

DISCUSSION PAPER COMMENTS

2.9

Q. What is your view on the need to develop a mandated national fuel quality standard for biodiesel.

A. Absolute necessity. Consumers need to have confidence in the product they purchase, and the suppliers need to be confident that the product being supplied will perform satisfactory and not cause any detrimental effect to vehicles, etc. There also needs to be some control over the quality of product being supplied to the market.

Q. What is your view on harmonization of any Australian biodiesel standard with European and/or US biodiesel specifications.

A. Should be harmonized where possible to achieve the best possible environmental/performance balance. European standard appears more comprehensive at this stage, and therefore may be the best to lean towards, taking into consideration applicability of tests, climate, etc.

3.2

Q. Do you consider that an Australian standard for biodiesel should prescribe feedstocks or production technologies, or should the standard only address characteristics and composition of biodiesel.

A. There should be a standard for feed stocks, and perhaps production technologies. It is known that some feed stock properties can effect emissions, performance, climatic suitability, etc. For these reasons there should be max/min specification on feed stocks for properties such as carbon chain length, number of double bonds, etc.

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Lubricity – An important issue in final product. Would be good if an appropriate specification could be set to avoid detrimental effect on engine components.

Fuel economy – Probably not so much an issue provided fuel is suitably priced.

Storage – Provided suitable limits are set for properties such as Oxidation stability, Acid number, Cold filter plugging point, etc, then storage should not be a problem provided that the limits are not exceeded. It appears that there are also additives available to prevent/rectify any problems in this area.

Additives – These could be useful considering the inherent problems of oxidation, pour point properties, etc.

Water – Investigation into maximum permissible water content needs to be carried out to determine what is a safe level in regard to performance. Biodiesel would probably be able to hold more moisture than mineral diesel.

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Q. What are your views on biodiesel blends.

A. Provided that approved emission and performance criteria are met, blend ratios should not be a problem. Recommend that approximate blend ratios be displayed at point of sale.

6.1 - Sulphur

Q. (a) Appropriate specification for sulphur in biodiesel.

A. As per current diesel spec.

(b) Appropriate test method.

- A. Current methods stated for diesel fuel. Precision and bias could be established for biodiesel, and maximum limits set for whatever methods are found to be suitable. Most accurate method is not necessarily the appropriate.

6.2 – Carbon Residue

Q. Appropriate specification.

- A. As per current diesel specification.

Q. Appropriate test method.

- A. ASTM D189 and ASTM D524. Maximum level may need to be established for each method as is the case currently with mineral diesel.

6.3 – Phosphorus

Q. Appropriate specification

- A. As per current diesel specification.

Q. Appropriate method.

- A. As per current diesel specification.

6.4 – Ester content

Q. Appropriate specification.

- A. Run with current European standard, as work has already been done over there, and appears to be good starting point for Australia rather than try to start from scratch. Appears to be important as amount of certain esters effects emissions, performance, etc.

Q. Appropriate method

- A. Run with European recommendation.

6.5 – Viscosity

Q. Appropriate specification.

- A. Probably the same as current diesel specification, due to lubricity, atomization patterns, etc.

Q. Appropriate method.

- A. ASTM D445

6.6 – Cetane

Q. Appropriate specification.

- A. Needs to be determined in regard to performance.

Q. Appropriate method.

- A. As per current diesel specification.

6.7 – Sulphated ash

Q. Appropriate specification/method.

- A. As per current diesel specification

6.8 – Total contamination

Q. Appropriate specification

- A. 0.01% w/w, based on current specification of diesel fuel.

Q. Appropriate method

- A. ASTM D5452

6.9 – Acid value

Q. Appropriate specification/method.

A. As per current diesel specification.

6.10 – Iodine

Provided it is an accurate indicator, should probably start off in line with European recommendation.

6.11 Linolenic acid methyl ester

Start with European recommendation

6.12 Mono and Di Glycerides

Start with European/US recommendation

6.13 Triglycerides

Start with European/US recommendation

6.14 Free Glycerol

Start with European/US recommendation

6.15 Total Glycerol

Start with European/US recommendation

6.16 Alkaline metals

Start with European recommendation

Methods: ICP, AAS

6.19 Alcohol content

Q. Appropriate specification

A. Start with European/US recommendation

Q. Appropriate method

A. Gas Chromatography

6.20 Cloud point

As per current diesel specification, depending on climate

6.21 Cold filter plugging point

As per current diesel specification due to available additives, provided they are compatible.

6.22 Distillation

Useful for identification of contaminants. Suitable distillation range would need to be established for 100% biodiesel.

6.23 Calorific value

Useful for operability (Method: ASTM D4809/240)

6.24 Density

Appropriate if found to effect performance. (ASTM D1298)

6.25 Flash point

Appropriate for dangerous goods classification, perhaps maximum for operability. (ASTM D93)

6.26 Dissolved moisture

Limit needs to be set to determine what level becomes a problem.

6.27 Free water and sediment

As per current diesel specification

6.28 Corrosion

As per current diesel specification

7 Alcohol

Methanol appears to be more appropriate according to the figures supplied.