

Workplace Health and Safety Queensland

Road freight transport industry - Dangerous goods including flammable or combustible liquids

The transportation, storage and handling of dangerous goods including flammable or combustible liquids can involve high risks. If these substances are mishandled the risk of injury and property damage is increased. Those at risk include drivers, depot employees and members of the public.

Dangerous goods are defined in the Australian Dangerous Goods (ADG) Code according to the most significant risk posed by the substance (referred to as Class). This risk depends on the properties of the substance. Table 1 lists examples of substances in the various Classes.

Depots that store flammable or combustible liquids should be licensed by their local authority.

Hazards in the transport industry associated with the handling and storage of dangerous goods include:

- Radiated heat
- Fire and explosions
- Chemical burns
- Asphyxiation
- Inhalation or skin absorption of toxic substances
- Environmental harm.

Some possible solutions

Vehicles

It is important that vehicles used for transporting dangerous goods are:

- Suitable for the task
- Free from any defect that may create a risk during the transportation
- Clean

- For a tank vehicle, be free from other dangerous goods that are incompatible with the dangerous good being transported
- For a vehicle used to transport freight or tank containers, be fitted with equipment for securing the container onto the vehicle e.g. twist locks (More information in Australian Standard 3711.10).

Equipment that is attached to the vehicle and used for loading or in transferring dangerous goods also needs to be:

- Suitable for the purpose
- Free of defects that are likely to increase risks in the loading or transferring process.

When you are transporting dangerous goods the Australian Dangerous Goods Code requires that:

- Goods are labelled and warning signs displayed
- Drivers of vehicles carrying dangerous goods in bulk have a current licence issued through Queensland Transport and
- Dangerous goods incompatible with other products such as foodstuff and other classes of dangerous goods are stored separately.

Employers are also responsible for ensuring drivers are qualified to transport dangerous goods. Before accepting a consignment, drivers should receive written information from the supplier/consignee detailing:

- The identity and quantity of the substance to be transported

- The shipping documents which must be legible, in English and had the consignor's name and telephone contact number
- Emergency response measures to be used in the event of an accident (emergency information is required for all placard loads).

When the vehicle is carrying a placard load it is required to carry (or have installed):

- Personal Protective Equipment (PPE) stowed in an accessible area of the cabin
- Fire extinguisher/s
- Eyewash kit of at least 250ml and be filled and ready for use
- Three double-sided portable warning devices that are clean and in good condition
- Gas detectors for the transportation of un-odourized LP Gas

Examples of good engineering practices for tank vehicle loading facilities include:

- Collision protection e.g. to prevent damage to tank filling devices
- Clearly marked vehicle access
- Spillage control e.g. bunds
- Flow rates controls for the filling of the tank. When the filling is nearly completed the fill rate should be reduced to minimise hydraulic shock when filling stops
- Emergency shut off/shutdown systems and procedures
- Earthing and bonding or open hatch filling where there is a possibility of static electricity build-up

Loading vehicles

When filling tanks with flammable liquids:

- Park the vehicle (tank containers, tank vehicles etc) and secure them against rolling away
- Make tank containers safe from collision and/or unintentional movement
- Switch off the vehicle engine unless it is required to operate pumps or other devices for loading the vehicle
- Ensure that filling and emptying pipes not located permanently on the tank are empty after filling and during transport

- Remove any contamination or hazardous residues of the contents adhering to the loaded tanks before transport
- With top loading tanks : provide a platform with an anti-slip surface and fall protection or prevention measures in place for the operator
- When using a bottom loading system, good design features include:
 - A preset meter for slow start/slow finish of transfer
 - A dry-break coupling between the loading hose and vehicle tank
 - Automatic overfill protection
 - A vapour relief system to discharge vapours
 - An integrated bond cable between the filling facility and vehicle tank.

When loading and unloading containers of dangerous goods using a forklift it is important to make sure that:

- The operator of the forklift is trained and holds a certificate in forklift operation
- There is ample room for the forklift to manoeuvre so that the forklift does not damage the dangerous goods containers
- The pallets are not overloaded and that they are stacked properly
- The load on the forklift is stable
- Gas cylinders are kept in an upright position and secured (chained into place or kept in a specially designed cage and pallet for the transport of cylinders)
- Operators are trained in emergency procedures
- There is a procedure in place for spill management.
 - Keep equipment and materials for clean-ups at the premises. It is important to be sure the equipment/material is enough to cope with any spills that may result from damage to the largest packages/containers kept at the workplace.
 - Reporting of spills will assist you to be sure that you have the management of spills under control.

Further information on Dangerous Goods can be found on the Emergency Services website at www.emergency.qld.gov.au/chem.

Australian Standards AS1940 – The storage and handling of flammable and combustible liquids

Information on licensing can be found on the Queensland Transport website at www.transport.qld.gov.au.

For more information on dangerous goods and other workplace health and safety issues visit www.worksafe.qld.gov.au or call 1300 369 915.

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