

RCRA

INFOCUS

FURNITURE MANUFACTURING AND REFINISHING



- REGULATORY REVIEW
- REDUCING WASTE AND PREVENTING POLLUTION
- RELEVANT RESOURCES



United States
Environmental Protection
Agency

Solid Waste and
Emergency Response
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FOR MORE INFORMATION CALL:

RCRA Superfund & EPCRA Call Center

U.S. Environmental Protection Agency

800 424-9346 or TDD 800 553-7672

In the Washington, DC, area: 703 412-9810

or TDD 703 412-3323.



FOREWORD

Foreword

If you are a furniture manufacturer or refinisher, your facility probably generates hazardous waste. That means you are regulated by the U.S. Environmental Protection Agency (EPA) under a federal law called the Resource Conservation and Recovery Act (RCRA). Under RCRA, you are required to follow certain procedures when generating, transporting, storing, treating, or disposing of hazardous waste. *RCRA in Focus* provides an overview of the federal regulations you are required to follow and the wastes that are likely to be hazardous in your business. It also provides federal recycling and pollution prevention options to help you decrease the amount of hazardous waste you generate.

FREQUENTLY ASKED QUESTIONS ABOUT RCRA

STATE REQUIREMENTS

You may be regulated both by your state hazardous waste agency and EPA. RCRA allows states to receive legal permission, known as authorization, to implement the RCRA hazardous waste program. You must always contact your state authority to determine which state requirements apply to your business.

To operate a hazardous waste program, a state's regulations must be consistent with, and at least as stringent as, the federal program. Some states adopt more stringent requirements for facilities handling hazardous waste, which are considered part of the authorized program.

MORE QUESTIONS?

Call the RCRA Superfund & EPCRA Call Center at 800 424-9346 or TDD 800 553-7672 for additional information about RCRA rules and regulations. In the Washington, DC, area, call 703 412-9810 or TDD 703 412-3323.

What Is RCRA?

RCRA is a federal law that encourages environmentally sound methods for managing commercial and industrial waste as well as household and municipal waste. It regulates facilities that generate, transport, treat, store, or dispose of hazardous waste. The vast majority of furniture manufacturers and refinishers are considered hazardous waste generators, rather than treatment, storage, and disposal facilities (TSDFs), which are subject to more rigorous regulations.

The term "RCRA" is often used interchangeably to refer to the law, the regulations, and EPA policy and guidance. The *law* describes the waste management program mandated by Congress that gave EPA authority to develop the RCRA program. EPA *regulations* carry out the Congressional intent by providing explicit, legally enforceable requirements for waste management. EPA *guidance documents* and *policy directives* clarify issues related to the implementation of the regulations.

All of the RCRA hazardous waste regulations can be found in the *Code of Federal Regulations* (CFR), Title 40, Parts 260 to 279. The CFR can be purchased through the U.S. Government Printing Office (GPO) or is available online at www.access.gpo.gov/nara/cfr/cfr-table-search.html.

Who Is Regulated?

Any furniture manufacturing and refinishing facility that generates hazardous waste is potentially subject to RCRA. You must conduct tests required by the regulations or use your knowledge of and familiarity with the waste you generate to determine whether it is hazardous waste (as opposed to other types of waste). You might be subject to substantial civil and criminal penalties if you fail to properly or completely identify hazardous waste generated by your business.

What Is Hazardous Waste?

To be considered hazardous waste, a material first must be classified as a solid waste. EPA defines solid waste as garbage, refuse, sludge, or other discarded material (including solids, semisolids, liquids, and contained gaseous materials). If your waste is considered solid waste, you must then determine if it is hazardous waste. Wastes are defined as hazardous by EPA if they are specifically named on one of four lists of hazardous wastes (listed wastes) or if they exhibit one of four characteristics (characteristic wastes). Each type of RCRA hazardous waste is given a unique hazardous waste code using the letters D, F, K, P, or U and three digits (e.g., D001, F005, P039). See pages 8 to 10 for additional information on furniture manufacturing and refinishing waste codes.

Listed Wastes. Wastes are listed as hazardous because they are known to be harmful to human health and the environment when not managed properly, regardless of their concentrations. The lists include the following three types of waste:

- **Non-Specific Source Wastes.** These are material-specific wastes, such as solvents, generated by several different industries. Waste codes range from F001 to F039. Examples include spent solvents such as xylene, toluene, and acetone waste.
- **Specific Source Wastes.** These are wastes from specifically identified industries. Waste codes range from K001 to K161. Examples include wastes from chemical manufacturing and petroleum refining.

Questions

- **Discarded Commercial Chemical Products.** Off-specification products, container residuals, spill residue runoff, or active ingredients that have spilled or are unused and that have been, or are intended to be, discarded. Waste codes for acutely hazardous chemicals range from P001 to P205 and U001 to U411. Examples include unused xylene, toluene, acetone, and methyl ethyl ketone products.

Characteristic Wastes. Even if your waste does not appear on one of the hazardous waste lists, it still might be regulated as hazardous waste if it exhibits one or more of the following characteristics:

- **Ignitability.** Ignitable wastes create fires under certain conditions or are spontaneously combustible, and have a flash point less than 60 °C (140 °F). One example is spent solvents from furniture manufacturing and finishing operations. The waste code for these materials is D001.
- **Corrosivity.** Corrosive wastes are acids or bases that are capable of corroding metal containers, such as storage tanks, drums, and barrels. Acidic waste from furniture surface preparation is a good example. The waste code for these materials is D002.
- **Reactivity.** Reactive wastes are unstable under “normal” conditions. They can cause explosions, toxic fumes, gases, or vapors when mixed with water. Examples include discarded munitions or explosives. The waste code for these materials is D003.
- **Toxicity.** Toxic wastes are harmful or fatal when ingested or absorbed. When toxic wastes are disposed of on land, contaminated liquid may drain (leach) from the waste and pollute ground water. Toxicity is defined through a laboratory procedure called the Toxicity Characteristic Leaching Procedure (TCLP). Certain chemicals in pigment wastes generated from furniture staining and painting are examples of potential toxic wastes. The waste codes for these materials range from D004 to D043.

How Are Generators Regulated?

If your furniture manufacturing and refinishing business generates hazardous waste, you must manage it according to regulations for your specific generator type. Hazardous waste generators are divided into three categories, according to how much they generate in a calendar month:

- **Large Quantity Generators (LQGs).** LQGs generate greater than or equal to 1,000 kg (approximately 2,200 lbs) of hazardous waste per month, or greater than 1 kg (approximately 2.2 lbs) of acutely hazardous waste per month.
- **Small Quantity Generators (SQGs).** SQGs generate greater than 100 kg (approximately 220 lbs) but less than 1,000 kg of hazardous waste per month.
- **Conditionally Exempt Small Quantity Generators (CESQGs).** CESQGs generate less than or equal to 100 kg of hazardous waste per month, and less than or equal to 1 kg of acutely hazardous waste per month.

Some states do not recognize the CESQG category. Contact your state environmental agency to find out if the CESQG status is recognized. **To find your appropriate state contact, call the RCRA Superfund & EPCRA Call Center at 800 424-9346 or visit <www.epa.gov/epaoswer/hotline/states.pdf>.**

AM I REGULATED BY RCRA OR SUPERFUND?

RCRA regulates the treatment, storage, and disposal of hazardous waste being generated now and in the future. Superfund was created to pay for the identification, inspection, investigation, ranking, and cleanup of abandoned or uncontrolled hazardous waste sites that people responsible for contamination are unable or unwilling to clean up. Call the RCRA Superfund & EPCRA Call Center for more information.

HOW IS USED OIL HANDLED?

RCRA contains special provisions for the management of used oil destined for recycling or reuse. These management standards apply to oil refined from crude oil or any synthetic oil that has become contaminated through use by chemical or physical impurities. Used oil that will be recycled or reused is subject to special management standards, rather than the hazardous waste standards, unless it is treated as a waste (i.e., you decide to send the used oil for treatment and disposal rather than recovery or recycling).

Under the federal RCRA requirements, your generator status might change from one month to the next as the quantity of waste you generate changes. State requirements vary widely. You must comply with whichever standard is applicable for a given month. In many cases, small businesses that fall into different generator categories at different times choose to always satisfy the more stringent requirements (usually state requirements) to simplify compliance. Generators must “count” the amount of waste generated, which involves adding up the total weight of all quantities of characteristic and listed waste generated at a particular facility. Certain wastes, such as those that are reclaimed or recycled continuously on site, are not counted under the federal regulations.

Do Exclusions Exist?

The RCRA regulations contain many exclusions for wastes and waste management practices that are not considered to be hazardous. Several exclusions and exemptions pertain specifically to the furniture manufacturing and refinishing industry. Some states, however, do not recognize the federal exclusions, so check with your appropriate state contact.

Exclusions and Exemptions	Description
Domestic Sewage Exclusion	Mixtures of domestic sewage and other wastes that pass through a sewer system to a publicly owned treatment works (POTW) for treatment are excluded from the definition of solid waste. Generators are encouraged to contact their local POTW for prior approval.
Wastewater Treatment Unit Exemption	Any hazardous waste tank system used to store or treat the wastewater that is managed at an onsite wastewater treatment facility with a National Pollutant Discharge Elimination System (NPDES) permit pursuant to the Clean Water Act (CWA) or that discharges to a POTW is exempt from the RCRA regulations.
De Minimis Exclusion	Small quantities of some solvents and other chemicals are exempt from the regulations when they are mixed with wastewater in a wastewater treatment system discharging according to the CWA.

THE LIFE CYCLE OF A TYPICAL FURNITURE MANUFACTURING AND REFINISHING WASTE

1 You own a small furniture refinishing shop. You’ve just cleaned your process equipment. Now you have spent solvents that must be managed and it is time to investigate and follow the RCRA regulations.

This example details a typical waste life cycle at a furniture manufacturing and refinishing facility. This life cycle presents the hazardous waste management requirements for SQG from generation to shipment off site.

Other waste life cycles could be different depending on the waste, whether onsite treatment will occur, the type of waste management units used, and the facility generator status.

1 IDENTIFY WASTE

By running tests or using your knowledge of the waste, identify whether your solvent waste is hazardous. Based on these analyses, determine the appropriate waste code for your solvents; in this case, for example, it could be D001, D019, D035, D037, D039, D040, and F001-F005.

13 SEND WASTE OFF SITE FOR TREATMENT, STORAGE, OR DISPOSAL

Using a registered hazardous waste transporter, send the waste to a RCRA hazardous waste TSDF accompanied by the appropriate manifest. You can choose from any permitted or interim status TSDF. Optional destinations for solvents include a hazardous waste incinerator that will landfill the incinerator ash, a hazardous waste fuel blender who will blend the solvents with other wastes and then burn them for energy recovery in a boiler or industrial furnace, or a facility that will recycle the solvents.

12 PREPARE APPROPRIATE NOTIFICATION AND CERTIFICATION

Ensure that all hazardous waste sent off site for treatment, storage, and disposal is accompanied by appropriate notifications and certifications. Generally, these only apply to initial shipments and to changes in management activities.

2

COUNT WASTE

Next, determine how much solvent waste you have produced in a calendar month. Do not count solvent placed directly into a solvent recovery still. Count the solvent still bottoms when they are removed from the still, however.

3

DETERMINE GENERATOR STATUS

Based on waste counting, determine your generator status. In this case, you have produced less than 1,000 kg (2,200 lbs) but greater than 100 kg (220 lbs), which means you are an SQG in this calendar month period. If the amount of waste you generate fluctuates from month to month, you may wish to satisfy the more stringent requirements each month to simplify compliance.

4

OBTAIN EPA IDENTIFICATION NUMBER

To identify your business as a hazardous waste generator, obtain an EPA identification number by submitting Form 8700-12 (Notification of Regulated Waste Activity), which is obtained from your state hazardous waste agency. Remember, your state requirements might be different.

5

PLACE WASTE IN ACCUMULATION UNIT

When the waste is generated, place it in an accumulation unit. Mark accumulation tanks and containers with the date the waste was placed in the unit and mark the unit "Hazardous Waste." Ensure that the containers are not rusty or leaking, are stored in areas with adequate ventilation and drainage, and are kept closed except to add or remove waste.

6

IMPLEMENT SQG EMERGENCY PROCEDURES REQUIREMENTS

Check to be sure that emergency preparedness and prevention requirements are met. These include identifying an emergency response coordinator and notifying local emergency response authorities.

11

PREPARE HAZARDOUS WASTE MANIFEST

Send a manifest along with all hazardous waste sent off site to a TSDF, and keep your copy on site for 3 years. The manifest contains a certification stating that you have a program in place to reduce the volume and toxicity of waste generated to the degree economically practicable, and that you have selected a treatment, storage, and disposal method currently available that minimizes current and future threats from the waste.

10

FOLLOW U.S. DEPARTMENT OF TRANSPORTATION (DOT) PACKAGING STANDARDS

Before shipping waste off site for treatment, storage or disposal, package, label, and mark waste containers in accordance with all applicable DOT requirements. For more information, call the Hazardous Materials Information Hotline (HMIH) at 800 467-4922.

9

CONTRACT WITH HAZARDOUS WASTE TRANSPORTER

To send waste off site to a TSDF, contract with a registered hazardous waste transporter. To locate a reliable transporter, contact a colleague or your appropriate state contact to obtain a reference.

8

IMPLEMENT PERSONNEL TRAINING

Be sure that your personnel are familiar with hazardous waste handling and emergency procedures.

7

PREPARE CONTINGENCY PLAN

Ensure that a contingency plan is prepared in accordance with standards to minimize hazards from fires, explosions, and unplanned releases. Keep a copy of the contingency plan on site.

REQUIREMENTS FOR REGULATED FURNITURE MANUFACTURERS AND REFINISHERS

The following table presents an overview of the federal RCRA regulatory requirements for furniture manufacturers and refinishers that are either LQGs, SQGs, or CESQGs. As noted, your state might have different or more stringent requirements.

RCRA REGULATORY REQUIREMENTS

REGULATORY REQUIREMENT	LQGS	SQGS	CESQGS	IMPLEMENTATION EXPLANATION
EPA Identification Number	✓	✓		<ul style="list-style-type: none"> Obtain an EPA identification number for each facility, by site, within your company. EPA and states use this 12-character identification number to track hazardous waste activities. Obtain an EPA identification number by submitting form 8700-12 (Notification of Regulated Waste Activity), which is provided by your state hazardous waste agency. This is a one-time notification. Contact your state regarding the need for renomination if circumstances at your facility change.
Hazardous Waste Identification	✓	✓	✓	<ul style="list-style-type: none"> Identify whether you generate hazardous waste to determine if you are subject to the RCRA hazardous waste regulations. Test procedures are described in "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods, SW-846" or tests can be performed by a local laboratory.
Used Oil Standards	✓	✓	✓	<ul style="list-style-type: none"> If you generate used oil that will be recycled, you are subject to a set of management standards separate from the hazardous waste management standards. If the used oil is to be treated and disposed of, perform the hazardous waste identification step listed above.
Waste Counting	✓	✓	✓	<ul style="list-style-type: none"> Determine how much hazardous waste you generate to determine your generator status.
Accumulation Area	✓	✓		<ul style="list-style-type: none"> You can accumulate waste in a "satellite accumulation area" with minimal regulatory burden. This area must be at or near the point of generation and under the control of the operator of the process generating the waste. There is no time limit on accumulation in the satellite accumulation area for waste under 55 gallons. There is a 55-gallon accumulation limit in the satellite accumulation area. Excess waste beyond the 55-gallon limit must be moved from the satellite accumulation area within 3 days. You must accumulate the waste in containers. Waste containers must be marked with the words "Hazardous Waste" or other words that identify their contents. This waste is exempt from other accumulation provisions while in the satellite accumulation area.
Other Accumulation Areas (Time and Quantity Limits)	✓	✓	✓	<ul style="list-style-type: none"> If waste accumulation does not meet the requirements for satellite accumulation, it is subject to more stringent requirements. LQGs can accumulate waste on site for up to 90 days without a permit. SQGs can accumulate waste for 180 days, or 270 days if the SQG must transport the waste more than 200 miles to a destination facility. Begin counting accumulation time when waste is first placed in the accumulation unit. Waste must be put in an exempt unit, recycled, or sent off site within the proper time period stated above. If an LQG accumulates waste beyond the allotted time period, the facility is fully subject to the requirements of a hazardous waste storage facility unless granted an exemption. SQGs cannot accumulate more than 6,000 kg of hazardous waste at any time. CESQGs cannot accumulate more than 1,000 kg of hazardous waste, more than 1 kg of acutely hazardous waste, or 100 kg of spill residue from acutely hazardous waste at any time.
Storage Unit Requirements	✓	✓		<ul style="list-style-type: none"> Accumulate waste only in units that are in good condition, remain closed except when adding or removing waste, are inspected at least weekly, are compatible with the types of waste, and meet special standards for ignitable waste and incompatible waste. LQGs can use accumulation containers and tanks that have been assessed for integrity, have a secondary containment system, and are inspected each operating day. SQGs can use certain accumulation tanks as well. LQGs can use containment buildings as well. For all units, the date that the accumulation period begins must be clearly marked and visible on each container. All containers and tanks must be clearly marked or labeled with the words "Hazardous Waste" and accumulation units must be shut down and closed permanently in accordance with standards at the end of the unit life. LQGs and SQGs can treat their waste without a RCRA storage permit in accumulation units that meet standards.
Air Emissions	✓			<ul style="list-style-type: none"> LQGs must comply with organic air emissions requirements.
Preparedness and Prevention	✓	✓		<ul style="list-style-type: none"> LQGs and SQGs must comply with preparedness and prevention requirements, including the following: <ul style="list-style-type: none"> An adequate internal alarm or communications system. A device capable of summoning emergency personnel. Portable fire control equipment.

				<ul style="list-style-type: none"> - Adequate water pressure to operate fire control systems. - Adequate testing and maintenance of all emergency systems. - Access to communication or alarm systems during waste handling activities. - Adequate aisle space for emergency response. - An arrangement with local emergency response authorities.
Contingency Plan	✓	✓		<ul style="list-style-type: none"> • LQG facilities must prepare a facility contingency plan in accordance with regulations. • The contingency plan must be designed to minimize hazards from fires, explosions, or unplanned releases of hazardous waste or constituents. • A copy of the contingency plan must be kept on site and an additional copy must be submitted to all local emergency service providers. • LQGs and SQGs must have an emergency coordinator on site or on call at all times to respond to emergencies. • Emergency response information must be posted next to the telephone. • In the event of a fire, explosion, or release that could threaten human health outside the facility or when a spill has reached surface water, the emergency coordinator must notify the National Response Center at 800 424-8802.
Personnel Training	✓	✓		<ul style="list-style-type: none"> • LQGs must have a personnel training program in accordance with regulatory standards. <ul style="list-style-type: none"> - Training must instruct facility personnel about hazardous waste management procedures and emergency response. - Training must be completed within 6 months from the applicability of requirements. - The facility must undertake an annual review of initial training. • SQGs must ensure that all employees are thoroughly familiar with proper waste handling and emergency procedures relevant to their responsibilities.
DOT Packaging	✓	✓		<ul style="list-style-type: none"> • Before being transported, waste must be packaged, labeled, and marked in accordance with applicable DOT requirements. Call the DOT hazardous materials information center at 800 467-4922 for information.
Offsite Management of Waste	✓	✓	✓	<ul style="list-style-type: none"> • Hazardous waste sent off site for handling may only be sent to a hazardous waste TSDf or recycling facility unless otherwise exempt. • CESQGs: See onsite management of waste below.
Onsite Management of Waste			✓	<ul style="list-style-type: none"> • CESQGs may either treat waste on site, if it qualifies as one of the following types of facilities, or ensure delivery of waste to one of the following types of facilities: permitted RCRA TSDf; interim status TSDf; state authorized to handle hazardous waste; permitted, licensed, or registered by state to handle municipal solid waste according to standards; permitted, licensed, or registered by state to handle non-municipal waste; if managed after January 12, 1998, facility is permitted, licensed, or registered by state to handle non-hazardous waste in accordance with standards; facility beneficially uses or reuses, or legitimately recycles or reclaims its waste; facility treats its waste prior to beneficial use, reuse, or legitimate recycling or reclamation; or a universal waste handler in accordance with standards.
Manifest	✓	✓		<ul style="list-style-type: none"> • Hazardous waste sent off site must be accompanied by a manifest, a multipage form that documents the waste's progress through treatment, storage, and disposal. It can usually be obtained from your state agency. • The manifest must have enough copies to provide the generator, each transporter, and the destination facility with one copy for their records and a second copy to be returned to the generator after completion by the destination facility operator. • SQGs that have a contractual agreement with a waste reclaimer that specifies the types and frequencies of shipments do not need to manifest the wastes if they retain a copy of the agreement in their files.
Land Disposal Restrictions Notification	✓	✓		<ul style="list-style-type: none"> • Your waste must meet certain treatment standards under the LDR program. Waste must be treated to reduce the hazardous constituents to levels set by EPA or the waste must be treated using a specified technology. All waste sent off site for treatment, storage, and disposal must be accompanied by appropriate LDR program notifications and certifications. There are no required forms, but these papers must indicate whether or not wastes meet treatment standards or whether the waste is excluded or otherwise exempt from the definition of hazardous or solid waste.
Hazardous Waste Minimization	✓	✓		<ul style="list-style-type: none"> • To encourage generators to produce less hazardous waste, LQGs are required to have a program in place to reduce the volume and toxicity of waste generated to the degree economically practicable, and must select a currently available treatment, storage, or disposal method that minimizes present and future threats. • LQGs and SQGs must sign a certification of hazardous waste minimization on the manifest. • SQGs must make a good faith effort to minimize waste generation and to select the best available waste management method that they can afford.
Biennial Report	✓			<ul style="list-style-type: none"> • LQGs must submit biennial waste generation and management activity reports by March 1 of every even-numbered year. EPA, other agencies, and the public use this information to track trends in hazardous waste management.
Recordkeeping	✓	✓		<ul style="list-style-type: none"> • LQGs must maintain personnel training records until the facility closes. • LQGs must keep copies of each biennial report for 3 years. • LQGs and SQGs must keep a copy of each manifest for 3 years. • LQGs and SQGs must keep records of test results, waste analyses, and other hazardous waste determinations for 3 years.

REDUCE OR MINIMIZE THE HAZARDOUS WASTES YOU GENERATE

The following examples show hazardous wastes typically generated by the furniture manufacturing and refinishing industry and provide suggestions for how to recycle, treat, or dispose of them according to federal regulations.

Recycling and pollution prevention measures can significantly reduce your regulatory burden and may save your facility considerable money. This section presents information on hazardous wastes typically generated by various furniture manufacturing and refinishing processes and provides suggestions for how to recycle them or implement pollution prevention measures.

Only the federal hazardous waste codes are provided here. Your state might have different codes for some waste streams. You should check with your state hazardous waste authority for additional waste codes and requirements.

PROCESS	Construction and Surface Preparation
Wastes Generated	Acetone, alcohols, methyl ethyl ketone, methyl isobutyl ketone, methanol, methylene chloride, mineral spirits, oxalic acid, petroleum distillates, toluene, 1,1,1-trichloroethane, volatile organic compounds (VOCs), and xylene.
Possible RCRA Waste Codes	D001 (solvent wastes, petroleum distillates, mineral spirits, acetone, and alcohols), D002 (oxalic acid), D035 (methyl ethyl ketone), D040 (1,1,1-trichloroethane), F001 or F002 (1,1,1-trichloroethane), F003 (acetone, xylene, methyl isobutyl ketone, and methanol), F005 (toluene and methyl ethyl ketone), U002 (unused acetone), U159 (unused methyl ethyl ketone), U161 (unused methyl isobutyl ketone), U239 (unused xylene), U220 (unused toluene), and U080 (unused methylene chloride).
Potential Recycling, Treatment, and Disposal Methods	<ul style="list-style-type: none"> ■ Reclaim solvents in an onsite distillation unit for reuse. ■ Collect hazardous wastes for shipment off site to a hazardous waste TSDF using a registered hazardous waste transporter.
Potential Pollution Prevention Methods	<ul style="list-style-type: none"> ■ Store waste solvents separately to facilitate recycling. ■ Replace toxic solvents with less hazardous products. ■ Cover solvent containers to prevent product volatilization. ■ Use a first in, first out policy in storage areas and computerize inventory control to prevent materials from expiring.

Wastes

PROCESS

Staining and Painting

Wastes Generated

Acetone, alcohols, methanol, methylene chloride, methyl ethyl ketone, petroleum distillates, pigments, toluene, and VOCs.

Possible RCRA Waste Codes

D001 (solvent wastes, petroleum distillates, and acetone), D007 (pigments), D008 (pigments), D035 (methyl ethyl ketone), F003 (acetone, methyl isobutyl ketone, and methanol), F005 (toluene and methyl ethyl ketone), U002 (unused acetone), U159 (unused methyl ethyl ketone), U161 (unused methyl isobutyl ketone), and U220 (unused toluene).

Potential Recycling, Treatment, and Disposal Methods

- Reclaim solvents in an onsite distillation unit for reuse.
- Collect hazardous wastes for shipment off site to a hazardous waste TSDF using a registered hazardous waste transporter.

Potential Pollution Prevention Methods

- Store waste solvents separately to facilitate recycling.
- Install biofiltration systems to filter exhaust from spray areas.
- Replace coatings needing solvents with less-hazardous products, such as water-borne coatings or waxes.
- Use solvent-based coatings with high levels of solids to reduce air emissions.
- Substitute high-VOC coatings with those that harden when exposed to ultraviolet light.
- Install high-volume, low-pressure, or electrostatic sprayers to decrease overspray.
- Replace spray coating processes with dip processes.
- Cover solvent containers to prevent product volatilization.
- Use washable metal filters in spray booths; reclaim spent washing solvent.
- Collect overspray in a trough for redistillation.

PROCESS

Finishing

Wastes Generated

Alcohols, petroleum distillates, pigments, toluene, toluene diisocyanate, VOCs, wastewater, and xylene.

Possible RCRA Waste Codes

D001 (alcohols, petroleum distillates, xylene, and toluene diisocyanate), D003 (toluene diisocyanate), D007 (pigments), D008 (pigments), F003 (xylene), F005 (toluene), U223 (unused toluene diisocyanate), U239 (unused xylene), and U220 (unused toluene).

Potential Recycling, Treatment, and Disposal Methods

- Reclaim solvents in an onsite distillation unit for reuse.
- Treat wastewaters in a wastewater treatment unit regulated by the Clean Water Act.
- Collect hazardous wastes for shipment off site to a hazardous waste TSDF using a registered hazardous waste transporter.

Reduce Wastes

Potential Pollution Prevention Methods

- Store waste solvents separately to facilitate recycling.
- Install biofiltration systems to filter exhaust from spray areas.
- Prepare smaller test batches of solvents and coatings.
- Replace finishes needing solvents with less-hazardous products, such as water-borne coatings or waxes.
- Substitute high-VOC coatings with those that harden when exposed to ultraviolet light.
- Provide training for spray gun operators in overspray reduction techniques.
- Install high-volume, low-pressure, or electrostatic sprayers to decrease overspray.
- Cover solvent containers to prevent product volatilization.

PROCESS

Brush and Spray Gun Cleaning

Wastes Generated

Acetone, alcohols, isopropanol, methanol, methylene chloride, mineral spirits, petroleum distillates, toluene, and VOCs.

Possible RCRA Waste Codes

D001 (solvent wastes, petroleum distillates, isopropanol, mineral spirits, acetone, and alcohols), F003 (acetone), F005 (toluene), U002 (unused acetone), U220 (unused toluene), and U080 (unused methylene chloride).

Potential Recycling, Treatment, and Disposal Methods

- Reclaim solvents in an onsite distillation unit for reuse.
- Collect hazardous wastes for shipment off site to a hazardous waste TSDF using a registered hazardous waste transporter.

Potential Pollution Prevention Methods

- Store waste solvents separately to facilitate recycling.
- Spray products in large batches to reduce the number of times the gun must be cleaned.
- Immerse only the front end of the spray gun in the solvent to minimize spills.
- Clean spray guns into a container, rather than into the air.
- Reuse cleanup solvent until spent, then reclaim for further use.
- Cover solvent containers prevent product volatilization.
- Use a first in, first out policy in storage areas and computerize inventory control to prevent materials from expiring.

OTHER ENVIRONMENTAL LAWS AFFECTING THE FURNITURE MANUFACTURING/REFINISHING INDUSTRY

THE CLEAN WATER ACT

The Water Pollution Control Act, commonly known as the Clean Water Act (CWA), is the federal program designed to restore and maintain the integrity of the nation's surface waters. CWA controls direct discharges to surface waters (e.g., through a pipe) from industrial processes or stormwater systems associated with an industrial activity. It also regulates indirect discharges, or discharges to publicly owned treatment works (POTWs), through a public sewer system, by requiring industrial facilities to pretreat their waste before discharging to a public sewer. Industrial pollutants from the furniture manufacturing and refinishing industry that might be regulated by CWA include solvents.

CWA Resources:

- 40 CFR Parts 100 to 129 and 400 to 503
- Internet access: <www.epa.gov/OW/>
- EPA Office of Water: 202 260-5700
- Your state water authority, regional EPA office, and local POTW

Oil Pollution Prevention Under the CWA

The Oil Pollution Prevention regulations were promulgated under the authority of the CWA. These regulations establish requirements for facilities to prevent oil spills from reaching the navigable waters of the United States or adjoining shorelines. The regulations apply to non-transportation-related facilities with a specific aboveground or underground oil storage capacity that, because of their location, can reasonably be expected to discharge oil into the navigable waters of the United States.

Oil Pollution Prevention Regulation Resources:

- 40 CFR Part 112
- Internet access: <www.epa.gov/oilspill>

THE CLEAN AIR ACT

The Clean Air Act (CAA) regulates air pollution. It includes national emission standards for new stationary sources within particular industrial categories. It also includes national emission standards, which are designed to control the emissions of particular hazardous air pollutants (HAPs). Furniture manufacturing and refinishing facilities generate some HAPs such as VOCs in organic solvents. The CAA also seeks to prevent the accidental release of certain hazardous chemicals and to minimize the consequences of such releases.

CAA Resources:

- 40 CFR Parts 50 to 99
- Control Technology Center, Office of Air Quality, Planning and Standards, EPA, general information: 919 541-0800, publications: 919 541-2777
- Internet access: <www.epa.gov/ttn/catc>

COMPREHENSIVE ENVIRONMENTAL RESPONSE, COMPENSATION, AND LIABILITY ACT (CERCLA OR SUPERFUND)

The Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980, commonly known as Superfund, authorizes EPA to respond to releases, or threatened releases, of hazardous substances that might endanger public health, welfare, or the environment, that might come from any source. Superfund also grants EPA the authority to force parties responsible for environmental contamination to clean it up or to reimburse response costs incurred by EPA. The most important part of this act applicable to furniture manufacturers and refinishers is the

CFR GUIDE TO HAZARDOUS WASTE REGULATIONS

To review the RCRA regulations referred to in this document, consult the following citations in 40 CFR:

Part 260—Hazardous waste management system: General.

Part 261—Identification and listing of hazardous waste.

Part 262—Standards applicable to generators of hazardous waste.

Part 263—Standards applicable to transporters of hazardous waste.

Part 264—Standards for owners and operators of TSDFs.

Part 265—Interim status standards for owners and operators of TSDFs.

Part 266—Standards for the management of specific hazardous wastes and specific types of hazardous waste management facilities.

continued

Environmental Laws

CFR GUIDE continued

Part 268—Land disposal restrictions.

Part 270—EPA administered permit programs: The Hazardous Waste Permit Program.

Part 271—Requirements for authorization of state hazardous waste programs.

Part 272—Approved state hazardous waste management programs.

Part 273—Standards for universal waste management.

Part 279—Standards for the management of used oil.

FOR MORE INFORMATION

For additional information on any of these laws, contact the RCRA, Superfund & EPCRA at 800 424-9346 or 703 412-9810 in the Washington, DC, area. TDD (hearing impaired): 800 553-7672 or 703 412-3323 in the Washington, DC, area.

hazardous substance release reporting requirement. The person in charge at your business must report to the National Response Center (phone: 800 424-8802) any release of a hazardous substance that exceeds a designated “reportable quantity” for that substance within a 24-hour period.

Superfund Resource:

- Internet access: <www.epa.gov/superfund>

THE EMERGENCY PLANNING AND COMMUNITY RIGHT-TO-KNOW ACT

The Superfund Amendments and Reauthorization Act (SARA) of 1986 created the Emergency Planning and Community Right-to-Know Act (EPCRA). This law was designed to improve community access to information about potential chemical hazards and to facilitate the development of chemical emergency response plans by state and local governments. The EPCRA regulations establish several types of reporting obligations for facilities that store or manage specified chemicals such as toluene and 2, 4-diisocyanate in the furniture manufacturing and refinishing industry. Also, many of the chemicals used by furniture manufacturers and refinishers may be considered hazardous chemicals as defined by the Occupational Safety and Health Act (OSHA). Contact your local OSHA office if you have questions about whether the chemicals used in your furniture manufacturing and refinishing business are considered hazardous under OSHA. In addition, furniture manufacturers and refinishers that use methyl ethyl ketone, methyl isobutyl ketone, toluene diisocyanate, or xylene must comply with the Toxic Chemical Release Inventory.

EPCRA Resources:

- 40 CFR Parts 350 to 372
- The State Emergency Response Commission (contact available from RCRA, Superfund & EPCRA)
- Internet access: <www.epa.gov/opptintr/tri/index.htm> and <www.epa.gov/swercepp/>

SAFE DRINKING WATER ACT

The Safe Drinking Water Act (SDWA) mandates that EPA establish regulations to protect human health from contaminants present in drinking water. Under the authority of SDWA, EPA developed national drinking water standards and created a joint federal-state system to ensure compliance with these standards. EPA also regulates underground injection of liquid wastes under the SDWA to protect underground sources of drinking water.

SDWA Resources:

- 40 CFR Parts 141 to 148
- SDWA Hotline: 800 426-4791
- Internet access: <www.epa.gov/ogwdw>

TOXIC SUBSTANCES CONTROL ACT

The Toxic Substances Control Act (TSCA) allows EPA to collect data on chemicals to evaluate, assess, mitigate, and control risks that might be posed by their manufacture, processing, and use. Furniture manufacturing and refinishing facilities may be affected by some of the TSCA requirements.

TSCA Resources:

- 40 CFR Parts 702 to 799
- TSCA Hotline: 202 554-1404
- Internet access: <www.epa.gov/internet/oppts/>

CONTACTS AND RESOURCES

Contacts

HOTLINES AND INFORMATION CENTERS

RCRA Superfund & EPCRA Call Center

U.S. Environmental Protection Agency
Phone: 800 424-9346
or TDD 800 553-7672
In the Washington, DC, area:
703 412-9810, or TDD 703 412-3323
Home page: <www.epa.gov/epaoswer/hotline>

Answers questions on matters related to RCRA solid waste, hazardous waste, and underground storage tanks, EPCRA, and CERCLA.

OSWER Docket

U.S. Environmental Protection Agency
EPA West
1200 Pennsylvania Avenue, NW.
Room B107
(5305T)
Washington, DC 20460
Phone: 202 566-0270
Fax: 202 566-0272
E-mail: rcra-docket@epamail.epa.gov

Holds and provides public access to all regulatory materials on RCRA and distributes technical and non-technical information on RCRA issues.

EPA Small Business Ombudsman Clearinghouse/Hotline

Ariel Rios Building
1200 Pennsylvania Avenue, NW.
(1808T)
Washington, DC 20460
Phone: 800 368-5888
Fax: 202 566-2848
Home page: <www.epa.gov/sbo>

Helps private citizens, small businesses, and

smaller communities with questions on all program aspects within EPA.

U.S. Environmental Protection Agency

Headquarters Library
1200 Pennsylvania Avenue, NW.
(3404T)
Washington, DC 20460
Phone: 202 566-0556
Fax: 202 260-0562
E-mail: library-HQ@epa.gov
Home page: <www.epa.gov/natlibra/hqirc>

Maintains environmental reference materials for EPA staff and the general public, including books, journals, abstracts, newsletters, and audiovisual materials generated by government agencies and the private sector. Also provides access to online computer service bulletin boards and CD-ROM systems.

Pollution Prevention Information Clearinghouse (PPIC)

U. S. Environmental Protection Agency
Pollution Prevention Clearinghouse (PPIC)
1200 Pennsylvania Avenue, NW.
(7407-T)
Washington, DC 20460
Phone: 202 566-0799
Fax: 202 566-0794
E-mail: ppic@epa.gov

U.S. Department of Transportation

Hazardous Materials Information Center
Phone: 800 467-4922

Provides information about DOT's hazardous materials regulations.

U.S. Government Printing Office

Superintendent of Documents
P.O. Box 371954
Pittsburgh, PA 15250-7954
Phone: 202 512-1800
Fax: 202 512-2250

Prints and distributes the *Code of Federal Regulations*. Title 40, Parts 260 to 299, contains most of the RCRA requirements.

National Response Center (NRC)

Phone: 800 424-8802

In the event of a fire, explosion, or other release of hazardous waste that could threaten human health outside the facility, call the NRC to report the emergency. The NRC will evaluate the situation and help you make appropriate emergency decisions.

ADDITIONAL INTERNET ADDRESSES

EPA Home Page
<www.epa.gov>

EPA RCRA Hazardous Waste Resources
<www.epa.gov/osw/topics.htm>

Code of Federal Regulations
<www.epa.gov/docs/epacfr40/>

Envirosense
<www.epa.gov/envirosense/index.html>
(contains technical, policy, and general information on pollution prevention topics)

RCRAonline
<www.epa.gov/rcraonline>



United States
Environmental Protection Agency
1200 Pennsylvania Avenue, NW.
(5305W)
Washington, DC 20460

Official Business
Penalty for Private Use \$300