

# Material Storage & Disposal

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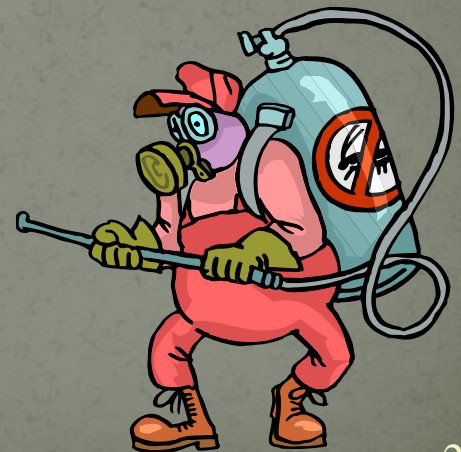
Employee Training Series  
Green Country Stormwater Alliance  
August 26, 2015

*PREPARED IN COOPERATION WITH THE Texas Commission on Environmental Quality, NCTCOG, INCOG  
and the U.S. ENVIRONMENTAL PROTECTION AGENCY.*

*The preparation of this presentation was financed through water quality grants from the EPA,  
Texas Commission on Environmental Quality and GCSA..*

# Proper Handling of Chemicals

This presentation provides suggestions and ideas for the safe handling, storage and cleanup of materials used by municipal workers.





# Proper Handling of Chemicals

- Hazardous material storage, handling and disposal regulations are complex and a complete understanding is beyond the scope of this stormwater presentation.
- Unless you have received specific training and feel competent in this highly regulated field, you will need the support of a waste management company, environmental consultant or need to develop a good working relationship with ODEQ and EPA.

# MSDS Are Now Called SDS

OSHA revised its  
Hazard Communication Standard (HCS)  
to align with the United Nations'  
Globally Harmonized System (GHS)  
of Classification and Labeling of Chemicals

29 CFR 1910.1200 – Hazard Communication

SDS Sheets rely heavily on 9 Pictograms





# When Did This Happen?

OSHA began phasing these new requirements in on December 1, 2013 and expect it to be fully implemented by June 1, 2016.

# When Did This Happen?

All hazardous chemicals shipped after June 1, 2015 must be labeled with specific elements including pictograms, signal words and hazard and precautionary statements.

Manufacturers, importers and distributors could start using the new labeling system before June 1, 2015 or continue to abide by HazCom 1994 until then.

# Store and Handle Materials Safely

Have safety data sheets (SDS) on hand for all dangerous materials in the work area.

The SDS will inform you of:

- Chemical, physical & toxicological properties
- Safe handling recommendations
- Precautionary information
- Fire & explosion potential
- Personal hazards
- Safe disposal procedures



# Example: GHS Inner Container Label For Fictitious ToxiFlam



**ToxiFlam SP2485**

**Danger!**



**Toxic If Swallowed, Flammable Liquid and Vapor**  
**IF SWALLOWED: Immediately call a POISON CONTROL**  
**CENTER or doctor/physician. Rinse mouth.**

Do not eat, drink or use tobacco when using this product. Wash hands thoroughly after handling. Keep container tightly closed. Keep away from heat/sparks/open flame. No smoking. Wear protective gloves and eye/face protection. Ground container and receiving equipment. Use explosion-proof electrical equipment. Take precautionary measures against static discharge. Use only non-sparking tools. Store in cool/well-ventilated place.



# Store and Handle Materials Safely

- Store materials in original containers if possible. If not, clearly label the replacement containers.
- For additional information on the safe storage of hazardous materials in Oklahoma, call Public Employee Occupation, Safety & Health at 405-528-1500 x 226.



# Store and Handle Materials Safely

- Before reusing a container for another product, remove or obscure the old label.
- Use a waterproof marker to write directly on the container or on a new permanent label.
- The replacement container must be compatible with the product your are putting in it.





# Store and Handle Materials Safely

At a minimum, a proper label should contain:

- Name of the product (same as on the SDS)
- Name and address of the manufacturer
- Appropriate hazard information
- Lot or identification number
- Expiration date
- The label must be legible and it is a good idea to date and initial the container when it is opened.





# Store and Handle Materials Safely

- Make sure containers are closed or sealed except when they are being filled or emptied.
- Inspect storage areas weekly to quickly detect signs of corrosion or leakage and keep an inspection log. Promptly replace any leaking container.



# Store and Handle Materials Safely

- Store materials in their original sealed containers, indoors if possible.
- If they must be stored outdoors, store them in sealed containers, on a site that is secured, paved and protected from the elements.





# Store and Handle Materials Safely

Spill trapping devices are recommended and may be required in some cases.

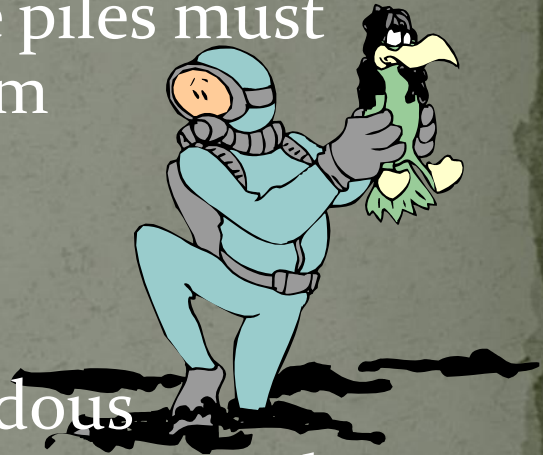
- Indoors: store barrels on a spill containment base.
- Outdoors: storage areas should be bordered by a curb or berm to contain spills.
- Do whatever is necessary to contain leaks and spills and prevent releases to water bodies.





# Store and Handle Materials Safely

- Salt and salt/sand storage areas should be covered and have an impervious floor. Outside piles must be bermed to prevent salt and sand from escaping the site.
- The CERCLA regulations list the hazardous materials and spill volumes that must be reported to DEQ and the National Response Center. Consult this list for chemicals and volumes.



# Spill Response

1. Determine whether it is an incidental spill or requires an emergency response.
2. Stop the source of the leak or spill.
3. Warn others of possible hazards if necessary.
4. Contain the spill.
5. Safely clean up the spill using personal protective gear if necessary.





# Spill Response

6. Dispose of the waste properly.
7. Don't forget to notify your supervisor and regulatory agencies if necessary.
8. Write up a summary of the events that occurred.





# Understanding Hazardous Waste Regulations

- The Resource Conservation and Recovery Act (RCRA) is the primary law governing the disposal of solid and hazardous waste.
- RCRA was passed by congress in 1976 and amended the Solid Waste Disposal Act of 1965.
- This act authorizes environmental agencies to cleanup contaminated sites and regulate the disposal practices of *both* hazardous and nonhazardous materials.



# Defining Hazardous

- A. Hazardous by *definition* are the materials listed in one of the four lists published in 40 CFR Part 261.
- B. Hazardous by *characteristic* is a material that exhibits an ignitable (D001), corrosive (D002), reactive (D003) or toxic (D004) property. Knowledge of product or testing can determine this criteria.
- C. A material generated by the treatment of hazardous waste or mixed with hazardous waste. (Mixing Rule)





# Used Oil



- EPA does not regulate used oil as a hazardous waste if it is being recycled or burned for energy recovery. Instead, used oil handlers must follow federal standards found in 40 CFR Part 279.
- Used oil generators are businesses that handle used oil through commercial or industrial operations or the maintenance of vehicles.
- If used oil is not recycled, the generator must determine if it is a hazardous waste prior to disposal.



# Used Oil

EPA does require used oil generators to abide by good “management standards.” These requirements cover:

- Container types and labels
- Leaks, spills and cleanups
- Records and documentation

Used oil mixed with a hazardous material (ex: gas, solvents) becomes a hazardous waste!

- RCRA Hotline for recycling used oil and oil filters: 1-800-424-9346



# Used Filters

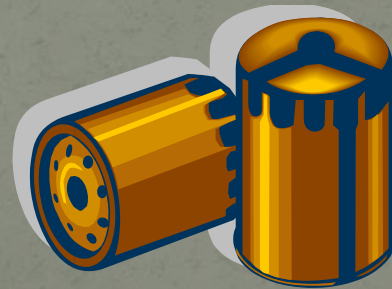
- Recycle properly drained used oil filters if possible. Used oil recycling centers will frequently accept used oil filters as well.
- Some landfills do not accept used oil filters. If recycling as scrap metal is not an option, check with your local trash collection service and see if it is acceptable to dispose of them with your nonhazardous solid waste.





# Used Filters

- Used oil filters are considered nonhazardous waste if no free flowing used oil is present.
- Terne-plated oil filters (new or used) *are* hazardous because of the lead and tin they contain.
- Used fuel filters can be drained and then tested to determine if they are hazardous.



# Other Used Oils

- EPA defines used oil 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.
- These materials are *not* considered hazardous waste if recycled. If they are mixed with a hazardous waste or sent to a landfill for disposal, they *are* considered a hazardous waste.





# Other Used Oils

Other materials treated as used oil are:

- ✓ Shop rags soaked with used oil
- ✓ Transmission fluid
- ✓ Used brake fluid
- ✓ Compressor oils
- ✓ Industrial hydraulic fluid
- ✓ Metal fluids and oils (cutting oil)



# Not Considered Used Oil

EPA does *not* consider the following used oils:

- Virgin fuel oil recovered from a spill cleanup 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 or cleaning agents



# Used Antifreeze

- Waste antifreeze should be recycled either on-site, by a mobile recycling service or off-site. Antifreeze is not considered a hazardous waste if it is recycled.
- If waste antifreeze is not recycled, knowledge of process or a Toxic Characteristics Leaching Procedure (TCLP) will have to be performed to determine the potential hazards before disposal.

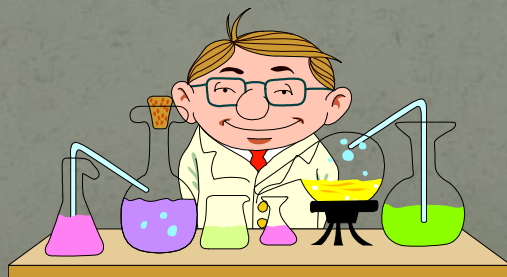


# Used Antifreeze

If the test results reveal elevated levels of:

- Solvents
- Metals (primarily lead, cadmium, chromium)
- A pH greater than 12.5 s.u.
- Or hazardous materials mixed with the antifreeze

The waste antifreeze will be declared hazardous.





# Used Solvents

- Used solvents will be considered hazardous if the flashpoint (temperature at which the liquid will ignite) is less than 140°F.
- Other used solvents may be declared a listed or characteristic (toxic) hazardous waste.
- Do not mix these with other wastes.

To minimize waste, don't purchase or use more than you really need and recycle as much as possible.



# Paint and Coatings

Paints and coatings are considered hazardous when:

- Flashpoint is under 140°F
- They contain elevated levels of certain metals (TCLP metals)
- Their base solvents are hazardous



To minimize waste, only purchase what you need and donate any extra paint to someone that can use it.





# Used Rags and Absorbents

- Used shop towels that are laundered are not considered a solid waste and therefore, are not a hazardous waste.
- What should you do with rags and other absorbents used to clean up spills and leaks?
- A good “rule-of thumb” is to manage the rag or absorbent like the material it was used to clean up.



# Used Rags and Absorbents

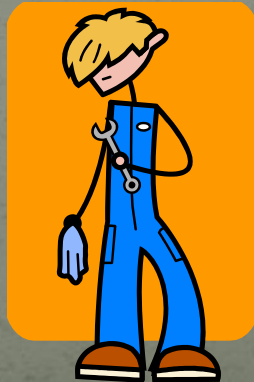
- After a used oil cleanup, remove as much of the free-flowing oil as possible from the rags or absorbents and then manage the oil as you would have before it spilled.
- Once the free-flowing used oil has been removed from these materials, the rags and absorbents are not considered used oil (unless burned for energy recovery) and may be managed as solid waste as long as they do not exhibit a hazardous waste characteristic.



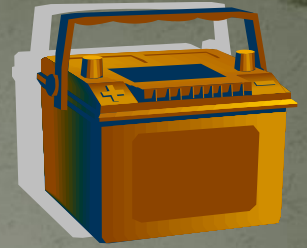


# Used Rags and Absorbents

- Rags and absorbents contaminated with hazardous materials (solvents, antifreeze, paints, gas, etc.) and intended for disposal will likely be considered hazardous waste unless recycled.
- If the rag or absorbent was used to clean up a listed hazardous waste or exhibits the properties of a characteristic hazardous material, it will be considered hazardous waste.



# Batteries



- Old batteries may be considered a hazardous waste, depending upon the type of battery. Recycle and exchange old batteries for new ones whenever possible.
- Batteries should be stored indoors or protected from the weather with secondary containment capable of containing any battery acid leaks.





# Tires

- Used tires are not considered hazardous waste.
- Recycle used tires (retread, sell, shred and reuse for asphalt or other products) whenever possible.
- Disposal in a permitted landfill, if permissible, should be a last resort.



# Material Storage & Disposal

*Protecting water quality requires  
all employees to do their part to  
prevent stormwater pollution.*

