

# Farm Fuel Safety

Accidents in the handling, use and storage of gasoline, gasohol, diesel fuel, LP-gas and other petroleum products (solvents, paint thinners and naphtha) can result in serious fires and explosions. The chances of fire or explosion can be reduced by following safety precautions and by keeping fuel storage facilities in top condition.

## Flammable Liquids and Gases

Gasoline, diesel fuel, LP gas, degreasing solvents, paint solvents and certain paints are among flammable materials found on most farms. Keep these liquids away from open flames and motors that might spark.

Keep all petroleum storage and handling equipment in good condition and out of reach of children. Inspect for leaks, deterioration or damage. Never store fuel in food or drink containers.

When transferring farm fuels, bond the containers to each other, and ground the one being dispensed from to prevent sparks from static electricity.

Clean up spills right away and put oily rags in a tightly covered metal container. Change your clothes immediately if you get oil or solvents on them.

In addition, watch out for empty containers that held flammable or combustible liquids. Vapors might still be present. Store these liquids in approved containers in well-ventilated areas away from heat and sparks.

Be sure all containers for flammable and combustible liquids are clearly and correctly marked. Read and heed directions on all product containers, noting flammability and safety precautions.

Do not keep gasoline inside the home or transport it in the trunks of automobiles or recreation vehicles.

## Flammable Liquid Storage Requirements

Proper Storage and use of flammable liquids can significantly reduce the possibility of accidental fires and injury to employees. To minimize risk to life and property, the requirements of NFPA 30 & 321, OAR 473-004-0720 and OSHA Standard 1910.106 have been implemented.

Flammable and combustible liquids require careful handling at all times. The proper storage of flammable liquids within a work area is very important in order to protect personnel from fire and other safety and health hazards.

- Storage of Flammable liquids shall be in NFPA approved flammable storage lockers or in low value structures at least 50 feet from any other structure. Do not store other combustible materials near flammable storage areas or lockers
- Bulk drums of flammable liquids must be grounded and bonded to containers during dispensing
- Portable containers of gasoline or diesel are not to exceed 5 gallons
- Safety cans used for dispensing flammable or combustible liquids shall be kept at a point of use.
- Appropriate fire extinguishers are to be mounted within 75 feet of outside areas containing flammable liquids, and within 10 feet of any inside storage area for such materials.
- Storage rooms for flammable and combustible liquids must have explosion-proof light fixtures
- Bulk storage of gasoline or diesel are kept in above ground tanks. Tank areas are diked to contain accidental spills. Tanks shall be labeled IAW NFPA guidelines. All tank areas shall be designated no smoking - no hot work - no open flame areas.

## **Refueling**

Be cautious during refueling. Fires and explosions can happen. Besides being a fire hazard, spilled fuel can cause irritation and discomfort if it contacts the skin. Breathing an excess of fuel vapor often causes dizziness and headache.

When arriving to refuel, drive up to the fuel pump or storage tank slowly. Be careful not to bump it. Turn off the engine, and extinguish smoking materials. If the engine is hot, allow it to cool for a few minutes. Position yourself so you can refuel without slipping or becoming fatigued. Remove the fuel cap slowly and allow the pressure to dissipate.

Avoid over filling. Allow any spilled fuel to evaporate before starting the engine. After releasing the nozzle valve to shut off fuel flow, keep the nozzle in the filler opening a few moments to allow it to empty. Check vents to be sure they're not clogged, and replace the filler cap. Then lock up the pumps so children, or other unauthorized persons cannot pump fuel.

Refuel small equipment outside -- never in an enclosed area. A funnel will make the job easier when using a safety can.

Wipe up spills and allow the excess to evaporate before starting the engine. Before resuming work, put the safety can back into safe storage.

## **Aboveground Tanks**

An aboveground storage facility is cost effective. The tanks are movable and ground water or limited flooding has little effect on them.

Aboveground storage tanks must be sturdy and designed for fuel storage. They should be 40 feet or more from buildings. A tank too near a burning building could explode and spread the fire. Mount a tank elevated for gravity discharge on sturdy supports placed on a firm, level surface. Keep the area clear of weeds and trash to reduce fire risk. Remind machinery operators to stay away from the support structure and to not bump it when pulling up to refuel.

Unless tanks are located in a shaded spot or have overhead canopies to shield the sun, evaporation losses can be sizable. Use a pressure-vacuum relief valve (rather than the standard vented cap).

## **Safety Cans**

A labeled safety container is made of heavy-gauge metal and has a cap that automatically closes to prevent a spill if the can is dropped or tipped over. The squat shape makes a safety can difficult to tip. A pressure-relief valve opens when vapor pressure inside the can reaches three to five pounds per square inch. A flash-arresting screen in the filler opening and pouring spout will reduce the possibility of a spark which could cause a fire or explosion.

Label fuel containers according to their contents. Do not risk confusing diesel fuel and gasoline. Paint gasoline cans red and diesel cans green. Store cans in a cool, well-ventilated place, away from living quarters and ignition sources.

## **LP Gas**

The fire or explosion hazard with LP gas usually involves leaks or failures in the system, improper transfer of liquid from one tank to another, or accidents where tanks or lines are ruptured. Also, an LP tank involved in a building, trash or tractor fire can greatly intensify such a fire or even explode.

Large LP storage tanks should be at least 50 feet from the nearest building and 20 or more feet from other aboveground fuel tanks. Provide and maintain solid foundations to support LP-gas tanks so they won't settle or tip and break or damage connections.

Equip the storage tank with a liquid-fill hose and a vapor-return hose. If the vapor escapes into the atmosphere, a fire or explosive danger is created. Therefore, when you fill your fuel tank, the vapor from the top should be fed back into the storage tank.

Be alert for leaks in the LP-gas system. Protect gauges and regulators from weather and dirt. If you smell gas, turn off valve(s) at the tank(s). Open windows and doors to ventilate the building, and don't switch on anything electrical. Get everyone out, and call a technician to find and fix the leak.

### **More Safety Reminders**

Keep all equipment used for petroleum storage and handling in good condition. Watch for leaks, deterioration or damage. Make needed repairs or replace faulty components immediately. Keep cap vents clean and free, and tank and safety can pressure-relief valves functional.

If fuel is spilled on your clothing, go outside, away from any ignition source, and allow the clothing to dry. If more than a little was spilled, remove the garment, and wash the fuel from your skin to avoid irritation.

When siphoning fuel, use a pump. Never use your mouth. A mouthful of gasoline or diesel fuel could be fatal, especially if it gets into your lungs. Also avoid excessive inhalation of gasoline vapor.

When servicing machinery, check the fuel system for leaks. Double check connections to be sure they are secure and leak-free after changing fuel filters or performing other work requiring disconnecting or removing a fuel line or fuel system component.

Turn off oil heaters before refueling. Make sure the filler cap is replaced and tightened. Set portable heaters away from combustibles where they cannot be tipped over.

Motor oil and grease are considerably less flammable than engine fuels, but they will burn. Keep them away from ignition sources.

### **Gasoline Containers**

Gasoline containers are dangerous. They contain a very flammable substance that can ignite and burn very easily. Extreme care should be used in the handling and storing of these containers.

Hydrocarbons (gasoline) build up static electricity as they are stirred or agitated, during refilling.

**Always refill gas cans while they are in contact with the ground, and never while in the trunk of a car or in the bed of a truck. Those charged particles are looking for a place to discharge their stored energy and cannot do so safely because the plastic container or a truck bed liner act as an insulator.**

Gasoline should always be dispensed into an APPROVED METAL CONTAINER DESIGNED AND LABELED FOR THE STORAGE AND TRANSPORTATION OF GASOLINE. If in a pinch, use an APPROVED plastic container designed and labeled for the storage and transport of gasoline.

NEVER USE bleach jugs or glass jars to carry gasoline under any circumstance!!! So now you have your shiny new metal gasoline container and feel all warm and fuzzy that you are doing the right thing. I'm very pleased with you so far and I will let you get back to riding after a few more pointers.

Only refuel your engine after it is cool.

Many people have been burnt and scarred for life by gasoline spilling on a hot engine during the refueling process. We get so used to the convenience of gasoline, coupled with the fact that we use it every day in our cars that we forget the energy and danger that a gas can holds.