

# Worksheet #9 - Storage & Proper Handling of Fuels, and other Typical Household Chemicals

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Use this worksheet to learn about best management of fuels and chemicals.

## ***Why should you be concerned?***

- Petroleum products contain toxic compounds, such as benzene, which can cause cancer.
- Some toxic chemicals are colourless and odourless and can go undetected in water.
- Contaminated water or soil greatly devalues land property and is very expensive to clean-up. Clean-up may not even be possible in some cases.
- A property owner may be held liable for contaminating any water source.
- Vapours from some chemicals such as fuels can ignite or cause explosions.
- Pesticides have been found in amounts below the tolerance levels set by the government in Ontario's drinking water. We don't know the effects of repeated exposure to very small amounts over a long period of time. Chronic health problems may not appear for many years.

## ***What you can do.***

1. Educate yourself about alternative non-toxic or lower toxicity chemicals to suit your purposes.
2. Avoid storing chemicals. Buy only the amount you need and make sure you have a safe storage area. Contact your local municipality to learn how you can dispose of empty chemical containers and rinse water safely.
3. Never store fuel or any chemical on your property where it may come in contact with water.
4. Read and follow instructions carefully. Note if weather conditions can affect application.
5. Never pour chemical leftovers down the drain, storm sewer, storm drain or into open water.

# Chemicals: How do you rate?

Topic	Best <b>4</b>	Good <b>3</b>	Fair <b>2</b>	Poor <b>1</b>	Your Rating
<b>FUEL CHEMICALS</b>					
<b>1 Vehicles and machinery</b>	Regular checks to ensure vehicles and machinery are not leaking.		Irregular checks to ensure vehicles and machinery are not leaking.	Never check to ensure vehicles and machinery are not leaking.	<input type="checkbox"/>
	Any fluid spills are cleaned up immediately. Rags are disposed of appropriately.	Any fluid spills are cleaned up immediately.	Some fuel spills are cleaned up immediately.	Drips and spills are not cleaned up.	<input type="checkbox"/>
	Used oil, antifreeze, and other wastes are appropriately recycled.	Used oil, antifreeze, and other wastes are disposed of at landfill.	Used oil, antifreeze and other wastes are allowed to accumulate on your property.	<b>*Used oil, antifreeze, and other wastes are dumped down the storm-sewer, in a ditch or on the ground.</b>	<input type="checkbox"/>
	There are no unused or decommissioned vehicles on the property, <b>AND</b> no dirty car parts, wastes or chemicals.	There are no unused or decommissioned vehicles on the property, <b>AND/OR</b> dirty car parts and vehicle wastes /chemicals are kept out of reach of storm water runoff.	There are unused or decommissioned vehicles on the property, <b>AND/OR</b> dirty car parts and vehicle wastes or chemicals are left on unpaved areas outside.	There are unused or decommissioned vehicles on the property, <b>AND/OR *Car parts and vehicle wastes or chemicals are left near water courses.</b>	<input type="checkbox"/>

 **Tip**

Keep your vehicles regularly serviced to check for oil, antifreeze or gas leaks.

\*These conditions may violate provincial legislation or municipal by-laws.

Topic	Best <b>4</b>	Good <b>3</b>	Fair <b>2</b>	Poor <b>1</b>	Your Rating
<b>FUEL STORAGE</b>					
<b>2 Portable fuel storage</b>	All fuel is used up regularly so that storage is not required anywhere on the property.	A minimal amount of fuel is stored in safe, approved, original-sale, and clearly labelled containers,  <b>AND</b> liquid fuel containers have a spout to prevent spills.	Fuel is stored in safe, approved, original-sale, and clearly labelled containers.	Fuels are stored in unmarked, open or unapproved containers.	<input type="checkbox"/>
	Distance between petroleum storage and nearest surface water is greater than 150 metres (500 feet).	Distance between petroleum storage and nearest surface water is 61-150 metres (200-500 feet).	Distance between petroleum storage and nearest surface water is 30-60 metres (100-199 feet).	<b>*Distance between petroleum storage and nearest surface water is less than 30 metres (100 feet).</b>	<input type="checkbox"/>
	Distance between petroleum storage and well(s) is greater than 90 metres (300 feet).	Distance between petroleum storage and well(s) is 24-90 metres (76-300 feet) for a drilled well,  <b>OR</b> 47-90 metres (151-300 feet) for a bored/dug well.	Distance between petroleum storage and well(s) is 15-23 metres (50-75 feet) for a drilled well,  <b>OR</b> 30-46 metres (100-150 feet) for a bored/dug well.	<b>*Distance between petroleum storage and well(s) is less than 15 metres (50 feet) for a drilled well,  OR less than 30 metres (100 feet) for a bored/dug well.</b>	<input type="checkbox"/>

\*These conditions may violate provincial legislation or municipal by-laws.

Topic	Best <b>4</b>	Good <b>3</b>	Fair <b>2</b>	Poor <b>1</b>	Your Rating
<b>ABOVE GROUND FUEL TANK STORAGE</b>					
<b>3 Gasoline and diesel fuel tanks</b>	No fuel tanks are present above or below ground anywhere on the property.	All tanks are made of steel and have a protective, anti-corrosive coating,  <b>AND</b> are ULC approved.		<b>*Steel tank with no protective coating,</b>  <b>OR fibreglass tank,</b>  <b>OR not ULC approved.</b>	<input type="checkbox"/>
	Tanks are regularly checked for leaks.		Tanks are tested monthly for leaks.	Tanks are not checked for leaks.	<input type="checkbox"/>
	The water table is located more than 3 metres (10 feet) below the surface, under the fuel tank.		The water table is located consistently 1.5 metres (5 feet) to 3 metres (10 feet) below the surface.	The water table is located consistently less than 1.5 metres (5 feet) below the surface.	<input type="checkbox"/>
	Inactive tanks are decommissioned and properly removed.			Inactive tanks are abandoned.	<input type="checkbox"/>
	Tanks sites are checked for contamination. If found, it is immediately reported.			Tanks sites are not checked for contamination,  <b>OR</b> if found, not immediately reported.	<input type="checkbox"/>

**Tip**

If a spill or leak occurs, report it immediately to the Spills Action Centre at the MOE by calling: 1-800-268-606

*\*These conditions may violate provincial legislation or municipal by-laws.*

Topic	Best <b>4</b>	Good <b>3</b>	Fair <b>2</b>	Poor <b>1</b>	Your Rating
<b>ABOVE GROUND FUEL TANK STORAGE</b> <i>continued</i>					
<b>4 Heating oil tanks</b>	All types of tank(s) are located more than 3 metres (10 feet) from any building.	Tank(s) with a capacity of less than 2500 litres (550 gallons) are located 3 metres (10 feet) or less from any building.		Fuel tank is located inside a building,  <b>*OR tank(s) with a capacity of greater than 2500 litres (550 gallons) are located less than 1.5 metres (5 feet) from a building.</b>	<input type="checkbox"/>
	Tanks are ULC approved, monitored for leaks, and proper vent pipe used,  <b>AND</b> protective coating maintained.			<b>*Tanks are not ULC approved, OR monitored for leaks, OR no vent pipe used, OR protective coating not maintained.</b>	<input type="checkbox"/>
	Tank less than 5 years old.	Tank less than 10 years old.	Tank less than 20 years old.	Tank more than 25 years old,  <b>OR</b> age of tank unknown.	<input type="checkbox"/>
	Fuel delivery system between fuel storage and appliance is installed by a registered contractor and inspected annually for leaks.			<b>*Fuel delivery system between fuel storage and appliance is not installed by a registered contractor,  OR not inspected annually for leaks.</b>	<input type="checkbox"/>

**Tip**  
If you have underground storage of fuel, you are not in compliance with regulations.


\*These conditions may violate provincial legislation or municipal by-laws.

Topic	Best <b>4</b>	Good <b>3</b>	Fair <b>2</b>	Poor <b>1</b>	Your Rating
<b>HOUSHOLD CLEANERS AND NON-FUELS</b>					
<b>5. Cleaning products</b>	All household cleaning products are non-toxic and non-harmful to humans,  <b>AND</b> minimal quantities are used.	Most household cleaning products are non-toxic and non-harmful to humans.	Typical chemical cleaners are used properly,  <b>AND</b> minimal quantities are used.	No consideration given to a product's toxicity,  <b>OR</b> more than is necessary is used.	<input type="checkbox"/>
<b>6. Total amount non-fuel chemicals stored</b>	No chemicals stored any time.	Chemicals are not stored longer than immediate use period.	Small amount of chemicals stored for longer than immediate use period.	Large quantities of chemicals stored for longer than immediate use period.	<input type="checkbox"/>
<b>7. Distance from chemical storage to nearest water source</b>	Greater than 150 metres (500 feet).	60-150 metres (200-500 feet).	30 -60 metres (100-199 feet).	Less than 30 metres (100 feet).	<input type="checkbox"/>
<b>8. Distance from chemical storage to well</b>	Greater than 90 metres (300 feet).	23–90 metres for a drilled well (76-300 feet),  <b>OR</b> 46-90 metres for a bored/dug well (151-300 ft).	15-23 metres for a drilled well (50-76 feet),  <b>OR</b> 30 -45 metres for a bored/dug well (100-150 feet).	Less than 15 metres for a drilled well (50 feet),  <b>OR</b> less than 30 metres for a bored well (100 feet).	<input type="checkbox"/>
<b>9. Chemical solution mixing</b>	Chemicals are mixed in well ventilated area, on an impervious surface, and far from any open drain or open water source.			Chemicals are not mixed in well ventilated area,  <b>OR</b> surface is not impervious,  <b>OR</b> mix far from any open drain or open water source.	<input type="checkbox"/>

Topic	Best <b>4</b>	Good <b>3</b>	Fair <b>2</b>	Poor <b>1</b>	Your Rating
<b>HOUSHOLD CLEANERS AND NON-FUELS</b> <i>continued</i>					
<b>10. Chemical storage area and containers</b>	Stored in a water-proof, locked cabinet or storage container. The container itself stored in a garage or shed with a concrete floor that does not contain any drains.	Stored in a garage or shed with a concrete floor that does not contain any drains.		Stored with human or animal food, <b>OR</b> stored in residence, <b>OR</b> stored in a garage or shed with a concrete floor that contains drains.	<input type="checkbox"/>
	Sill installed in cabinet to contain any spills.	No sill installed in cabinet.		No sill installed in cabinet. <b>AND</b> garage or shed has floor drain that leads to surface water source, etc.	<input type="checkbox"/>
	Garage or shed is well ventilated to outside.			Garage or shed is not ventilated to outside.	<input type="checkbox"/>
	Emergency numbers are posted nearby.			No emergency numbers are posted nearby.	<input type="checkbox"/>
	All chemicals are in clearly marked containers.			Containers not labelled.	<input type="checkbox"/>
	Chemicals are used before the expiration date.			Chemicals not stored or used beyond expiration date.	<input type="checkbox"/>

*\*These conditions may violate provincial legislation or municipal by-laws.*

Topic	Best <b>4</b>	Good <b>3</b>	Fair <b>2</b>	Poor <b>1</b>	Your Rating
<b>HOUSHOLD CLEANERS AND NON-FUELS</b> <i>continued</i>					
<b>11. Return, rinsing and disposal of chemical containers</b>	Use of returnable or refillable containers,  <b>AND</b> rinse water is used as per label instructions.	Triple or pressure rinsed containers or empty bags taken to municipal landfill.  <b>AND</b> rinse water is used as per label instructions.	Appropriate disposal of triple/pressure rinsed containers.  <b>BUT</b> rinse water is allowed into septic system or storm drain.	<b>*Inappropriate disposal of un-rinsed containers including burning them.</b>	<input type="checkbox"/>
<b>12. Emergency plan and clean up equipment for spills</b>	Emergency plan easily accessible, outlining actions to be taken in case of spill, leak, fire or explosion,  <b>AND</b> cleanup equipment available.	Emergency plan easily accessible, outlining actions to be taken in case of spill, leak, fire or explosion.	Emergency phone numbers posted nearby,  <b>AND</b> general plan in case of emergency.	<b>*No emergency plan prepared, OR no spill cleanup equipment ready nearby.</b>	<input type="checkbox"/>
<b>DISPOSAL OF ANY CHEMICALS</b>					
<b>13. Disposal of hazardous chemicals or materials</b>	No unused vehicle batteries stored on the property.  Expired household batteries are taken to a hazardous waste facility or a retail store that safely collects expired batteries.  Disposal is unnecessary because appropriate amount of chemical purchased and used up.	Leftover hazardous substances are given to others in proper and clearly labelled containers for their appropriate use as soon as possible.	Expired household batteries are thrown in the regular garbage and taken to a landfill.  Chemical waste is properly disposed of at a hazardous waste facility.	Vehicle batteries are stored on the property.  Expired household batteries are not disposed of.  <b>*Hazardous substances are poured down the drain, on the ground burned, or taken to a landfill.</b>	<input type="checkbox"/>  <input type="checkbox"/>

**Tip**  
 If you have leftover chemicals such as paint or turpentine, ask your neighbours or friends if they need it for a current project or return it to a store that collects used paints.



# Storage & Handling of Chemicals

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## Typical Hazardous Household Chemicals:

(Taken directly from Home-A-Syst, 1997)

### Household Waste

- Ash/sludge from burned household waste
- Light bulbs/lamps (contain mercury)
- Waste motor oil
- Plastic wraps and containers (hazardous only when burned)
- Pesticide or solvent containers
- Empty containers from other product categories listed here

### Clothing and Fabric Care Products

- Mothballs
- Dry-cleaning fluids
- Spot removers (solvent based)
- Shoe-leather polishes

### Hobby and Recreation Products

- Artist paints and solvents
- Charcoal lighter fluid
- Strong acids/bases\*
- Bottled gas
- Household batteries (may contain mercury or cadmium)

### Pesticides

- General use and 'restrictive use' pesticides
- Old and/or unwanted pesticides

## Building/Wood Cleaners and Repair Products

Any building and wood cleaners with the following ingredients:

- wood polishes
- products for wood floor and panel cleaning

Building and equipment maintenance products:

- Strong acids/bases\*
- Lead-based paint
- Oil/alkyd paints and primers
- Marine and exterior paints containing mercury and/or pesticides
- Aerosol paint products
- Stains and finishes
- Roof coatings and sealants
- Rust removers
- Silicon and other lubricants
- Adhesive removers
- Paint and finish preparation products
- Adhesives (glues, caulk)
- Wood-preserving products
- Products for brush or spray-gun cleaning
- Water repellents for wood and cement
- Solvents such as those used in degreasers, paint thinners, stains and varnishes

## Vehicle Maintenance Chemicals

- Antifreeze, oil and grease, transmission fluid
- Solvents for oil and grease removal/disposal
- Engine/car parts cleaners such as carburetor and brake cleaner
- Paints and paint preparation products
- Lead acid batteries
- Tire cleaners
- Rust removers
- Ignition wire dryer
- Gasket removers
- Aerosol paint and primer products

### **NOTE:**

*\* A strong acid/base can be identified by noting if there is a hazard warning label that recommends using skin protection or to avoid breathing in vapours or aerosol mists. Also, if the product is intended for commercial use or if it is intended to manage difficult stains or dirt on hard surfaces.*

# Resource List

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## Storage & Handling of Chemicals

*For more information....*

### **Hazardous Product Disposal**

Stewardship Ontario- Municipal Hazardous or Special Waste (MHSW) Program

- Find the nearest disposal site/store by entering your postal code. [www.dowhatyoucan.ca](http://www.dowhatyoucan.ca)

### **Environmentally Responsible Cleaning Tips**

- Environmental Cleaning Solutions  
[www.housekeeping.about.com](http://www.housekeeping.about.com)
- The Renewable Planet  
[www.therenewableplanet.com](http://www.therenewableplanet.com)

### **Alternatives to Pesticides**

See Worksheet #7b

### **Abandoned Vehicles**

Local municipal office (*see Blue Pages*)

### **Fuel Tanks**

- Technical Standards and Safety Authority (TSSA)  
14<sup>th</sup> Floor - Centre Tower, 3300 Bloor St. W.,  
Toronto, ON M8X 2Z4  
(T): 416-734-3347  
Toll-free: 1-877-682-8772  
(F): 416-231-7525  
[www.tssa.org](http://www.tssa.org)

### **Fuel Oil Regulation Code**

- Ontario Petroleum Contractor's Association (OPAC)  
705-735-9467  
[www.opcaonline.org](http://www.opcaonline.org)
- Provide assistance in finding a petroleum equipment mechanic (PM2)

### **Spills**

- Ministry of Environment (MOE)
- Spills Action Centre 1-800-268-6060

# Action Plan Worksheet #9 - Storage & Proper Handling of Fuels, and other Typical Household Chemicals

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Any ratings of 1 or 2 indicates that your storage and handling of fuels and chemicals needs to be changed to reduce the potential for environmental damage and water contamination. Use the information from the worksheet and the resource section to help analyze your potential problems and decide what you can do to solve or control them. Remember, this is YOUR Action Plan. It must suit you and your property.

Topic Number	Workshop Theme	My Rating	Short-term Action	Long-term Action
5	Cleaning Products	2	Research non-toxic cleaners available and purchase those required.	Commitment to using only non-toxic cleaning products.