Biodiesel is a delicate product which is much more prone to react to environmental influences compared to its fossil counterpart. Besides storage, transport has a crucial influence on the quality of Biodiesel. This leaflet informs on legal provisions, transport regulations and the handling of Biodiesel in transit.

Difficulties may arise due to contamination with other fuels or by water ingress, for example. Therefore, to avoid such issues, it is necessary to first of all subject transport vehicles and containers to a thorough inspection. For that the owner/driver of the transport vehicle needs to take on responsibility. The selection of suitable packaging is also a decisive factor for quality and safety.

**Classification, Labelling and Packaging of Biodiesel**

Currently the classification, labelling and packaging of substances and mixtures are specified by temporary regulations which will remain in force until 1 June 2015. At present regulation (EG) 1272/2008 stipulates classification, labelling and packaging. In addition, the classification of any hazardous potential must be classified according to regulation 67/548/EWG which will also be valid until 1 June 2015. Afterwards regulation (EG) 1272/2008 will apply exclusively.

As a result the following applies for Biodiesel:

- according to Regulation 67/548/EWG: no classification, no particular labelling required
- according to Regulation (EG) 1272/2008 (CLP): no classification required

Since the REACH Regulation (EG) 1907/2006 – (REACH: Registration, Evaluation and Authorisation of Chemicals) – does not classify fatty acid methyl ester as hazardous substance either, the issue of a safety data sheet (MSDS, material safety data sheets) is not imperative. Nonetheless, on a voluntary basis many producers compile information for their customers in the form of product data sheets comprising the relevant properties (toxicity, degradability potential, water hazards, chemical and physical properties), which can provide rescue staff with valuable information in case of accidents.

**Ways of Transport**

There are various possibilities for the transport of Biodiesel: by road, rail or water. The official labelling of Biodiesel is essential at any rate independent of the selected way of transport.

For the transport by road (ADR/RID), inland waterways (ADN/ADNR) and maritime (IMDG) the official denomination for Biodiesel is FAME (Biodiesel). Due to its flash point being at least 101 °C (DIN EN 14214) and other safety-relevant features, Biodiesel is not classified ‘hazardous substance or material’ with regard to transport by road, rail or water. Classification is not required.

The following vehicles can be used for the transport of Biodiesel:

1. Tankers
2. Vehicles carrying demountable tanks
3. Carrier vehicles for battery tanks > 1,000 l
4. Vehicles intended for the carriage of tank containers
5. Rail tanks

The additional minimum standard prerequisites of such vehicles must be

- Valid qualification approval
- Certification according to ADR/RID
- Inspection and approval according to § 29 StVZO (German Road Traffic Licensing Regulations)

For water transport, inland waterway vessels are used predominantly but sea-going ships may also be used if they comply with the legal requirements.
Note
The admixture of small quantities of products with a lower flash point (such as gasoline, Diesel fuel or methanol) can already reduce the flash point considerably below 100 °C and thus lead to a classification as hazardous substance or material.

Measures to Safeguard the Quality of Biodiesel

In order to safeguard the Biodiesel quality against any influences during transport it is essential to observe the measures as described hereafter to avert any quality impairment. For that reason particular attention must be paid to transport vehicles and containers. The following aspects are of major importance:

• Water ingress into the product must be ruled out by suitable measures (e.g. roofed filling stations) for every step of the transport chain. If the product is passed on at a filling station the manhole must be free of water. In the interest of the fuel quality unnecessary transfer steps must be avoided by principle.

• Non-iron metals (with the exception of noble metals) and their alloys must be avoided in the entire system of the means of transport.

• Zinc-plated tanks and/or containers are not suitable.

• Prior to loading Biodiesel the tanker or transport container must be cleaned thoroughly if it contained the following before:
  - Acids or lyes of every kind, also mixtures thereof
  - All chemicals
  - Oxidants
  - Glycerol, vegetable oils
  - Products with a flash point of < 60 °C (easily inflammable, inflammable or extremely inflammable)

• The mixture of Biodiesel with fossil combustibles or fuels must be ruled out.

• In case the tanker is equipped with a full hose system for loading, the entire system including the total distance must be rinsed properly before loading.

• The chambers/tanks of the means of transport must not contain any water or contamination. This also applies to the unfilled chambers/tanks if their complete separation cannot be safely guaranteed.

• Especially in case of sea-going transport it must be observed that the tanks do not contain any remains of unsuitable pre-loads, water or solid contamination. If necessary, an independent inspector should be consulted.

The measures to assure the quality of Biodiesel during transport must be arranged so that no remains within the system of the transport vehicle and most of all no product remains of previous loads lead to admixture and thus deterioration of the Biodiesel quality or any change of the safety-relevant properties (e.g. flash point). The unintended filling of the tanks with other fuels can be avoided by appropriate labelling.

In case retain samples are taken during the loading of Biodiesel into the tanker or during discharge of the commodity at the customer’s site, a sampling protocol – signed by both parties – should be issued in order to document the circumstances at the time of sampling. In case of doubt those samples can be considered for arbitral analyses. In order to take representative samples the requirements of DIN 51750 must be abided by during sampling.

Important!
These recommendations summarize the experiences made so far by AGQM and its members. They were compiled to the best of AGQM’s knowledge with the purpose to facilitate the handling of Biodiesel. However, there is no claim to completeness. The individual circumstances with regard to the business and transport situation must always be assessed and can therefore not be considered in this context.