Land Disposal Restriction forms, if needed) for off-site shipments of hazardous waste.

While the hazardous waste regulations do not require you to keep copies of invoices, receipts, or bills of lading for off-site shipments of non-hazardous waste, DEQ recommends that such documentation be maintained. Having this documentation will assist you in demonstrating to an inspector that you are meeting the requirements of other regulatory programs such as the solid waste regulations

Waste Characterization, Process Knowledge, and Parts Washers

In order to properly characterize a waste as hazardous or non-hazardous, a generator must perform analytical testing of a sample from that waste, or, when appropriate, a generator may rely on knowledge of its process to eliminate the need for repetitive sampling and analysis.

Whether spent parts washer solution is hazardous or not will depend on the chemicals and materials with which the parts being washed have come into contact, as well as the material make-up of the parts themselves. In the process of washing dirty parts, the cleaning solution may become contaminated with materials such as solvents, oils, greases, and metals. Due to the variables involved with parts washing, generators are encouraged to perform analytical testing on every batch of waste that is generated. Such testing may be necessary to ensure that hazardous wastes are handled appropriately and may avoid

¹ Conditionally Exempt Small Quantity Generators (CESQGs) are not subject to the requirement found in IDAPA 58.01.05.006 [40 CFR § 262.40(c)] to maintain hazardous waste characterization data. However, DEQ strongly recommends that CESQGs keep such documentation in their files to be able to demonstrate that an adequate hazardous waste determination has been performed. Maintaining this documentation will assist you in showing an inspector that you have performed the required hazardous waste determinations and properly determined your generator status.

expenses related to enforcement actions. For generators that find their spent parts washer solution content to be consistent, it may be appropriate to rely on clearly documented process knowledge to reduce sampling frequency. However, your hauler or disposal company may require testing in order to properly characterize, ship, and dispose of the waste since they may also be held liable for the mishandling of hazardous waste.

Relying on analyses of a *similar* waste from a different site or batch is not recommended because it does not take into account site-specific variables that are inherent to many parts washing operations. Relying on analysis of a *similar* waste increases the potential for the mishandling of hazardous waste and can lead to a costly enforcement action. This type of process knowledge characterization must be accompanied by a detailed description of why the generator believes it may rely on the analytical results from a *similar* waste sample. It is recommended that a generator consult with the Department of Environmental Quality in advance to determine whether characterizing in this way is appropriate. If using knowledge of your process to eliminate the need for repetitive sampling and analysis, you must keep a record of how you concluded that analysis is not necessary. Failure to adequately document process knowledge constitutes a failure to properly characterize the waste and may subject a generator to enforcement action.

In order to properly document process knowledge, you must re-evaluate your spent cleaning solutions periodically to verify that conditions affecting the composition of your waste have not changed. If you intend to show through initial testing that the solution from your parts washer is non-hazardous and you want the test results to apply to subsequent batches of the solution, you will need to document that your operation has remained the same, and be able to provide such documentation upon request. For example, your records should readily indicate:

- The same kinds of parts are being cleaned and the contaminants are the same.
- The same cleaner and cleaning process is being used.
- The length of time the solution was in service (e.g. 3 months) or the number of parts washed remains the same.

The sufficiency of a process knowledge determination is case-specific. If you have any questions regarding the sufficiency of a process knowledge determination, please consult with the Department of Environmental Quality in advance to determine whether characterizing in this way is appropriate.

Note that process knowledge may also be used to specify known characteristics in the waste stream thereby limiting the analytical work necessary. Generators are encouraged to use process knowledge in this way.

Table 1: Toxicity Contaminants and Maximum

Hazardous Waste Number	Contaminant	Concentration (milligrams per liter)
D004	Arsenic	5.0
D005	Barium	100.0
D018	Benzene	0.5
D006	Cadmium	1.0
D019	Carbon tetrachloride	0.5
D021	Chlorobenzene	100.0
D022	Chloroform	6.0
D007	Chromium	5.0
D023	o-Cresol	*200.0
D024	m-Cresol	*200.0
D025	p-Cresol	*200.0
D026	Cresol	*200.0
D027	1,4-Dichlorobenzene	7.5
D028	1,2-Dichloroethane	0.5
D029	1,1-Dichloroethylene	0.7
D030	2,4-Dinitrotoluene	0.13
D032	Hexachlorobenzene	0.13
D033	Hexachlorobutadiene	0.5
D034	Hexachloroethane	3.0
D008	Lead	5.0
D009	Mercury	0.2
D035	Methyl ethyl ketone	200.0
D036	Nitrobenzene	2.0
D037	Pentachlorophenol	100.0
D038	Pyridine	5.0
D010	Selenium	1.0
D011	Silver	5.0
D039	Tetrachloroethylene	0.7
D040	Trichloroethylene	0.5
D041	2,4,5-Trichlorophenol	400.0
D042	2,4,6-Trichlorophenol	2.0
D043	Vinyl chloride	0.2

**If o-, m-, and p-cresol concentrations cannot be differentiated, the total cresol (D026) concentration is used. The regulatory level of total cresol is 200 milligrams per liter.*

Table 2: Solvents on the F List

F001 Carbon tetrachloride, chlorinated fluorocarbons, methylene chloride, tetrachloroethylene, 1,1,1-trichloroethane, and trichloroethylene.

F002 Chlorobenzene, methylene chloride, orthodichlorobenzene, tetrachloroethylene, 1,1,1-trichloroethane, 1,1,2-trichloroethane, trichloroethylene, trichlorofluoromethane, and 1,1,2-trifluoroethane.

F003 Acetone, cyclohexanone, ethyl acetate, ethyl benzene, ethyl ether, methanol, methyl isobutyl ketone, n-butyl alcohol and xylene.

F004 Cresols, cresylic acid and nitrobenzene.

F005 Benzene, carbon disulfide, 2-ethoxyethanol, isobutanol, methyl ethyl ketone, 2-nitropropane, pyridine, toluene.

Mixtures and blends of the above solvents and distillation bottoms are also listed. For detailed information, see 40 CFR § 261.31.

Additional Information

For more information on how to count spent solvents to determine your generator status, link to [Counting Spent Solvents to Determine Hazardous Waste Generator Status](#) (DEQ Publication, November 1997).

For information on how to manage solvent-contaminated rags, link to [Management of Solvent-Contaminated Rags](#) (DEQ Publication, October 2001).

For more information on hazardous waste, log on to DEQ's Hazardous Waste Management webpage at www.deq.idaho.gov/hazardous-waste or contact DEQ:

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