



Department for Transport

Carriage of Dangerous Goods and Transportable Pressure Equipment Regulations 2009 as amended

GUIDANCE NOTE NUMBER: 16

Applicable in Great Britain and Northern Ireland

This guidance note should not be taken as a complete or definitive statement of the law. It is not intended as a substitute for detailed legal or other professional advice based on specific circumstances. The Department for Transport accepts no liability for any loss or damage caused by reliance on the contents of this guidance note.

In international carriage, Competent Authorities of other states may have different interpretation of Dangerous Goods regulations.

Are biofuels dangerous goods?

Issue date: 7 January 2013

Due for revision: 7 January 2015

Current legal text(s):

The Carriage of Dangerous Goods and Use of Transportable Pressure Equipment
Regulations 2009 as amended

Interpretation:

In recent years, many new biofuels have been developed, each with differing chemistries and hazard properties. Some are not classed as dangerous goods. Those that are may be classified under different UN numbers. The three most common biofuels in use are covered by this guidance note.

Biodiesel

Biodiesel is composed of vegetable-based oil, usually fatty-acid esters. This can be combined with mineral-based diesel to produce a mixture. A fuel classed as B5 would contain 5% biodiesel and 95% mineral diesel. Fuel classed as B100 would be composed of 100% biodiesel.

Biodiesel has a higher flashpoint than mineral diesel and this flashpoint is the determining factor in whether biodiesel is classed as dangerous goods or not. Biodiesel with a flashpoint above 100°C is not classified as dangerous goods. Biodiesel with a flashpoint below 100°C and above 60°C is classified as UN 1202. In practice, most biodiesels have a flashpoint of more than 100°C.

Bioethanol

Bioethanol is produced as a substitute for petrol. This fuel is composed of ethanol, usually mixed with petrol. A fuel classed as E5 would contain 5% ethanol and 95% petrol. Fuel classed as E100 would be composed of 100% ethanol.

Bioethanol is classed as a dangerous good. Because ethanol (unlike petrol) is soluble in water, different fire-fighting techniques are required in the case of an accident. As a result, classification can be in one of three UN numbers:

Where ethanol is more than 10% of a fuel mixture: UN 3475 (ETHANOL AND GASOLINE MIXTURE or ETHANOL AND MOTOR SPIRIT MIXTURE or ETHANOL AND PETROL MIXTURE, with more than 10% alcohol).

Where the ethanol is 10% or below of the fuel mixture: UN 1203 (MOTOR SPIRIT, or GASOLINE or PETROL).

When the fuel is 100% ethanol (E100): UN 1170 (ETHANOL (ETHYL ALCOHOL)).

Vegetable Oil

A further fuel in use is vegetable oil. This has a flashpoint above 100°C, so is not classed as a dangerous good.