

## **CHAPTER 14 - PART 177**

### **PART 177 - CARRIAGE BY PUBLIC HIGHWAY**

#### **Overview**

Part 177 sets out the specific rules for transportation of hazardous materials by motor carrier (common, contract or private carrier).

Section 177.802 requires carriers to allow DOT enforcement officials to inspect all records, equipment, packaging and containers used to transport hazardous materials. Carriers transporting hazardous materials by motor vehicles are specifically required to comply with the Federal Motor Carrier Safety Regulations in 49 C.F.R. 383, and 390-397. Part 177 also sets out the general rules that a carrier may not transport hazardous materials that are not accompanied by proper shipping papers (Section 177.817).

#### **Training**

There are specific training requirements for drivers of cargo tank vehicles containing flammable cryogenic liquids (Section 177.816).

#### **No Smoking**

In loading and unloading hazardous materials, several common sense rules apply. No one may smoke on or around a vehicle being loaded or unloaded with any flammable, explosive or oxidizing material. Loading and unloading of such materials must be done away from all fires.

#### **Parking Brake**

The vehicle handbrake must be set when loading or unloading any hazardous materials, and the use of tools likely to damage the effectiveness of the closure of the package or container is prohibited.

#### **Attendance**

A cargo tank containing hazardous materials must be attended by a qualified person at all times during loading and unloading. "Attended" means the person is awake, has an unobstructed view of the cargo tank, and is within 25 feet of the

tank. A person is "qualified" if he is aware of the nature of the hazardous material, has been instructed on emergency procedures, is authorized to move the cargo tank and has the means to do so.

## **Load Securement**

Transportation of compressed gases also involves a number of specific requirements. Cylinders must be loaded on floors of motor vehicles that are essentially flat, unless there are racks for maintaining the cylinders in place. Cylinders must be securely lashed in an upright position, loaded in racks attached to the vehicle, packed in boxes or crates designed to prevent overturning, or loaded horizontally. DOT-4L cylinders must be loaded upright. Special rules for transporting cylinders of hydrogen or cryogenic liquids are set out in Section 177.840.

When loading or unloading flammable compressed gas into or out of a cargo tank, the vehicle engine must not be running.

The chart in Section 177.848 sets out requirements for segregation and separation of hazardous materials on a single vehicle, or for loading or storage for transit.

When packages or containers are discovered to be leaking during transportation, the package may be repaired when safe and practicable, or the material may be forwarded to destination or returned in a salvage drum as set out in Section 173.3 and 177.854.

## **Stopped Vehicles**

Stopped vehicles containing cylinders of compressed gases and certain other hazardous materials must have warning devices as set out in Section 392.22.

## **Vehicle Repairs**

In repairing a motor vehicle required to be placarded; heat, flame or spark-producing devices may not be used on the cargo or fuel containment system of the vehicle. 177.854, Repairs may not be conducted indoors unless:

1. The cargo and fuel containment systems are closed and show no signs of leaking;
2. The vehicle can be moved immediately from the building if necessary;
3. The vehicle is removed from the enclosed area upon the completion of work; and

4. For vehicles loaded with explosives or flammables, all sources of flame, spark or glowing heat within the enclosure are extinguished.

### Segregation 177.848

Also, a carrier may not combine in a single motor vehicle (whether cargo tank or van) any combination of hazardous materials that is prohibited by the loading and storage chart in Section 177.848.

The regulations and segregation table are available on-line at:

<http://hazmat.dot.gov/rules.htm>

### SEGREGATION TABLE FOR HAZARDOUS MATERIALS - ABRIDGED

Class or division	2.1	2.2	2.3 gas Zone A	2.3 gas Zone B	3	4.1	4.3	5.1	8 liquids only
Flammable gases, 2.1			X	0					0
Non-toxic, non-flammabile gases, 2.2									
Poisonous gas Zone A, 2.3	X				X	X	X	X	X
Poisonous gas Zone B, 2.3	0				0	0	0	0	0
Flammable liquids, 3			X	0				0	X
Flammable solids, 4.1			X	0					0
Dangerous when wet materials, 4.3			X	0					0
oxidizers, 5.1			X	0	0				0
Corrosive liquids, 8	0		X	0		0	0	0	

0 = Separation required to prevent commingling

X = Do not transport on same vehicle