



# Managing Used Oil

## Advice for Small Businesses

### Used Oil Is\*

- Synthetic oil—usually derived from coal, shale, or polymer-based starting material
- Engine oil—typically includes gasoline and diesel engine crankcase oils and piston-engine oils for automobiles, trucks, boats, airplanes, locomotives, and heavy equipment
- Transmission fluid
- Refrigeration oil
- Compressor oils
- Metalworking fluids and oils
- Laminating oils
- Industrial hydraulic fluid
- Copper and aluminum wire drawing solution
- Electrical insulating oil
- Industrial process oils
- Oils used as buoyants

*This list does not include all types of used oil.*

### Used Oil Is Not

- Waste oil that is bottom clean-out waste from virgin fuel storage tanks, virgin fuel oil spill cleanups, or other oil wastes that have not actually been used
- Products such as antifreeze and kerosene
- Vegetable and animal oil, even when used as a lubricant
- Petroleum distillates used as solvents

*Oils that do not meet EPA's definition of used oil can still pose a threat to the environment when disposed of and could be subject to the RCRA regulations for hazardous waste management.*

This fact sheet contains valuable information for businesses such as service stations, fleet maintenance facilities, and "quick lube" shops that generate and handle used oil.

It summarizes the U.S. Environmental Protection Agency's (EPA's) used oil management standards—a set of "good housekeeping" requirements for used oil handlers. These requirements are detailed in Title 40 of the *Code of Federal Regulations (CFR)* Part 279. For a complete understanding of these standards, contact the RCRA Hotline at 800 424-9346. Small businesses should also refer to EPA's Emergency Response Division's Information Line at 202 260-2342 for information on how to manage spills.

### What Is Used Oil?

EPA's regulatory definition of used oil is as follows: *Used oil is any oil that has been refined from crude oil or any synthetic oil that has been used and as a result of such use is contaminated by physical or chemical impurities.*

Simply put, used oil is exactly what its name implies—any petroleum-based or synthetic oil that has been used. During normal use, impurities such as dirt, metal scrapings, water, or chemicals can get mixed in with the oil, so that in time the oil no longer performs well. Eventually, this used oil must be replaced with virgin or re-refined oil to do the job at hand.

EPA's used oil management standards include a three-pronged approach to determine if a substance meets the definition of used oil. To meet EPA's definition of used oil, **a substance must meet each of the following three criteria:**

**Origin**—the first criterion for identifying used oil is based on the origin of the oil. Used oil must have been refined from **crude oil** or made from **synthetic** materials. Animal and vegetable oils are excluded from EPA's definition of used oil.

**Use**—the second criterion is based on whether and how the oil is used. Oils used as lubricants, hydraulic fluids, heat transfer fluids, buoyants, and for other similar purposes are considered used oil. Unused oil such as bottom clean-out waste from virgin fuel oil storage tanks or virgin fuel oil recovered from a spill, do not meet EPA's definition of used oil because these oils have never been "used." EPA's definition also excludes products used as cleaning agents or solely for their solvent properties, as well as certain petroleum-derived products like antifreeze and kerosene.

**Contaminants**—the third criterion is based on whether or not the oil is contaminated with either physical or chemical impurities. In other words, to meet EPA's definition, used oil must become contaminated as a result of being used. This aspect of EPA's definition includes residues and contaminants generated from handling, storing, and processing used oil. Physical contaminants could include metal shavings, sawdust, or dirt. Chemical contaminants could include solvents, halogens, or saltwater.

### How Is Used Oil Recycled?

Once oil has been used, it can be collected, recycled, and used over and over again. An estimated 380 million gallons of used oil are recycled each year. Recycled used oil can sometimes be used again for the same job or can take on a completely different task. For example, used motor oil can be re-refined and sold at the store as motor oil or processed for furnace fuel oil. Aluminum rolling oils also can be filtered on site and used over again.



Used oil can be recycled in the following ways:

- **Reconditioned** on site, which involves removing impurities from the used oil and using it again. While this form of recycling might not restore the oil to its original condition, it does prolong its life.
  - **Inserted into a petroleum refinery**, which involves introducing used oil as a feedstock into either the front end of the process or the coker to produce gasoline and coke.
- **Re-refined**, which involves treating used oil to remove impurities so that it can be used as a base stock for new lubricating oil. Re-refining prolongs the life of the oil resource indefinitely. This form of recycling is the preferred option because it closes the recycling loop by reusing the oil to make the same product that it was when it started out, and therefore uses less energy and less virgin oil.
- **Processed and burned for energy recovery**, which involves removing water and particulates so that used oil can be burned as fuel to generate heat or to power industrial operations. This form of recycling is not as preferable as methods that reuse the material because it only enables the oil to be reused once. Nonetheless, valuable energy is provided (about the same as provided by normal heating oil).

### Recycling Used Oil Is Good for the Environment and the Economy—Here's Proof!

- Re-refining used oil takes only about one-third the energy of refining crude oil to lubricant quality.
- It takes 42 gallons of crude oil, but only one gallon of used oil, to produce 2 1/2 quarts of new, high-quality lubricating oil.
- One gallon of used oil processed for fuel contains about 140,000 British Thermal Units (BTUs) of energy.

## Does My Business Handle Used Oil?

The following paragraphs describe different types of businesses that handle used oil.

- **Generators** are businesses that handle used oil through commercial or industrial operations or from the maintenance of vehicles and equipment. Generators are the largest segment of the used oil industry. Examples of common generators are car repair shops, service stations, quick lube shops, government motorpools, grocery stores, metal working industries, and boat marinas. *Farmers who produce less than an average of 25 gallons of used oil per month are excluded from generator status. Individuals who generate used oil through the maintenance of their personal vehicles and equipment are not subject to regulation under the used oil management standards.*

- **Collection centers and aggregation points** are facilities that accept small amounts of used oil and store it until enough is collected to ship it elsewhere for recycling. Collection centers typically accept used oil from multiple sources that include both businesses and individuals. Aggregation points collect oil only from places run by the same owner or operator and from individuals.
- **Transporters** are companies that pick up used oil from all sources and deliver it to re-refiners, processors, or burners. Transfer facilities include any structure or area where used oil is held for longer than 24 hours, but not longer than 35 days. Examples of transfer facilities are loading docks and parking areas.
- **Re-refiners and processors** are facilities that blend or remove impurities from used oil so that it can be burned for energy recovery or reused. Included in this category are re-refiners who process used oil so that it can be reused in a new product such as a lubricant and recycled again and again. EPA's management standards primarily focus on this group of used oil handlers.
- **Burners** burn used oil for energy recovery in boilers, industrial furnaces, or in hazardous waste incinerators.
- **Marketers** are handlers who either a) direct shipments of used oil to be burned as fuel in regulated devices or, b) claim that certain EPA specifications are met for used oil to be burned for energy recovery in devices that are not regulated. They also sometimes help move shipments of used oil to burners. By definition, marketers must also fall into at least one of the above categories.

## What Standards Should My Business Follow?

If your business generates or handles used oil, there are certain good housekeeping practices that you must follow. These required practices, called "management standards," were developed by EPA for businesses that handle used oil. The management standards are common sense, good business practices designed to ensure the safe handling of used oil, to maximize recycling, and to minimize disposal. The standards apply to all used oil handlers, regardless of the amount of the oil they handle.

Although different used oil handlers may have specific requirements, the following requirements are common to all types of handlers. These requirements relate to storage and to cleaning up leaks and spills, as follows.

### Storage

- Label all containers and tanks as Used Oil.
- Keep containers and tanks in good condition. Don't allow tanks to rust, leak, or deteriorate. Fix structural defects immediately.
- Never store used oil in anything other than tanks and storage containers. Used oil may also be stored in units that are permitted to store regulated hazardous waste. Tanks and containers storing used oil do not need to be RCRA permitted, however, as long as they are labeled and in good condition. Storage of used oil in lagoons, pits, or surface impoundments that are not permitted under RCRA is prohibited.

## **Oil Leaks or Spills**

- Take steps to prevent leaks and spills. Keep machinery, equipment containers, and tanks in good working condition and be careful when transferring used oil. Have sorbent materials available on site.
- If a spill or leak occurs, stop the oil from flowing at the source. If a leak from a container or tank can't be stopped, put the oil in another holding container or tank.
- Contain spilled oil. For example, containment can be accomplished by erecting sorbent berms or by spreading a sorbent over the oil and surrounding area.
- Clean up the oil and recycle the used oil as you would have before it was spilled. If recycling is not possible, you first must make sure the used oil is not a hazardous waste and dispose of it appropriately. All used cleanup materials, from rags to sorbent booms, that contain free-flowing used oil also must be handled according to the used oil management standards. Remember, all leaked and spilled oil collected during cleanup must be handled as used oil. If you are a used oil handler, you should become familiar with these cleanup methods. They may also be part of a spill response action plan.
- Remove, repair, or replace the defective tank or container immediately.

## **Record Keeping**

EPA uses 12-digit identification (ID) numbers to track used oil. Transporters hauling used oil must have a valid EPA ID number, and generators, collection centers, and aggregation points must use transporters with EPA ID numbers for shipping used oil off site. If you need an ID number, contact your EPA regional office or your state director. (You also can call the RCRA Hotline for more information.) Generators, collection centers, aggregation points, and any handler that transports used oil in shipments of less than 55 gallons do not need an ID number, but may need a state or local permit.

Used oil transporters, processors, burners, and marketers also must record each acceptance and delivery of used oil shipments. Records can take the form of a log, invoice, or other shipping document and must be maintained for three years. Re-refiners, processors, transfer facilities, and burners must have secondary containment systems (e.g., oil-impervious dike, berm, or retaining wall and a floor) so that oil can not reach the environment in the event of a leak or spill. EPA also encourages generators to use a secondary containment system to prevent used oil from contaminating the environment.

Burners of used oil that meets a certain set of quality standards called the used oil specifications are not regulated under the used oil management standards, as long as the used oil is burned in appropriate boilers, furnaces, or incinerators. Call the RCRA Hotline for more information.

**Know and understand your state regulations governing the management of used oil—they might be stricter than EPA's. Contact your state or local environmental agency to determine your best course of action.**

## **Mixing Used Oil and Hazardous Waste**

In addition to EPA's used oil management standards, your business may be required to comply with federal and state hazardous waste regulations if your used oil becomes contaminated from mixing it with hazardous waste. If used oil is mixed with hazardous waste, it probably will have to be managed as a hazardous waste. Hazardous waste disposal is a lengthy, costly, and strict regulatory process. The only way to be sure your used oil does not become contaminated with hazardous waste is to store it separately from all solvents and chemicals and not to mix it with anything. If you believe your used oil might be mixed with a hazardous waste, call the RCRA Hotline at 800 424-9346. Hotline representatives can answer most of your questions or direct you to appropriate state environmental offices.

## **How Should My Business Manage Used Oil Filters?**

The Filter Manufacturers' Council maintains a regulatory hotline and database to encourage the proper management of used oil filters. By calling the hotline at 800 99-FILTER, you can access the proper management requirements for your particular states. The database contains:

- Overviews of federal and state regulations relevant to the management of oil filters.
- Addresses and phone numbers of the regulatory agencies governing the management of used filters in each state.
- A listing of companies, by state, that transport, process, and recycle used filters.



# How Can My Business Avoid Costly Cleanups?

**M**eeting the following conditions relieves service station dealers from responsibility for costly cleanups and liabilities associated with off-site handling of used oil. To meet these conditions, service stations must: (1) comply with the management standards described on page 2 and 3, (2) not mix used oil with any hazardous substance, and (3) accept used oil from Do-it-yourselfers (DIYs) and send it for recycling. Call the RCRA Hotline for complete details regarding this liability exemption.

## Recommended Cleanup Practices

EPA recommends, but does not require, the following cleanup practices for used oil handlers: (1) maximize the recovery of used oil; (2) minimize the generation of used oil sorbent waste by choosing reusable sorbent materials; (3) use the spent sorbent materials to produce recycled sorbent materials; and (4) buy sorbent materials with recycled content.

Extraction devices (e.g., centrifuges, wringers, and compactors) can be used to recover used oil from reusable sorbent materials. Sorbent pads can be reused between two and eight times depending on the viscosity of the used oil. These technologies, while not required, can be used to reduce the number of sorbent pads ultimately sent for remanufacture, energy recovery, or disposal. The potential to reduce waste and save money (i.e., lower disposal costs for spent pads and lower per use cost of sorbent pads) by reusing and recycling sorbent pads can be substantial.

## Managing Cleanup Materials

If you have used oil on rags or other sorbent materials from cleaning up a leak or spill, you should remove as much of the free-flowing oil as possible and manage the oil as you would have before it spilled.

Once the free-flowing used oil has been removed from these materials, they are not considered used oil and may be managed as solid waste as long as they do not exhibit a hazardous waste characteristic. Note, however, that materials from which used oil has been removed continue to be regulated as used oil if they are to be burned for energy recovery (regardless of the degree of removal).

## What Else Can My Business Do to Conserve Oil?

- Minimize the amount of used oil you produce. The less used oil that is produced in the first place, the less that ultimately has to be handled. Businesses can filter, separate, and recondition used oil to prolong its usable life.
- Purchase re-refined used oil products instead of virgin oil products. Re-refined oil works just as well as virgin oil. Products that display the American Petroleum Institute (API) "starburst" meet the same high-quality specifications as virgin oil.
- Practice safe management of used oil. Don't mix used oil with anything. Always store used oil in leak-proof containers that are in secure areas safely away from workers and the environment. Send used oil to a re-refiner whenever possible.

## For More Information

For additional information, call the RCRA Hotline. Callers within the Washington Metropolitan Area must dial 703 412-9810 or TDD 703 412-3323 (hearing impaired). Long-distance callers may call 800 424-9346 or TDD 800 553-7672. The RCRA Hotline operates weekdays, 9:00 am to 6:00 pm. Write to the RCRA Information Center (5305W), U.S. Environmental Protection Agency, 401 M Street, SW., Washington, DC 20460.



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