

SAFETY INSTRUCTIONS FOR ROAD TRANSPORT

Hazard number	336
UN number	1230
ADR classification	Class 3, G.I. II
Hazard symbols	 

General information

Methanol is also known as methyl alcohol.

Derived from natural gas, methanol is a hydrocarbon composed of carbon, hydrogen and oxygen.

Its chemical formula is CH₃OH (or, abbreviated, MeOH or MetOH).

Flammable and toxic liquid.

Colourless liquid with an alcoholic odour, highly flammable and soluble in water.

At room temperature, it appears as a colourless liquid with a characteristic odour.

It is very volatile and extremely flammable. The methanol flame is invisible.

At every stage of transport and distribution, methanol must be stored safely and handled responsibly. This minimises the risk to persons and the environment and maintains product quality.

The most common means of transporting methanol in large quantities all over the world are ships, barges, railways, trucks and gas pipelines.

Contamination prevention

When transferring or storing methanol, it is preferable to use dedicated systems. Non-dedicated systems should be cleaned, washed with powerful jets of water and examined by taking samples to ensure product integrity.

The equipment should be clearly labelled to indicate that it is to be used only for methanol. When not in use, the equipment must be protected from contamination.

Materials for containment and storage

Methanol does not corrode most metals at room temperature.

Lead, magnesium and platinum are highly perishable materials when in contact with methanol.

Mild steel is the most widely used material for the construction of tanks and tankers for storage and transport.

Plastic can be used for short-term storage of methanol, but its long-term use is not recommended due to its deteriorating effects and the subsequent risk of contamination.

Cleaning and maintenance

All means of transport and methanol tanks must be inspected for cleanliness and their mechanical state before loading.

Ignition temperature

The ignition temperature is the minimum temperature at which the vapour pressure of a liquid is sufficient to form a flammable mixture with air on the surface of the liquid. Pure methanol has a flash point of 12°C.

Lower and upper explosion limits

The lower explosion limit of a flammable liquid is defined as the minimum concentration of flammable gas above which there is flame propagation.

The lower explosion limit of methanol is 6% by volume.

The upper explosion limit of a flammable liquid is defined as the maximum concentration of flammable gas below which there is flame propagation.

The upper explosion limit of methanol is 36% by volume, and corresponds to a methanol temperature of 41°C. In the temperature range of 12°C to 41°C, methanol produces an explosive vapour concentration when in contact with an ignition source.

Auto-Ignition Temperature

The auto-ignition temperature of a substance is the minimum temperature required for spontaneous combustion in the absence of an external ignition source.

Methanol has an auto-ignition temperature of 470°C.

Nature of the hazard

- Very flammable and volatile liquid
- Risk of vapour explosion when mixed with air, especially in empty, uncleaned containers
- Heating causes pressure build-up with severe hazard of bursting and explosion
- Inhaling vapours has narcotic effects. In the event of severe intoxication, the consequences can be fatal

Environmental Protection - Biodegradation /Water Toxicity

Methanol readily biodegrades in water and soil.

At high concentrations (>1%) in fresh or salt water, methanol can have short-term harmful effects on aquatic life in the vicinity of the spill.

Treatment and disposal

Possible treatment processes as a countermeasure to spills include biological degradation, reverse osmosis, carbon adsorption and stripping with steam and air.

Large quantities of waste methanol can be disposed of at authorised disposal companies or recovered by filtration or distillation.

Waste methanol or water contaminated with methanol must never be discharged directly into the sewage system or surface water.

Personal protection

- Full face gas mask with type A organic vapour filter (brown)
- Eyewear with full eye protection
- Rubber or plastic gloves, boots and protective clothing
- Eyewash bottle containing saline and pure water

General measures to be taken by the driver

- Immediately notify the Police and Fire Brigade
- Stop the engine
- Do not use flames and do not smoke
- Mark the hazard using road signs and warn other users and passers-by
- Inform of the hazard and remove unauthorised persons from the hazard area and stay upwind

Additional and/or special measures to be taken by the driver

- Stop leaks if the safety of the operator is not jeopardised by using non-sparking tools
- Preventing the product from seeping into sewers, cellars, excavations or ditches
- Contain and absorb liquid spillage using sand, earth or other suitable materials
- If the product has run off into a water course or sewer or has contaminated soil or vegetation, notify the authorities (Police, Fire Brigade, etc.)

Fire

- In the event of a contained fire on the vehicle, cool fire-exposed containers by spraying with water spray and extinguish with resistant alcohol foam, chemical powder or water spray
- Do not intervene in the event of a fire involving the load

First aid

- Remove the victim from the polluted area; calm them
- If the substance has affected the eyes, wash immediately with plenty of water; continue treatment until medical assistance is provided
- Remove contaminated clothing immediately and wash with plenty of water
- Seek medical attention when experiencing symptoms attributable to inhalation or contact of the substance with the skin or eyes
- In the event of impaired cognition: Place in Recovery Position
- In the event of respiratory disorders, administer oxygen and artificial respiration

Additional information can be provided by:

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