

Iowa School Hazardous Waste & Medication Management Guidance



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State of Iowa
Department of Education
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OVERVIEW

“...No one was sure what chemicals were involved in the fire [in the facilities maintenance warehouse at the school]. Pallets of bleach, ammonia and sulfuric acid based drain cleaner had been stored adjacent to each other, and rupturing of the chemicals during the fire created an acid vapor cloud as well as chlorine and phosgene gases. The total cost of this event was about half a million dollars.”

- From a case study of a suburban public high school in New England



Are there Dangerous Chemicals in Your School?

The sources of dangerous chemicals in schools are not always obvious. This guidance applies to any school that purchases, uses, stores, or disposes of chemicals or products containing dangerous materials. Some of the most common dangerous chemical products in schools include:

- Laboratory chemicals (e.g., acids, bases, solvents, metals, salts)
- Industrial arts or “shop” classes (e.g., inks, degreasers)
- Art supplies (e.g., paints, photographic chemicals)
- Pesticides, fertilizers, and de-icers
- Maintenance supplies and equipment (e.g., drain cleaners, floor stripping products, paints, oils, boiler cleaners, fuels, mercury switches and gauges)
- Health care equipment (e.g., mercury thermometers).



labeled, and secured, as well as who should have access to them. Photo Credit: King County, Washington

What Can Schools Do to Prevent Spills and Costly Incidents of Dangerous Chemicals?

- Establish a leadership team consisting of qualified and experienced individuals to oversee chemical management activities and confirm the availability of budget and resources.
- Implement pollution prevention and green chemistry (safer alternatives) principles, whenever possible, to minimize the use of hazardous chemicals at schools.
- Establish a chemical management policy and chemical hygiene plan.
- Conduct periodic chemical inventories to identify hazards.
- Establish an environmentally preferable purchasing policy.
- Implement an appropriate chemical storage and handling policy.
- Establish a training program for hazardous chemicals management and safety, which also includes confiscated or abandoned pharmaceuticals.
- Develop a hazard communication plan to foster awareness among school personnel and students about the range of chemicals and products used in schools.
- Create an emergency response and spill clean-up in accordance with federal, state, and local regulations.

Who Should Read This Guidance?

This document is designed primarily for school administrators (principals and other policymakers), but may also be of value for teachers, maintenance personnel, nurses, superintendents, school business officials, insurance industry risk managers, and parents.

To avoid a situation like the example shown above, schools should establish a chemical storage and handling policy that addresses how chemicals should be properly stored,



There are five key reasons why school administrators should be concerned about chemical (and pharmaceutical) management in their schools:

1. Improper chemical management poses health and safety risks to students and school employees. Health, learning, and behavior risks to students are of particular concern, as children are more vulnerable than adults to chemical exposures because their bodily systems are still developing; they eat more, drink more, and breathe more in proportion to their body size; and their behavior can expose them more to chemicals than adults.
2. The expenses incurred from disposal, spills, and other incidents, including potential liabilities/lawsuits, can be considerable. The costs of responding to chemical incidents can reach hundreds of thousands of dollars or more at a single school.² In addition to response costs, improper chemical waste management can result in fines and increased insurance premiums.
3. It only takes one chemical incident, such as a spill, explosion, or chemical exposure, to break the trust with the community. Reported school incidents can lead to increased parental and community concern, negative publicity, and embarrassment to the school and school district.
4. Improper chemical management may result in school closures that result in a loss of valuable education time.
5. Improper chemical management can lead to unintended chemical discharges and spills, which inflict damage upon the environment where students, teachers, staff, and parents live and work. Improper chemical discharges into sanitary sewer lines or on-site waste treatment systems (including septic tanks) can have adverse effects on rivers, streams, and groundwater. Chemical releases and spills can also contribute to air pollution. Spills to the ground can ultimately result in long-term harm to the land and considerable remediation costs.



A safe school environment that prevents harm to students and protects school employees from dangerous chemicals must be promoted. Responsible chemical management is likely to lead to improved learning in the classroom and improved overall health of the environment and the community.

School business officials and all school personnel provide a “whole building” approach to safety that includes comprehensive waste management practices to reduce contaminants in schools, safe waste disposal, and protection of health for students, staff and the school community. When items such as prescriptions are left at school, they are considered ‘abandoned’ and become the responsibility of the school to dispose of properly and pay for such disposal. Further guidance is located under the nurse section of this document.

This document focuses on broad policy considerations that school administrators consider implementing to properly manage and use all dangerous chemicals. It is **intended to provide useful information regarding managing hazardous wastes generated in schools. It does not substitute for the regulations and is only guidance in nature. It is the responsibility of the school to know and follow all federal and state regulations.** Parents and others in the community interested in school health and safety policies also may use this document to determine whether their children’s schools are effectively minimizing potential exposure to dangerous chemicals and products.

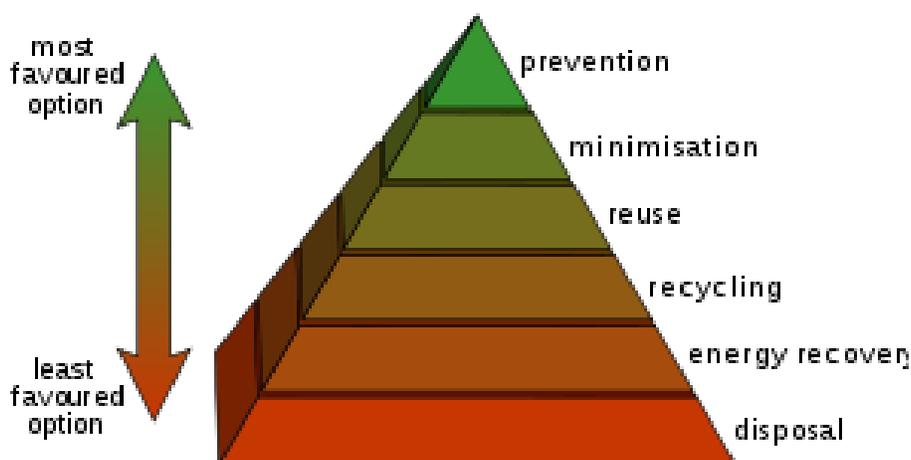
Overview of a School Chemical Management Program

The purpose of a chemical management program -

To avoid the problems outlined above, a school or a school district can establish a School Chemical Management Program, which identifies, manages, and prevents hazards through all stages of chemical purchasing, storage, use, and disposal. This program can also help to reduce the quantity and toxicity of chemicals used in a school’s curriculum and in cleaning and maintenance of the school’s physical plant, and to prevent the buildup of a surplus chemical inventory.

recycled and used again. In addition, some companies have taken waste minimization actions such as using fewer solvents to do the same job, using solvents that are less toxic, or switching to a detergent solution.

- **Safely store hazardous products and containers.** You can avoid creating more hazardous waste by preventing spills or leaks. Store hazardous product and waste containers in secure areas, and inspect them frequently for leaks. When leaks or spills occur, materials used to clean them also become hazardous waste.



School Resources:

- [Environmental Protection Agency. \(2017\): Chemical Management Resource Guide for School Administrators](#)
- [Environmental Protection Agency: Waste Reduction Resources for Healthy Schools](#)
- [Iowa Department of Education: Environmental Protection and Indoor Air Quality](#)
- [Iowa Department of Education: School Facilities Resources](#)

GENERAL WASTE MANAGEMENT

Q. Who regulates the disposal of hazardous waste in the state of Iowa?

A. The federal Resource Conservation and Recovery Act (RCRA) requires generators of hazardous waste to be responsible for storage and disposal of waste from the time that it is generated to the time that it is disposed. Currently, Alaska and Iowa are the only non-RCRA-authorized states, which means the EPA region 7 regulates the hazardous waste program in the state of Iowa.

EPA guidance document: [Managing Your Hazardous Waste: A Guide for Small Businesses](#)

Q. What are some best management practices for the storage of chemicals in school?

- A. There are several best practices for storing hazardous waste that will help ensure the safety and compliance of your school's hazardous waste management program.
- **Properly seal items.** Prior to storing any hazardous waste items in a bin, place them individually in a sealed plastic bag to keep items from commingling and causing a reaction. Double bag any containers that are leaking and add absorbents to prevent issues.
 - **Use separate bins.** Incompatible hazardous waste items must remain separate, so it's recommended to use separate accumulation bins that are designated for each of the following categories: aerosols and flammables, toxics, corrosive acidic, corrosive alkaline (basic), oxidizer, and universal waste.
 - **Label containers properly.** Once the initial item is placed within a bin, label the container as "Hazardous Waste" and also include the accumulation start date. Should an inspector ever visit your school, proper labeling is one of the first things the inspector will examine and evaluate. Regulations often require weekly inspections of hazardous waste accumulation containers and storage areas, but it depends on your school's generator size. (see below)
 - **Scout a safe storage area.** Store accumulation bins in a dedicated, permanent, clean, and neatly organized hazardous waste area. The ideal location is away from traffic areas, electrical panels, perishable/consumable product storage, and dock doors. Also keep containment bags, spill kits, and absorbent and other relevant supplies

in the secure storage area. The waste bins should be clearly visible at all times, and emergency numbers, training materials, and posters

GENERAL OFFICE WASTE

Q. What general office waste may need to be handled as hazardous waste?

A. While office items are safe to use and help us do our work efficiently, the environmental aspect comes in when they are disposed. Properly disposing of such items will help prevent toxic metals from leaching into our groundwater and recycling will save precious metals from being mined as they will be able to be used in new products.

- E-waste including computers, fax machines, copiers.
- Batteries
- Cell phones
- Light bulbs, LED, CFL etc.

Some of these items can be brought to your nearest [Regional Collection Center](#) for Household Hazardous Waste (HHW). Many will accept these items for collection and proper disposal from small business that generate very small quantities of hazardous waste. (Refer to generator status above). E-waste recyclers may charge a fee to recycle your e-waste as they have to properly manage any hazardous wastes contained in the equipment. But recycling e-waste is often more economical than handling it as hazardous waste.

WASTES FROM VEHICLE MAINTENANCE

Whether you are tuning an engine, replacing a battery, changing the oil, or doing body work, vehicle maintenance operations probably generate hazardous wastes. Any vehicle maintenance facility that generates waste is potentially subject to RCRA hazardous waste requirements. You must conduct tests required by the regulations or use your knowledge of and familiarity with the wastes you generate to determine whether it is hazardous waste (as opposed to other types of waste).

How wastes can be generated	Typical wastes	Possible waste codes
Degreasing, rust removal, paint preparation, spray booth, spray guns, brush cleaning, paint removal, tank cleanout, installing lead-acid batteries, oil and fluid replacement	Acids/bases, solvents, ignitable wastes, toxic wastes, paint wastes, batteries, used oil, unused cleaning chemicals	D001, D002, D006, D007, D008, D035, F001-F005, U002, U080, U134, U154, U159, U161, U220, U228, U239

Managing Used Oil

EPA’s used oil management standards are a set of “good housekeeping” requirements that encourage used oil handlers to recycle used oil instead of disposing of it. Used oil can be collected, refined and recycled, and used again -for the same job or a completely different task.

Used oil is defined as “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.”

Although different used oil handlers have specific requirements, the following requirements are common to all types of handlers:

Storage

- ✓ Label all containers and tanks as Used Oil.
- ✓ Keep containers and tanks in good condition. Do not 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 also can be stored in units that are permitted to store regulated hazardous waste.

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. Keep sorbent materials available.

- ✓ If a leak or spill occurs, stop the oil from flowing at the source. If a leak can't be stopped, put the oil in another holding container or tank.
- ✓ Contain spilled oil using sorbent berms or spreading sorbent over the oil and surrounding area.
- ✓ Clean up the used oil and recycle it as you would have before it was spilled. If recycling is not possible, you must first make sure the used oil is not a hazardous waste and dispose of it appropriately. All used cleanup materials, including rags and sorbent booms, that contain used oil, must also be handled according to the used oil management standards.
- ✓ Remove, repair, or replace the defective tank or container immediately.

Used oil requirements are detailed in 40 CFR Part 279.

For more information, see [EPA's guidance](#) for Vehicle maintenance shops.

In 2013, under the Wipes Rule, solvent-contaminated wipes must be managed according to the specific conditions in 40 CFR sections 261.4(a)(26) and 261.4(b)(18), which includes a condition that generators must accumulate reusable or disposable wipes for no more than 180 days prior to sending the wipes for cleaning or disposal.



Solvent-contaminated wipes must be managed according to certain conditions, including record keeping, closed containers, labeling, an accumulation time limit, and no free liquids at the point of being sent for cleaning or disposal. These conditions are listed in 40 CFR section 261.4(a)(26) and 40 CFR section 261.4(b)(18).

Schools can handle these under RCRA or the solvent wipe rule. Disposal of these are dependent on the rule that the school chooses to follow. Schools may contact the DNR regarding this requirement if there are additional questions ([EPA, 2021](#), [DNR, 2021](#))

WASTES FROM SCIENCE CLASSES

Most of the waste chemicals resulting from science laboratory experiments are considered hazardous, so the generation, storage, and disposal of hazardous wastes must be given special consideration after lab experiments are completed. Besides chemicals, science classes may have animal tissues, fluids, carcasses, needles, lancets, scalpels, razor blades, and other regulated infectious waste.

Science teachers should work directly with the School Resource Officer, who will be able to take proper steps to ensure the lawful transportation and disposal of these items.



Here are some things to consider:

Purchasing

- Does my school have a purchasing policy to evaluate chemicals before they come into the school?
- Does one person or a department do chemical purchasing?
- Are chemicals purchased for expected use within the calendar or fiscal year?
- Does my school have a 'green' or 'microscale' chemistry curriculum?
- Have toxic chemicals been replaced with less toxic alternatives?

Storage

- Does the school have a policy or set of procedures for storing chemicals (e.g., a Chemical Hygiene Plan)?
- Is there a staff member assigned to manage every chemical storage area?
- Are stored chemicals kept locked?
- Are chemicals accessible only to qualified handlers?
- Do all chemicals have up-to-date Material Safety Data Sheets (MSDS) / Safety Data Sheets (SDS)?
- Are all MSDSs / SDSs kept together in a common location?
- Are all chemicals labeled, including name, purchase/expiration dates, and storage information?
- Are chemicals stored according to type and group (not alphabetically)?

Inventory

- Is there a policy or set of procedures for identifying out-of-date chemicals?
- Is there a comprehensive list of chemicals stored on-site for all departments?
- Are incoming chemicals added to a comprehensive list?

WASTE FROM THE NURSE'S OFFICE

Medication administration in the school setting is a component of nursing practice. An **essential** element of medication administration includes;

- ✚ practicing minimization of the amount of medications at a school,
- ✚ safe return of medications to their owners to protect student's health and the school environment at the end of the school year,
- ✚ And safe disposal of abandoned or expired medications.



Schools take temporary, incidental possession of medications from the parent/guardian in order for medication to be administered to their child, or to be available for their child to self-administer at school. As such, **every attempt must be made to return unused and/or expired medication to the parent/guardian.** This may occur if the provider discontinues the

medication order, changes the dose, or at the end of the school year if there is any unused medication. Schools should inform the parent/guardian of their responsibility to pick up unused medication, ideally in writing. Having procedures for documenting disposal activities may also help ensure the safe and lawful management of leftover medicines

Waste minimization is the Key to Waste Management!

The disposal of controlled medication left in the school nurse office is problematic for school nurses. Medications are left for a variety of reasons: students transfer out of the district, state, or country; parents and guardians lack transportation to pick up their child's medication; and some families simply forget. The medications of concern are controlled substances, primarily Schedule II medications including Adderall, Concerta, and methylphenidate.

- Controlled Substances under U.S. Drug Enforcement Administration (DEA) regulations, it is illegal to transport controlled substances or give them to anyone other than a police officer or a person who is under law enforcement supervision. School Nurses who are in possession of leftover and unclaimed medications should seek assistance with the School Resource Officer, who will be able to take proper steps to ensure the lawful transportation and disposal of the substances. The [DEA website](#) provides a list of controlled substances. Communicate with parents the importance of maintaining only the amount of medication needed for the prescribed time, the duration of symptoms for over the counter medications, or until the next prescription refill.

What items can be considered hazardous waste from a nurses' office?

- **Examples of Controlled Waste** - Methylphenidate Hydrochloride, Dextroamphetamine-Amphetamine, narcotic pain medications, and other controlled substances.
- **Examples of Pharmaceutical Hazardous Waste** - Confiscated nicotine juice from vape products, e-cigarettes, vaping pens, full expired or degraded epinephrine, some inhaler canisters, or other pharmaceutical wastes. You can usually tell if an epinephrine auto injector is a P-list waste (and if it must be disposed of as a pharmaceutical hazardous waste) or not by looking at the manufacturer's label: if epinephrine hydrochloride, sodium chloride, or sodium metabisulfite are listed, then it is usually not a P-list waste.
- **Examples of Infectious Waste** - Tissues, fluids, needles, lancets, scalpels, razor blades, and other regulated infectious waste.

No medications are to be flushed or poured down a toilet or sink.

E CIGARETTES

Iowa law requires schools to confiscate and properly dispose of electronic cigarette products. Electronic cigarettes contain liquid nicotine, synthetic nicotine or nicotine residue and may contain lithium batteries. Nicotine and lithium ion batteries are hazardous wastes that must be disposed of properly.

LIQUID NICOTINE CANNOT
GO DOWN THE DRAIN



CARTRIDGES OR PODS, USED OR
UNUSED, CANNOT BE THROWN IN
THE GARBAGE



ANATOMY OF AN E-CIGARETTE



THE CARTRIDGE

This holds the e-liquid (substance). It comes prefilled or refillable. It is usually combined with an atomizer as one unit.

THE ATOMIZER

A coil that is a heating element which converts e-liquid to tiny airborne droplets (aerosol).

THE SENSORS

E-cigarettes without a power button will turn on when the user inhales through it. E-cigarettes with or without a power button require sensors to turn on.

THE BATTERY

A rechargeable lithium ion battery, which provides enough current to heat the atomizer to 400 degrees Fahrenheit in seconds.

Photo credit Utah Department
of Environmental Quality

HANDLING E-CIGARETTE WASTE

- ✚ Keep a spill kit stocked with binders (sand/diatomaceous earth/sawdust) and gloves nearby.
- ✚ Have a Safety Data Sheet for e-liquids available (this can be found via an internet search).
- ✚ Using gloves, place the e-liquids, cartridges, and pods in a container that is in good condition and has a lid that can be securely closed. Label the container with the words “Hazardous Waste Nicotine,” and “Danger - toxic in contact with skin.”
- ✚ Keep a log of the amount of waste as it is collected, and make arrangements with a transporter and disposal company to pick up the waste BEFORE you accumulate the maximum limit (e.g. 1kg for VSQG)
- ✚ Store lithium ion batteries away from heat and direct sunlight. Prevent terminals from touching by storing each battery in a plastic bag or by covering the terminals.
- ✚ Place damaged lithium ion batteries in a plastic bag and then place the bag in an inert material like sand. Label the container “Universal waste batteries,” “Waste batteries,” or “Used batteries.” Lithium ion batteries that have an odor, are discolored, deformed, bulging, or swollen are damaged and have the potential to catch fire when they absorb moisture.
- ✚ For more information on e-cigarettes can be found at <https://idph.iowa.gov/tupc>.



PRACTICE MEDICATION RETURN TO PARENTS BY PARENT PICK-UP

Even when all steps in minimization have been carried out, schools may still experience times when they have more medication than was needed. For example, this may occur with unexpected weather resulting in early out dismissals and school closures. Schools can address medications returned by parent pick up in a variety of ways:

- **Reduce risk of drug diversion or accidental poisoning with controlled pharmaceuticals:** Schools can create and adopt standard protocols that require a second count and signature of the remaining controlled medication on the medication administration record with school personnel when the parent or authorized representative who picks up any remaining controlled medications from the school to reduce the risk of drug diversion.
- **Reduce risk of accidental poisoning with unregulated medications:** Schools can create and adopt standard protocols that require a second count of the remaining unregulated medication and obtain signature from the parent or authorized representative who will pick up medications from school.
- **Educate:** Schools can provide information to parents at the time of pick up on how to safely recycle or dispose of medication as a community outreach to protect the safety of the student, family and the school community.

Below is a non-inclusive list of resources that can be provided to parents and families:

- 1.) Iowa Prescription Take Back Kiosk Map: [Governor’s Office of Drug Control Policy](#)
- 2.) Eco-Return Map: [returns search tool](#)
- 3.) Household Disposal of Sharps: [Iowa Department of Natural Resources](#)
- 4.) [Iowa Poison Control Center Contact Information](#) 1-800-222-1222 and Top Five Poisons Commonly Ingested by Children:
 - Medications
 - Household cleaners
 - Cosmetics and personal care products
 - Foreign bodies (coins, watch batteries)
 - Plants, berries, and mushrooms
- 5.) Community Partner Recycling Event Dates, Locations and Times

LAST RESORT: PRACTICE RECYCLING VOLUNTARY STOCK SUPPLY OR ABANDONED MEDICATIONS

Abandoned Controlled Medications: Schools are not allowed to dispose of or transport-controlled medication for recycling purposes according to the Secure and Responsible Drug Disposal Act. Schools are encouraged to reach out to their local law enforcement agency to collaborate of decreasing the risk of drug diversion by maintaining chain of custody of controlled medications that are abandoned. Under the Secure and Responsible Drug Disposal Act of 2010, school personnel do not have the legal authority to deliver controlled substances to registrants for the purpose of disposal on behalf of the ultimate user. 79 Fed. Reg. 53520, 53546 (Sept. 9 2014). As such, if there is left over controlled substances that have not been picked up by the parents at the end of the school year, school personnel should **NEVER DISPOSE OF OR TRANSPORT** controlled substances for the purposes of disposal to take-back events or collection

receptacle locations. School personnel should contact the School Resource Officer (SRO), local law enforcement, or their local DEA office for assistance with the proper disposal of these substances.

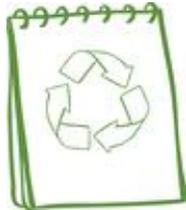
Collaborate with Your Local Law Enforcement: Collaborate with your local enforcement agency to participate in a “Take Back” event. Twice each year, on a Saturday in the Spring and Fall, law enforcement agencies team up with local pharmacies and other organizations in over 100 Iowa communities to sponsor a special one-day collection of unused medicines. Details typically are provided closer to the dates of these events, but general information is available at the [DEA's Website](#). **On the DEA takeback days, vape products and delivery devices are taken as long as the lithium batteries have been removed.** Liquid medications and needles are not accepted.

Stock Medication Recycling: Schools that voluntarily stock medications are the owners of the medications. Dependent on the type of stocked medication allowed by law, schools are responsible to recycle the unused, expired or degraded stock medication in a manner that meets all local, state and federal regulations.

All medication must be brought to school in the original labeled container prepared by the pharmacy or pharmaceutical company. The label should include the following:

- ✓ Child's name
- ✓ Name of medication
- ✓ Dosage of medication to be given
- ✓ Frequency of administration
- ✓ Route of administration
- ✓ Amount
- ✓ Name of prescribing healthcare provider ordering medication
- ✓ Name of Manufacturer (FDA Approved Over the Counter)
- ✓ Date of prescription
- ✓ Expiration date

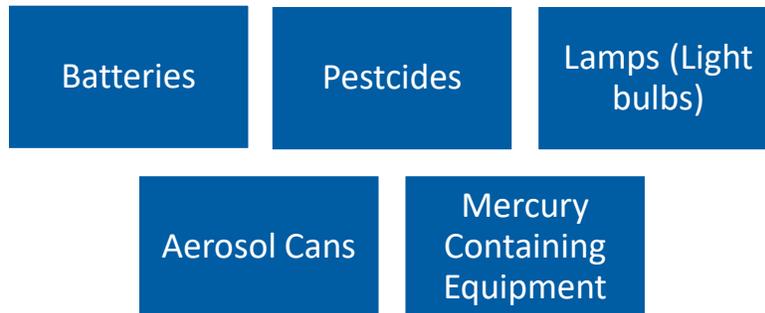


Medication Coming into The School	Medication Leaving the School
<ul style="list-style-type: none"> • Schools must have a policy on medication administration to meet IAC 281.14.1 • Schools must obtain parent consent to administer medication at school to meet IAC 281.14.1 • Schools may want to use a sample drop-off or pick-up forms signed by parents for medications delivered to/picked up from school for adults who may not provide consent for administration, but are assisting parents to get medications to or from school • Schools and parents should calculate what would be required until the administration of the prescription is complete (e.g. antibiotics) or next refill date using the school calendar • Schools should communicate with the parents and ask about the treatment plan to administer the medication to the child dependent on the prescription outside of the school day/calendar • Medication brought to school should be counted by two individuals and this number should be documented on the Medication Administration Record (MAR) with the initials and signature of the individuals who counted the medication • School employees should not pick up prescriptions from pharmacies on behalf of the child's parents unless there is legal documentation allowing this to occur 	<ul style="list-style-type: none"> • Schools should notify parents to pick up medications when there are expired, degraded or left-over medication at school (e.g. inclement weather day with school cancellation results in more medication than needed at school) • Schools should collaboratively communicate with parents and assist in the process to calculate how much medication the school will need for only the time that the child will be in school (e.g. factoring in any professional development days, holidays, early dismissals) • Schools should count all controlled medication with two individuals and this number should be documented on the MAR with the initials and signature of the individuals who counted the medication returned to parents or authorized adult. • Schools should not transport medications on behalf of the child's parents to local recycle locations or take back events • Schools should work with their local law enforcement officers to maintain chain of custody of medications for transfer to recycling or take back locations <div style="text-align: right; margin-top: 20px;">  </div>

UNIVERSAL WASTE

The Federal Universal Waste (UW) Rule was put into place to ease the regulatory burden for businesses dealing with common hazardous wastes. It allows a longer collection time (one year) making recycling these wastes more feasible. The UW Rule also has fewer record keeping, training, and reporting requirements compared to those for other hazardous wastes. The Iowa Waste Reduction Center (IWRC) has a [Universal Waste fact sheet](#) with easy to follow regulations. ([EPA 2021](#); [Volume 84 FR 67202](#))

FIVE UNIVERSAL WASTES IN IOWA



DEFINING HAZARDOUS WASTE

A waste is any solid, liquid, or contained gaseous material that is discarded by being disposed of, burned or incinerated, or recycled.

Hazardous waste can be one of two types:

1. **Listed waste.** Your waste is considered hazardous if it appears on one of four lists published in the Code of Federal Regulations (40 CFR Part 261). Currently, more than 500 wastes are listed. Wastes are listed as hazardous because they are known to be harmful to human health and the environment when not managed properly. Even when managed properly, some listed wastes are so dangerous that they are called **acutely hazardous wastes**. Examples of acutely hazardous wastes include wastes generated from some pesticides and that can be fatal to humans even in low doses.

Listed Hazardous Waste Codes and Descriptions

Hazardous Waste Code	Waste Description
F wastes:	These listed wastes come from general processes such as cleaning, degreasing, metal finishing and manufacturing.
K wastes:	These listed wastes come from specific industrial processes, such as chemical or pesticide production, petroleum refining and metal manufacturing.
U wastes:	These listed wastes include unused, off-specification or discarded commercial chemicals. For example, if you have a process or lab chemical that has exceeded its shelf life and can't be used, this chemical may be a U waste.
P wastes:	Like U wastes, these wastes are also unused, off-specification or discarded commercial chemicals. The P wastes are, however, more toxic than U wastes.

2. 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). Examples include waste oils from oil replacement; spent solvents from paint removal, car washing, and degreasing; and methanol used for paint removal. 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. Battery acid is a good example. Phosphoric, hydrochloric, and hydrofluoric acids used in the vehicle maintenance industry for parts cleaning and degreasing are also examples. 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 lithium-sulfur batteries and 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 wastes used in the vehicle maintenance industry for rustproofing, painting, paint removal and parts washing and degreasing may be considered toxic. The waste codes for these materials range from D004 to D043.

WASTE GENERATOR STATUS

Q. Does it matter how much hazardous waste (HW) a school generates?

A. Yes. Hazardous waste from schools is collective, meaning that it would include HW from all areas of the school collectively. The regulations will vary depending on the [generator status](#) of the school.

Finding Your Generator Category

Accumulating hazardous waste on site can pose a threat to human health and the environment, so you may keep it only for a short time without a permit. Before shipping the waste for disposal or recycling, you are responsible for its safe management, which includes safe storage, safe treatment, preventing accidents, and responding to emergencies in accordance with federal regulations.

Once you know that you generate hazardous waste, you need to measure the amount of waste you produce per month. The amount of hazardous waste you generate determines your generator category. Many hazardous wastes are liquids and are measured in gallons-not pounds. In order to measure your liquid wastes, you will need to convert from gallons to pounds. To do this, you must know the density of the liquid. A rough guide is that 30 gallons (about half of a 55-gallon drum) of waste with a density similar to water weighs about 220 pounds; 300 gallons of a waste with a density similar to water weighs about 2,200 pounds. EPA has established three generator categories, as follows, each of which is regulated differently:

Very Small Quantity Generator (VSQG)	Small Quantity Generator (SQG)	Large Quantity Generator (LQG)
A school that has less than 220 lbs. of non-acute hw and less than 2.2 lbs. of acute hw a month.	A school that has 220 to 2,200 lbs. of non-acute hw and less than 2.2 lbs of acute hw a month.	A school that has more than 2,200 lbs. of non-acute hw and over 2.2 lbs acute hw a month.

Regulations include HW storage time limits, Personnel Training, Accumulation Requirements, Preparedness and Prevention, EPA ID numbers and more. EPA’s website has a [chart](#) that provides a summary of requirements for each class of hazardous waste generator. This is not an exhaustive list of all of the requirements for generators and should be used as just a guide. Generators are responsible for all applicable requirements in 40 CFR part 262.

Episodic Generation

Sometimes a school who is a VSQG or SQG encounters a planned or unplanned event that generates enough hazardous waste to propel them into a higher generator category for that month. An episodic event as defined [in 40 CFR section](#)

[262.231](#) as an activity that does not normally occur during a generator's operations and that causes that generator to exceed the threshold for its normal generator category for that month. Both VSQG and SQG can experience episodic events.

There is a special provision in Part 262, Subpart L that allows schools who are VSQG or SQG to seek relief once a calendar year as an episodic event. The relief is contingent on meeting the following conditions outlined on the [EPA website](#).

Episodic events can be planned or unplanned. A clean out of a tank or of a laboratory, a short-term maintenance project, or a removal of excess inventory would be considered planned episodic events. There can also be unplanned events such as a spill caused by a storm, damaged equipment, or a product recall. An episodic event cannot last more than 60 days beginning on the first day episodic hazardous waste is generated and concluding on the day the hazardous waste is removed from the generator's site.

Notification

- Both VSQGs & SQGs must notify about episodic events using Site ID form (EPA form 8700-12)
- Planned event: notify 30 or more days prior to the episodic event on Site ID form
- Unplanned event: notify within 72 hours of the event by phone or email and follow-up with Site ID form

Notification elements

- A VSQG must get an EPA ID number (automatic upon submitting the Site ID form)
- Start and end dates of the episodic event (no more than 60 calendar days)
- Reason for the event
- Types of hazardous waste
- Estimated quantities of hazardous waste
- Emergency coordinator contact information

RECYCLING

All schools should have a program to recycle all plastic, glass, and metal food and beverage containers and even food waste. This includes both the containers generated during food preparation as well as those generated by vending machines, lunches brought to school. Since these items are also collected in much larger quantities from homes in every community, your school may want to use the same collection and processing system that serves local residents.

The [Iowa Waste Exchange](#) (IWE) program aids schools in various ways not only in disposal of waste but also in the procurement of recycled items (e.g. furniture, ice packs, equipment). The IWE Resource specialists have a vast network of financial and technical assistance resources to assist your school in implementing waste reduction and recycling programs/projects, such as recycling used textbooks and supplies. The DNR has a webpage dedicated to resources, contact information and location of your IWE representative.

Iowa Waste Exchange area resource specialists across the state work with businesses and schools of any size to match their waste with other businesses or schools that need raw materials. Individual consultation sessions are free, confidential and non-regulatory. Whether the school is looking for a particular material or need to get rid of a byproduct, the Iowa Waste Exchange can assist.

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