# Transporting Liquids Meeting Kit




## WHAT´S AT STAKE

Transporting liquids can make trucks harder to control. Safe liquid transport protocols and practices and cautious driver behavior is critical to prevent accidents.

## WHAT´S THE DANGER

**KNOW THE RISKS OF TANKER TRUCK TRANSPORT**

- Tanker trucks are generally mounted higher than other standard truck beds. This raises the center of gravity and makes tanker trucks top heavy and prone to rollovers. Liquids move more fluidly and violently than solid trucked materials, so they can add to tanker instability.
- When the truck accelerates or brakes, the liquid can splash forward or backward. When the truck turns, liquid can splash side to side. These extreme movements add weight and momentum to the truck's movements and may cause drivers to lose control. Side to side surge can cause rollovers; uncontrolled forward momentum can propel a truck into an intersection.
- Some tankers have baffles, or smaller chambers, inside the tanker that help control the liquid movement. Some baffles only minimize the forward and backward movements, while newer baffling systems also control the side to side. Food grade tankers may be open or smooth bore if baffles are too difficult to disinfect.

**HAZARDS OF FLAMMABLE LIQUID TRANSPORT**

1. Storing or transporting flammable liquids—even in "safety cans"—cannot be done safely when the can is placed in the trunk or closed compartments of any vehicle!
2. Filling containers with gasoline while the container is in the bed of a truck or trunk of a car can allow static electric spark to set off gasoline fumes!

The hazard of carrying safety cans in closed compartments was first discovered when the back end of a police car exploded as the officer started to use the radio transmitter.

Substitution can be the best way to avoid or reduce a hazard. Often, though, it is not easy or even possible to find a non-flammable or less flammable substitute to do the job effectively and safely. Start by obtaining safety data sheets (SDSs) for all possible substitute materials. Find out about all the hazards (fire, health, chemical reactivity) of these materials before making any changes.

## HOW TO PROTECT YOURSELF

**CONSIDERATIONS WHEN TRANSPORTING HAZARDOUS LIQUID. Best ways to safely transport.**

- ISO (International Organisation for Standardisation) tank containers are designed to carry and store liquids in bulk. A standard 20ft ISO tank can hold 20,000-26,000 litres of liquid cargo. They are one of the safest options, as they are made from a strong steel and anti-corrosive material for the long life and protection of cargo.
- § Drums and barrels also offer a safe solution for hazardous materials, and these are available in steel, plastic and fibre. Drum containers require a liner or coating for food hygiene safety and for the longevity of the drums themselves. For stability they also require a pallet and strapping for safety. In comparison to ISO tanks, drums and barrels are better suited to much smaller quantities of cargo, with an average capacity of 20 to 250 litres.
- § IBCs (Intermediate Bulk Containers) are a good compromise between the two, with a capacity of between 200 and 1,250 litres. Again, these are safe for the transportation of hazardous materials and are a great size and shape for easy storage and stackability. With a galvanised steel frame around the plastic barrel they have guaranteed stability. They also have the added advantage of top and bottom discharge/loading points and are easy to use without the need to transfer cargo to another storage tank.

**BEST EQUIPMENT FOR CONTAINER MATERIAL.** For the transportation of liquid goods, it is recommended that plastic barrels or steel drums are used. To add extra protection against spillages and contamination, metal and plastic liners can be inserted.

**IS MORE THAN ONE PERSON NEEDED TO MOVE LIQUID CARGO**. For the transportation and lifting of any of the containers mentioned you will require pallets and a forklift truck, or in the case of the ISO the container itself will be loaded onto a vehicle before it is filled.

**PREPARE FOR SPILLAGES AND CLEANING METHODS IN THE EVENT OF ACCIDENTS.** Having a spill response plan, spill kit and an understanding of how to respond in case of this eventuality is a fundamental and necessary requirement of the transportation of hazardous liquids.

**HEALTH AND SAFETY PRECAUTIONS**

For the safest and most sensible transportation and storage of liquid goods, best practice guidelines for machinery, processes and substances should be followed. These processes include:

- Loading and unloading

- Weight and load bearing
- Correct labelling of hazardous cargo
- Transportation and storage guidelines
- Hiring registered and competent carriers to transport goods.

**TYPES OF LIQUIDS**. There are several liquid types that require extra precaution during storage and transportation. These hazardous liquid types include:

- Explosive substances
- Radioactive substances
- Biohazards (toxic substances)
- Flammable liquids
- Corrosives and combustibles.

**LIQUIDS TRANSPORT SAFETY OVERVIEW**

- Get training in safe driving methods for liquid transports. Inspect your tanker truck before each trip. Evaluate your transport methods. Where possible, use baffled liquid tankers to control the liquid movements. It is safer and there is less load movement if you transport a full tank of liquid.
- Know your routes ahead of time to be familiar with hazards. Watch highway and weather conditions and manage your speed accordingly. Slow, deliberate driving minimizes liquid surge and prevents losing control. Check your speedometer frequently and before turning or braking. Be cautious during turns. Round turns to decrease the tanker movement. Don’t cut turns short. Watch for soft berms and shoulders. Where possible, make left turns instead of right turns so the tandem can track behind the truck.

**FINAL WORD**

Staying in compliance with class 3 flammable liquid protocols is important in any organization not only for legal reasons but also for the health and safety of workers and the greater community.