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F-Listed Spent Solvent Hazardous Waste Determinations

This Environmental Guidance Document discusses the topic of the most common F-listed wastes, how to determine if you have F-listed solvent waste, what special conditions might apply, and considerations concerning analytical testing. The department has found that this topic can be complex and involves decisions that are often technical in nature. References are to [Title 128 – Nebraska Hazardous Waste Regulations](#).

1. What are the most common F-listed wastes?

- There are certain solvents that meet the definition of F-listed hazardous waste (Title 128, Chapter 3, §013 and Table 4). An F-listed waste is a hazardous waste from nonspecific sources. The most common are generated by solvent use and are certain spent solvents that are very specifically defined. These are F001, F002, F003, F004 (not so common), and F005. These five all have the words "spent solvent" in their definitions. As a result, unless the waste is a spent solvent and it meets all the applicable conditions in the definition, it cannot be an F001 through F005 listed hazardous waste. There are other F-listed wastes (all the way up to F039) but these are only occasionally observed except for unusual or very clearly defined circumstances. All the F-listed wastes are defined in Title 128, Chapter 3, Table 4.

2. Who generates F-listed solvent hazardous wastes?

- Businesses, governments, schools, and organizations that generate solid waste (in the hazardous waste regulations liquids are also considered solid waste) can generate F-listed waste. Household waste is excluded from this requirement.

3. What does "spent solvent" really mean?

- A solvent is considered "spent" when it has been used and is no longer fit for use without being regenerated, reclaimed, or otherwise reprocessed (Federal Register, December 31, 1985 (50 FR 53316)).
- It does not include process wastes where solvents were used as reactants or ingredients in the formulation of commercial chemical products. The products themselves are also not covered (50 FR 53316).
- The spent solvent listings (F001 through F005) cover only those solvents that are used for their solvent properties, that is, to solubilize (dissolve) or mobilize other constituents. For example,

solvents used in degreasing, cleaning, fabric scouring, extractions, reactions, and synthesis media. F001 through F005 constituents used as ingredients in a material are not spent solvents. Similarly, unused solvents that have F001 through F005 constituents also cannot be spent solvents.

- Process wastes that contain solvents that are ingredients in the formulation of a product are not covered under the spent solvent listings. This includes products such as paint that has been thinned with a solvent that is otherwise stated in the F-listings. Therefore, the thinned paint waste is not covered under the F001- F005 spent solvent listings

4. I've heard that the F003 listing is unique. How so?

- First, the F003 listing is based solely on the waste exhibiting the characteristic of ignitability (Hazard Code I). With that fact, the following applies: "A hazardous waste that is listed in Chapter 3, §013 through §018 of this Title (Title 128) solely because it exhibits one or more characteristics of ignitability, corrosivity, or reactivity as defined in Chapter 3 is not a hazardous waste if the waste no longer exhibits any of those characteristics" (Title 128, Chapter 2, §007.03). Note, however, that the land disposal restrictions still apply if the waste lost the characteristic after generation, but prior to land disposal (Title 128, Chapter 2, §007.03B). If the aforementioned waste did not exhibit any of the above mentioned characteristics at the point of generation, then the land disposal restrictions do not apply.
- Second, F003 is unique in that mixtures containing F003 spent solvents are covered under the listing only under two conditions: 1) the mixture contains **only** F003 constituents, **or** 2) the mixture contains one or more F003 constituents **and** a total of 10% or more of the other listed solvents prior to use. *Note how close you must read the F003 definition in the regulation.*

Example 1: Spent solvent containing 70% xylene (F003), 6% perchloroethylene, and 24% naphtha prior to use.

Example 2: Spent solvent containing 70% xylene (F003), 6% perchloroethylene, 5% toluene, 5% methyl ethyl ketone, 5% carbon disulfide, and 9% methylene chloride prior to use.

Example 3: Spent solvent containing 70% xylene (F003), 6% perchloroethylene, 5% toluene, 5% methyl ethyl ketone, 5% carbon disulfide, and 9% Stoddard Solvent prior to use.

Example 4: Spent solvent containing 70% xylene and 30 % Stoddard Solvent prior to use.

Example 1 is not an F003 solvent waste because it fails to meet either condition 1) or condition 2). The perc is less than 10% and it contains constituents other than F003. It is probably a characteristic ignitable waste (D001).

Example 2 is an F003 solvent waste because it meets condition 2 (an F003 constituent is present and there is a total of 10% or more of the other listed solvents).

Example 3 is an F003 solvent waste because it meets condition 2. Condition 2 requires the F003 constituent (which is present) and 10% or more of one or more of the other listed solvents (which are present). However, this will only be a listed F003 waste if the waste is ignitable at the point of generation (it almost certainly is in this example).

Example 4 is not an F003 solvent waste because it fails to meet condition 1 or 2. It is probably an ignitable (D001) waste.

5. What about testing?

- F001 through F005 listed waste is determined solely by the definitions as provided in Title 128, Chapter 3, §013, Table 4. There are no analytical tests that have any meaning other than ignitability in some instances. Therefore, save your money, you not only don't need to test, there is not much you can test for other than the mere presence of a constituent or ignitability. A current Material Safety Data Sheet will be able to tell you ignitability information in most cases. The mere presence of a constituent in a waste is clearly insufficient to define the presence of an F001 through F005 spent solvent listing.

6. What does "spent solvent used in degreasing" mean?

- The EPA Background Listings Document clarifies the intent of the F001 listing as opposed to other spent solvents. Specifically, the F001 listing is appropriate when tetrachloroethylene, trichloroethylene, methylene chloride, and 1,1,1-trichloroethane are used in large-scale industrial degreasing operations [e.g., cold cleaning, vapor degreasing (open top and conveyORIZED), and fabric scouring). Alternatively, tetrachloroethylene, trichloroethylene, methylene chloride, and 1,1,1-trichloroethane used in equipment cleaning or in smaller scale degreasing operations involving repair work (that do not employ industrial degreasing processes as described above), such as industrial, maintenance and repair, commercial service and repair, and consumer performed maintenance and repair, receive the F002 listing .(May 1991 EPA RCRA Hotline Summary)

RESOURCES:

- NDEE Home Page <http://dee.ne.gov/>

Contacts:

- NDEE Waste Management Section (402) 471-4210
- NDEE Toll Free Number (877) 253-2603
- NDEE Hazardous Waste Compliance Assistant (402) 471-8308
- Email questions to: ndee.moreinfo@nebraska.gov

NDEE Publications:

- Guidance Document – Waste Determinations and Hazardous Waste Testing
Guidance Documents are available on the NDEE Home Page under "*Publications & Forms*"
- [Title 128 – Nebraska Hazardous Waste Regulations](#)
- [Title 132 – Integrated Solid Waste Management Regulations](#)
Titles are available on the NDEE Home Page under "*Laws/Regs & EQC*", "*Rules & Regulations*"

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