

IMPROVING THE WAY YOU WORK: TASK-ENGINEERED WIPERS VS. RENTAL SHOP TOWELS:

Spills, grease, oil, solvents, sweat and dirt are all a fact of life in most plant environments. And most workers don't think twice before grabbing a familiar red rental shop towel to wipe up the mess. Perhaps they should.

A new generation of task engineered wipers is proving that so-called "clean" rental shop towels are not necessarily the best tool for the job, the worker or the environment. Using task-engineered wipers can provide numerous benefits including:

- improving worker productivity
- promoting a safe workplace
- improving the management of MRO costs
- protecting the environment

Rental shop towels are wipers made from cloth (often imported) that are used (picking up an array of dirt, oils, solvent and sweat), rewashed and reused approximately 15 different times. Task engineered wipers are made from paper or cellulose fibers and nonwoven fabrics. Sometimes called "disposables," many task engineered wipers are very durable and can be used for extended periods.

Improving Productivity

Task engineered wipers have several productivity advantages over rental shop towels. First, advances in fibers, manufacturing techniques and dispensing options mean it's easy to find a wiper engineered for a specific task and a specific work environment. For example, certain fiber blends are more effective at *releasing liquids* while other blends quickly and cleanly *absorb liquids*. In addition, task-engineered wipers are manufactured to be consistent in terms of size, cleanliness and performance. Rental shop towels can vary in size and performance and they may contain residual oils and chemicals (even when "freshly" laundered) that can affect absorption.

Selecting the best wiping system for your task is similar to selecting the right power tool for a task. Understanding the task being performed and the variables that exist in the work environment will result in determining the best system (combination of sheet type and dispensing alternative) for that task. One size does not fit all when the goal is maximizing productivity.

Protecting the Worker

Task engineered wipers can also provide worker safety benefits because they are consistently clean and free from contamination. Rental shop towels that come “clean” from the launderer often contain residual substances the laundering process couldn’t remove, including metal shavings, oil and grease. Workers are then exposed to these substances, which can injure faces and hands or cause skin rashes. Loose threads commonly found with laundered rental shop towels can get caught or snag on equipment. Task-engineered wipers, on the other hand, are free from these potential hazards.

Managing MRO Costs

Task engineered wipers are invoiced based upon a specific price per case, which means you know how many wipers are in a case and can easily calculate your cost per use. With rental shop towels you need to consider multiple costs to calculate your actual cost per use. Launderers utilize a number of charges, such as:

- Replacement charges — to recover the cost of lost and ruined shop towels, launderers will often invoice customers for replacement charges. These charges may be based upon actual lost/ruined quantities, or they may automatically be included on the invoice at an assumed rate of loss.
- Environmental charges — launderers often charge their customers to help cover their operating costs, adding additional costs to your invoice.
- Circulating inventory — many launderers charge for an inventory level, not *actual usage*, meaning you may be paying for towels you don’t even use.

Protecting the Environment

The following statistics from the U.S. Environmental Protection Agency (EPA) put environmental considerations relating to laundered rental shop towels in perspective:

- Industrial laundries discharge 563 million pounds per year of pollutants, of which 13 million pounds are “toxic and nonconventional” - including lead, toluene, xylene, zinc, and other heavy metals known to cause cancer or kill aquatic life.
- Shop and printer towels represent 80% of the toxic pollutant loading from industrial laundry items.
- 27 percent of public sewage treatment plants responding to an EPA survey reported that their facilities encounter difficulties resulting from the discharges from industrial laundries - which becomes a taxpayer burden.

Although task-engineered wipers do end up in landfills, they contribute an insignificant one-tenth of one percent of the nation’s landfilled waste². And, according to a study conducted by Lockheed Martin Environmental Services for the EPA, the solid waste generated from the cleaning of rental shop towels actually contributes 30 percent more waste to landfills than non-woven wipers.

EPA Initiative

The EPA has jurisdiction over waste disposal in the United States. The federal law governing the storage, handling and disposal of hazardous waste is the Resource Conservation Recovery Act (RCRA). Another relevant federal law is the Comprehensive, Environmental Response, Compensation & Liability Act (CERCLA). Under CERCLA, the user/generator of a hazardous substance cannot escape liability for Superfund remediation. While rental shop towels have been exempt from RCRA in many states, users/generators are not exempt from CERCLA.

The EPA is currently working on an initiative to address the inequity in regulatory treatment between rental shop towels (exempt from RCRA in many states) and industrial wipers (not exempt) though the applications and usage is the same. EPA's Office of Solid Waste is considering a uniform federal exemption from RCRA for task engineered wipers and for rental shop towels. A proposed rule is expected in early 2000.

Disposing of Task Engineered Wipers Used with Hazardous Solvents

When using hazardous solvents, the appropriate environmental solution under current EPA regulations, is to treat the used solvents – and wiping products used with those solvents – as hazardous waste. Sending a rental shop towel with hazardous solvent to an industrial laundry, as noted above, is likely to result in the solvent simply being sent into the public water system. Using a task engineered wiper and managing it as hazardous waste results in the waste being appropriately handled in accordance with EPA guidelines. Large users who employ a hazardous waste disposal company will be recycling their waste into energy at waste-to-energy plants. Small users may be allowed to simply dispose of the waste in their regular garbage as long as the wiping product isn't dripping when disposed of.

What are the Disposal Regulations for Task Engineered Wipers?

A few simple steps will enable you to determine how to handle the disposal of task engineered wipers. The first question to answer is: **Is my waste hazardous?** Even one “yes” answer to any of the questions below qualifies a plant as a generator of hazardous waste:

- Does the waste appear on any of the four lists published in the Code of Federal Regulations (40 CFR)? These are called *listed wastes* and include commonly used solvents such as acetone, xylene, toluene, and methyl ethyl ketone (MEK). If a wiper comes into contact with a listed hazardous solvent, it automatically becomes hazardous waste.
- Is the flashpoint below 140F? This is called *ignitable waste* and includes certain paints, solvents and degreasers.
- Does it corrode metals or have a very high (≥ 12.5) or low (≤ 2) pH? This is called *corrosive waste* and includes certain rust removers, acid or alkaline cleaning fluids and battery acid.
- Is it unstable or explosive, or does it produce toxic fumes, gases and vapors when mixed with water or under other conditions such as heat or pressure? These are called *reactive wastes* and include certain cyanides or sulfide-bearing wastes.
- Is it harmful when ingested, or does it leach toxic chemicals into the soil or ground water when disposed of on land? This is called *toxic waste*.

If a wiper comes in contact with a corrosive, reactive, ignitable or toxic waste, and the wiper/solvent mixture possesses the characteristics when it is disposed of, it is a hazardous waste.

Once you've determined whether or not your waste is hazardous, you must **determine your generator category**. Generator categories include “large,” “small,” and “conditionally exempt small.” Different regulations apply to each category. Generator categories are listed in Table 1, and federal requirements for each generator status are reviewed in Table 2 to help you **determine what your responsibilities are for hazardous waste**.

It's important to remember that, even if you are using laundered rental shop towels, you (as the user/generator of hazardous substances) are still ultimately responsible for the proper disposal of hazardous wastes.

Oil and Grease

While the federal EPA does not consider wipers soiled with used oil or grease to be hazardous waste, four states (California, Massachusetts, Rhode Island and Vermont) currently regulate used oil as hazardous waste. In these states, used oil — alone or mixed with other substances, such as wipers — must be managed and disposed of as hazardous waste. However, oily wipers, as opposed to used oil, may currently be disposed of in municipal landfills in two of those states: California and Massachusetts. The other 46 states do not currently regulate used oil as hazardous waste. Many allow oil- and grease-contaminated wipers to be disposed of in municipal landfills. Often, additional specific disposal requirements apply.

In the 48 states that allow oil- and grease-contaminated wipers to be disposed of in municipal landfills, the generator must first confirm that the wipers do not contain other hazardous wastes or free liquid (i.e., the wipers don't "drip"). Because local ordinances and federal and state regulations change from time to time, it's important to check with your waste disposal facility or waste hauler prior to disposing of oil- or grease-contaminated wipers in a municipal landfill.

Summary

The choice is ultimately up to you to determine which type of wiping product or system is best for your situation. Task engineered wipers can provide benefits in the areas of worker productivity, protecting our natural resources, safety and managing your MRO costs. Talk with your task engineered wiper supplier to find the right wiper(s) to meet your specific task needs and improve the way you work.

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While the information contained in this article is intended to provide general guidelines, keep in mind that each individual plant site must always make its own determination regarding disposal and interpretations of disposal regulations. The author recommends contacting your local waste hauler and state/local environmental agency for specific recommendations.

References

1. "Effluent Limitations Guidelines and Pretreatment Standards for the Industrial Laundries Point Source Category; Proposed Rule," United States Environmental Protection Agency, Federal Register, December 17, 1997.
2. "A Comparison from the Environmental Impacts from the Disposable Wipers and Rental Wipers," Lockheed Martin Environmental Services.
3. Environmental Assessment of Shop Towel Usage in the Automotive and Printing Industries," Lockheed Martin Environmental Systems and Services.

The author would like to thank INDA, the Association of the Nonwoven Fabrics Industry and SMART, Secondary Materials and Recycled Textiles Association for contributing information for this article.

Waste Generated Per Month	Generator Category
up to 220 lbs (100 kg)	CESQG-Conditionally Exempt Small Quantity Generator
220-2,200 lbs (100-1000 kg)	SQG-Small Quantity Generator
more than 2,200 lbs (1,000+ kg)	LQG-Large Quantity Generator

Table 1 — Determining your generator category.

Requirements for Generator Status	CESQG	SQG	LQG
Identify hazardous waste	X	X	X
Proper storage and handling of hazardous waste	X	X	X
Use a hazardous waste manifest when transporting hazardous waste		X	X
Transport waste on a vehicle licensed to transport hazardous waste		X	X
Dispose of hazardous waste at a licensed treatment, storage and disposal facility (TSDF)		X	X
Meet EPA reporting requirements		X	X

Table 2 — Note that CESQGs may dispose of their hazardous waste in a municipal landfill and a hazardous waste manifest is not required.