Technical Bulletin

Health, Safety and Environmental Affairs – Disposal of Metalworking Fluid Waste

Spent metalworking fluids are a fact of manufacturing life and they must be treated with respect and within the federal, state and local laws. Nothing in this Technical Bulletin should be substituted for the advice of trained professionals who are intimately familiar with your particular situation and community.

Some of the facts of life as they relate to waste disposal of Metalworking Fluids (MWFs):

1. The less you have to dispose of the better off you are.
2. It is never OK to dispose of it into the environment.
3. "Biodegradable or not", no matter what it says on the drum, once it has been used it should not go into the sewer or environment without special arrangements.

Once you have generated liquid waste MWF you have only two viable options open to you. The material can be hauled away for disposal off site or the material can be waste treated on site in any one of several different ways.

If you elect to have the material hauled, it is critical that you understand that while you no longer have control of the waste material and it is no longer physically located on your property you are and will forever be responsible for that waste material. The selection of your waste hauler is critical! The waste hauler must be reputable and you must know what is going to happen to the waste material after it leaves your facility. Will it be buried or otherwise safely stored for all eternity, or will the waste hauler treat the material in such a manner that it is nonhazardous? The answer to that question determines to a large degree your extended liability.

"Haul away" costs are very much location specific. It will depend on what kind of waste you are hauling as defined by a TCLP test (standardized laboratory analysis of the waste stream), volumes, and how the waste hauler is going to deal with the material. Additionally, each time you ship waste off site you will need to generate and properly file a hazardous waste manifest so that everyone knows who the waste belongs to and what it was.

If you elect to treat your waste on site you have several options available to you. It is important to understand that most of these options do not totally eliminate waste but rather reduces the volume so the method you select will depend a great deal on:

1. What kind of restrictions your local POTW (publicly owned waste treatment facility – sewer department) will accept
2. The volumes of waste to be treated
3. What the waste stream consists of and how consistent it is
4. The cost of installing, maintaining, and operating the disposal plant

These options include:

1. Evaporation – this is particularly well suited in plants where the waste stream is low in oil and oil like products or where there is waste heat that can be captured to run the unit. It is also useful where a plant does not have access to a POTW, such as a septic system or something similar and has no way of disposing of the waste water that results from the other processes.
2. Ultra filtration (UF) – UF works very well where the waste stream is high in oil and the POTW restrictions are largely related to BOD (biological oxygen demand) and FOG (fats oils and greases). In general, UF does not work particularly well on its own in reducing COD (chemical oxygen demand).
3. Reverse Osmosis System or RO is a process that is not oil tolerant but can if necessary remove nearly all the ions present in the water-based working solution. RO can take water to "0" COD, but in general, is not a cost effective method of removing BOD or FOG.
4. Chemical Waste Treatment is typically the least expensive of all the processes and can be very flexible. It does however require a substantial capital outlay and knowledgeable people running and managing the equipment.

We at Master Fluid Solutions have worked with and continue to work with all the systems including some hybrid systems that consist of elements from more than one of the system types.

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