

## Hazmat—Road Or Rail

### Consider best approach when dispatched

**If suspected HazMat incident, call for HazMat Team &:**

#### **Position apparatus properly:**

- Uphill, upwind, upstream from incident.
- Stop at least 500 ft away from accident (distance should be determined by Dept. protocols, type of incident, etc.).
- Position apparatus pointing away from incident.
- Determine routes of egress if emergency develops.
- Communicate these routes to your crew.

#### **Establish Incident Command structure immediately:**

- Transmit initial size-up to responding crews and communications center.

#### **ISOLATE area & DENY entry, establish outer safety perimeter.**

- Know Your Authority: Stop traffic, evacuate if needed.
- Consider staging incoming apparatus strategically to block access, traffic.
- **You may have to delay rescue to identify hazards.**
- Attempt to identify product, use binoculars, look for identification placards.

#### **Call for HazMat Team**

#### **Identify safe areas**

##### **1 Establish:**

- **HOT**, **WARM**, and **COLD** Zones
- Protective clothing & respiratory protection needed for rescue
- Decon level needed for material (Specific or Field Decon?)
- Evacuation distances if appropriate
- Protect people, environment (Dam, Dike, Divert)

## 2 Consider mapping area & drawing a rough diagram showing:

- Routes of access / egress
- Location of HazMat spill
- Topography and Drainage
- Wind direction
- Exposures
- Evacuation problems, and distances

**If product is unknown, use DOT Guide 111 (Field Guide Page 39) for general safety precautions.**

### If Fire Involved—DO NOT attempt fire attack unless:

- You are properly trained and know product involved.
- You have adequate personnel and resources.
- You have adequate water supply and flow:  
(minimum 500 GPM each point of flame impingement)
- You can act quickly and with minimal safety risk.
- You have evaluated the Risk vs. Benefit of operations.
- There is a specific NEED (Rescue, evacuation, etc.).
- **If ANY answer is NO, EVACUATE and ISOLATE area.**
- Complete rapid evacuation if there is a BLEVE potential.

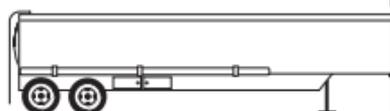
**Think SAFETY with every decision you make...**

**Consider multiple hazard categories in each class.**

## Road Tankers

### FLAMMABLE LIQUID TANKER

- Oval shape, dome cover on top
- **Flammable, combustible, other liquid (not compressed gas)**
- **Usually load and off-load through bottom valves**
- Stainless or aluminum
- Minimal BLEVE potential, rapid burn-through

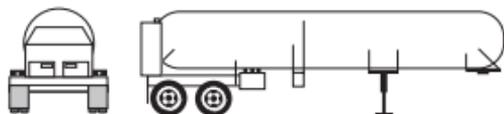


## CORROSIVE LIQUID TANKER



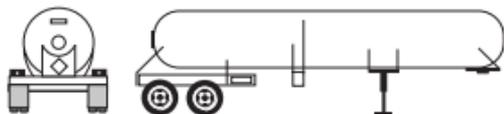
- Round in diameter, with reinforcing rings
- Slightly rounded, blunt ends
- Smaller in diameter than pressurized gas tanker
- Stainless or aluminum construction
- **Loads and unloads through valves at rear**
- **May contain poisons, oxidizers, haz. waste, corrosives**
- Moderate to high BLEVE potential when impinged by fire

## CRYOGENIC LIQUID TANKER



- Very large, round diameter, blunt ends
- Inner and outer tank, like thermos
- **Loading and unloading through "box" at rear**
- **May contain corrosives, flammable gas, poisons, oxidizer**
- Will not have a high pressure gas (usually <25 psi)

## PRESSURIZED / COMPRESSED GAS

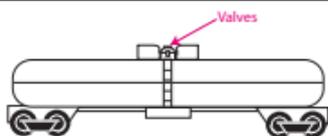


- Perfectly round diameter, steel construction
- Evenly rounded ends
- **Loads, unloads through bottom valves**
- **May have flammable, nonflammable, oxidizer gas**
- **Stay away / stage away from ends of tank**
- **High BLEVE potential when impinged by fire**

## Rail Tankers

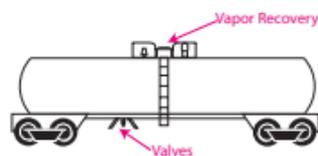
### PRESSURIZED / RAIL CARS

- Always loaded and unloaded from the top
- PSI may range from 100 PSI to 600 PSI
- Valves and gauges are often in a dome at the top
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- Stay away from tank ends
- Position in a defensive manner



### GENERAL SERVICE (NON-PRESSURIZED) CARS

- Unloaded from valves at bottom or vapor recovery
- Can be loaded from dome, bottom valves or vapor recovery connection
- Valve controls may be on top, not in a dome
- PSI may range from 35 – 100



### ID Markings on All Rail Cars (Example: DOT III A 60 AL W I)

DOT	Authorizing agency
III	Class Type
A	Protection systems (or Separation Letter)
60	Tank test pressure (psi)
AL	Tank material if other than steel
W	Construction—Welded
I	Valve and fitting types

# Mixed / Unidentified Cargo, Guide 111

**Use This Guide only until you can identify substance**

## Potential Hazards

### Fire or Explosion

- May explode from heat, shock, friction, or contamination.
- May react violently or explosively with air, water, or foam.
- May be ignited by heat, sparks, or flames.
- Vapors may travel to ignition source and flash back.
- Containers may explode when heated.
- Ruptured cylinders may rocket.

### Health

- Inhalation, ingestion, or contact may cause severe injury, infection, disease, or death.
- High concentration of gas may cause sudden asphyxiation
- Contact may cause burns to skin or eyes.
- Fire may produce irritating or poisonous gases.
- Runoff from fire control or dilution water may cause pollution.

### Public Safety

**For emergency assistance / response**, call shipping paper Emergency Response Number. If not available, Call:  
**CHEMTREC® 1-800-424-9300** (U.S. or Canada)  
**CHEM-TEL, INC. 1-800-255-3924** (U.S. or Canada)  
**CANUTEC 613-996-6666** (Canada, collect calls okay)  
 Military Shipment Emergencies:  
 1-703-697-0218 (Explosives, Ammunition)  
 1-800-851-8061 (All other dangerous goods)

- Isolate spill or leak area immediately for at least 50 – 100 meters (160 – 330 feet) in all directions.
- Keep unauthorized personnel away.
- Stay upwind, and out of low areas.

### Protective Clothing

- Wear positive pressure SCBA
- Structural firefighter's clothing provides limited protection.

### Evacuation (See page 40 for Guidelines)

- If tank, rail car, or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 Mile) in all directions.
- Consider evacuation for 800 m (1/2 Mile) all directions.

### Emergency Response—Guide 111

#### Fires

**CAUTION:** Material may react with extinguishing agent.

#### SMALL FIRES:

- Dry chemical, CO<sub>2</sub>, water spray, or foam.

#### LARGE FIRES:

- Move containers from area if you can do it without risk.

#### TANKS INVOLVED IN FIRE:

- Cool containers with flooding quantity until after fire is out.
- Do not get water inside containers.
- Withdraw immediately in case of rising sound from venting safety devices or tank discoloration.
- Always stay away from the ends of tanks.

## Spill or Leak

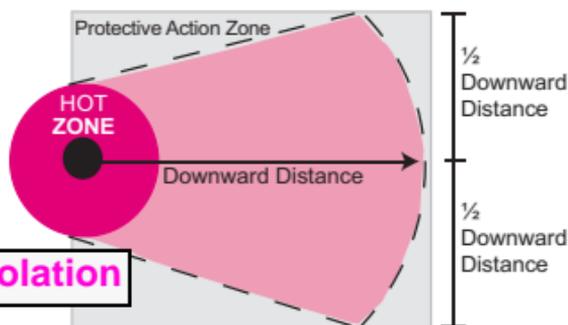
- Do not touch or walk through spilled material.
- Eliminate all ignition sources.
- Ground all handling equipment.
- Keep combustibles away from spilled material.
- Use water spray to reduce vapors or divert vapor cloud.
- Prevent entry into waterways, sewers, basements, or other confined areas.
- Use absorbent materials for small spills.
- Dike far ahead of large spills.

## First Aid

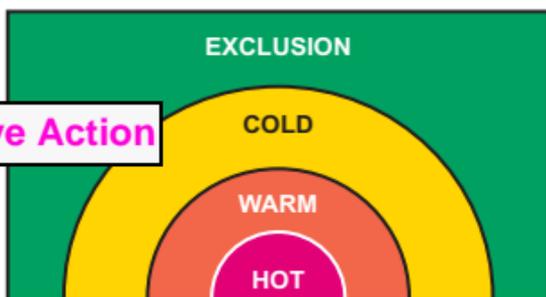
- Move victim to fresh air, call emergency medical care.
- If not breathing, give artificial respiration.
- **If victim inhaled or ingested the substance, use mask with 1-way valve or BVM.**
- If patient experiences difficulty breathing, give oxygen.
- In case of contact with material, immediately flush skin or eyes with running water for at least 20 mins.
- Remove and isolate contaminated clothing and shoes at the site.
- Keep victim quiet and maintain normal body temperature.
- Ensure that medical personnel are aware of material involved and take precautions to protect themselves.

**Always notify area HazMat Response Teams.**

## Initial Isolation / Protective Action



### Initial Isolation



### Protective Action

#### 1 Hot (Contamination) Zone

- ✓ Contamination or danger of explosion is actually present
- ✓ Personnel must wear appropriate gear
- ✓ Limit number of rescuers to those absolutely necessary

#### 2 Warm (Control) Zone

- ✓ Area surrounding the contamination zone
- ✓ Vital to preventing spread of contamination
- ✓ Personnel must wear appropriate protective gear
- ✓ Life-saving emergency care and decontamination are performed

#### 3 Cold (Safe) Zone

- ✓ Normal triage, stabilization and treatment performed
- ✓ Rescuers must shed contaminated gear before entering the cold zone
- ✓ I/C and Command Post are normally located within the Cold Zone

#### 4 Exclusion Zone—Public Area

- ✓ Zone for the public and non-operational personnel (e.g. media, public officials)