



***AUSTRALIAN FARMERS FUEL
PTY LTD***

Comment on Australian Biodiesel Standard Discussion Paper

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

A mandated national Biodiesel quality standard is vital for the development of the industry.

2. *What is your view on the harmonisation of any Australian biodiesel standard with European and/or US biodiesel specification?*

We support the harmonisation of the Australian biodiesel standard with ASTM D6751 (the US biodiesel specification). Most vehicles/engines in the Australian diesel fleet are of American design or manufacture. There is a wealth of information relating to biodiesel emissions, performance and stability that has arisen from tests on American biodiesel. In addition, most of the Australian biodiesel trials, including our own trials with the SA Government, have used biodiesel produced to ASTM D6751 specifications. To implement a significantly different Standard in Australia would, in our opinion, present a needless market barrier to the fuel, in that no existing familiarity of the fuel would be present.

3. *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?*

The Standard should address only characteristics and composition of biodiesel.

4. *Do you wish to comment on any aspects of the impacts of biodiesel use in this chapter? (CHAPTER 4)*

No.

5. *What are your views on biodiesel blends?*

Biodiesel blends have been shown to minimise the solvent characteristics of biodiesel, whilst maintaining the beneficial lubricity, combustibility and biodegradability effects of the fuel.

We fully support the blending of biodiesel with petroleum diesel. However this biodiesel blend must be suitably labelled - not only to inform the consumer of the presence of biodiesel, but also to inform the customer of the other components of the blend.

6. *Stakeholders are specifically requested to provide comment on:*

(a) an appropriate Australian specification for sulphur in biodiesel; and

The sulphur specification should be the same as for ultra low sulphur diesel (ULSD), ie 50 ppm max, in accordance with the forthcoming Global Fuel Standards.

(b) an appropriate test method for determining the sulphur content of biodiesel.

ASTM D 5453

7. *Stakeholders are specifically requested to provide comment on:*

(a) An appropriate Australian specification for carbon residue in biodiesel; and

Carbon residue should be specified at 0.05% maximum.

(b) An appropriate test method for determining carbon residue in biodiesel.

ASTM 4530

8. *Stakeholders are specifically requested to provide comment on:*

*(a) An appropriate Australian specification for phosphorous content in biodiesel;
and*

Phosphorous content for B100 should be 10 ppm maximum.

(b) An appropriate test method for determining phosphorous content in biodiesel.

ASTM D4951

9. *Stakeholders are specifically requested to provide comment on:*

(a) An appropriate Australian specification for ester content in biodiesel; and

We suggest that “ester content” not be specified in the Australian Standard for biodiesel.

(b) An appropriate test method for determining ester content in biodiesel.

N/A

10. *Stakeholders are specifically requested to provide comment on*

*(a) An appropriate Australian specification for kinematic viscosity of biodiesel;
and*

Kinematic viscosity for B100 (when used as B100) should be minimum 1.9 (from ASTM) and maximum 5.0 (from DIN). Kinematic viscosity of B100 when used as blend stock should have maximum 6.0, in keeping with ASTM specification. ($\text{mm}^2\text{sec}^{-1}$ at 40°C).

(b) An appropriate test method for determining kinematic viscosity of biodiesel.

ASTM D445.

11. *Stakeholders are specifically requested to provide comment on:*

*(a) An appropriate Australian specification for the cetane number of biodiesel;
and*

B100 should have cetane rating minimum of 47. A maximum cetane rating need not be specified.

(b) An appropriate test method for determining the cetane number of biodiesel.

ASTM D613

12. *Stakeholders are specifically requested to provide comment on:*

*(a) an appropriate Australian specification for sulphated ash content of biodiesel;
and*

Sulphated ash maximum 0.02% by mass.

*(b) an appropriate test method for determining the sulphated ash content of
biodiesel.*

ASTM D848

13. *Stakeholders are specifically requested to provide comment on:*

(a) An appropriate Australian standard for total contamination of biodiesel; and

We suggest that total contamination not be specified in the Australian Biodiesel Standard. We suggest that a specification for “appearance” should be entered, with the requisite “clear and bright” as for petroleum-based fuels. Other evidence of contamination would be implicit in results from other specifications tests within the Standard.

(b) An appropriate test method for determining total contamination of biodiesel.

N/A

14. Stakeholders are specifically requested to provide comment on:

(a) *An appropriate Australian standard for acid number/value of biodiesel; and*

Acid number of B100 should be 0.80 mg KOH/g.

(b) *An appropriate test method for determining acid number/value of biodiesel.*

ASTM D664

15. Stakeholders are specifically requested to provide comment on:

(a) *An appropriate Australian standard for iodine value/number of biodiesel; and*

We suggest that Iodine Number not be specified. Specifications for viscosity and cold filter plugging point are sufficient.

(b) *An appropriate test method for determining iodine value/number of biodiesel*

N/A.

16. Stakeholders are specifically requested to provide comment on:

(a) *An appropriate Australian specification for linolenic acid methyl ester content in biodiesel;*

Linolenic Acid Methyl Ester content need not be specified.

(b) *An appropriate test method for determining linolenic acid methyl ester content in biodiesel;*

N/A

(c) *An appropriate Australian specification for polyunsaturated (≥ 4 double bonds) methyl ester content in biodiesel; and*

Polyunsaturated fatty acid methyl ester content need not be specified.

(d) *An appropriate test method for determining polyunsaturated (\geq double bonds) methyl ester content in biodiesel.*

N/A

17. *Stakeholders are specifically requested to provide comment on:*

(a) An appropriate Australian specification for mono- and diglyceride content in biodiesel;

We suggest that Mono- and Di-glyceride content need not be specified. Instead, (mono- + di- + tri-glyceride) can be calculated from (total glycerol-free glycerol), or otherwise limited by viscosity/cloud point specifications.

(b) An appropriate test method for determining mono- and diglyceride content in biodiesel;

N/A

18. *Stakeholders are specifically requested to provide comment on:*

(a) An appropriate Australian specification for triglyceride content in biodiesel;

Triglyceride content should not be specified. See 17 (a).

(b) An appropriate test method for determining triglyceride content in biodiesel;

N/A

19. *Stakeholders are specifically requested to provide comment on:*

(a) An appropriate Australian specification for free glycerol content in biodiesel;

Free glycerol content should be 0.02% maximum by mass.

(b) An appropriate test method for determining free glycerol content in biodiesel;

ASTM D6584

20. *Stakeholders are specifically requested to provide comment on*

(a) An appropriate Australian specification for total glycerol content in biodiesel;

Total glycerol content should be 0.25% maximum by mass.

(b) An appropriate test method for determining total glycerol content in biodiesel;

ASTM D6584

21. *Stakeholders are specifically requested to provide comment on:*

(a) An appropriate Australian specification for alkaline metal content in biodiesel;

We suggest that the specification for Sulphated Ash be sufficient for limiting alkaline metal content.

(b) An appropriate test method for determining alkaline metal content in biodiesel;

We suggest that the test for Sulphated Ash be sufficient for determining alkaline metal content.

22. *Stakeholders are specifically requested to provide comment on*

(a) An appropriate Australian specification for biodiesel thermal stability;

We suggest that no specification be listed for biodiesel thermal stability.

(b) An appropriate test method for determining thermal stability in biodiesel;

N/A.

23. *Stakeholders are specifically requested to provide comment on:*

(a) An appropriate Australian specification for oxidation stability in biodiesel;

We suggest that no specification be listed for biodiesel oxidation stability.

(b) An appropriate test method for determining oxidation stability in biodiesel;

N/A

24. *Stakeholders are specifically requested to provide comment on:*

(a) An appropriate Australian specification for alcohol content in biodiesel;

We suggest that alcohol content need not be specified. Any significant alcohol (or other such additive) will be limited by flashpoint and cetane tests.

(b) An appropriate test method for determining alcohol content in biodiesel;

N/A

25. Stakeholders are specifically requested to provide comment on:

(a) *If needed, an appropriate Australian specification for cloud point in biodiesel;*

Rather than “cloud point”, we suggest “Cold Filter Plugging Point” be specified.

(b) *An appropriate test method for determining cloud point in biodiesel;*

N/A.

26. Stakeholders are specifically requested to provide comment on:

(a) *If needed, an appropriate Australian specification for cold filter plugging point in biodiesel;*

For standard use, Cold Filter Plugging Point should be addressed as per Petroleum Diesel, according to the climate zone. That is, CFPP should be the same for biodiesel as for petroleum diesel at point of sale.

For specific use, CFPP may be specified according to limit agreed upon by supplier/customer. In this case, CFPP must be accurately stated upon supply.

(b) *An appropriate test method for determining cold filter plugging point in biodiesel;*

ASTM D4539

27. Stakeholders are specifically requested to provide comment on:

(c) *If needed, an appropriate Australian specification for distillation temperature of biodiesel;*

We suggest that a distillation temperature need not be specified.

(d) *An appropriate test method for determining distillation temperature of biodiesel;*

N/A

28. Stakeholders are specifically requested to provide comment on:

(a) *If needed, an appropriate Australian specification for biodiesel calorific value; and*

We suggest that calorific value for biodiesel need not be specified.

(b) *An appropriate test method for determining biodiesel calorific value;*

N/A

29. Stakeholders are specifically requested to provide comment on:

(a) *If needed, an appropriate Australian specification for biodiesel density;*

We suggest that biodiesel density need not be specified.

(b) *An appropriate test method for determining biodiesel density;*

N/A

30. Stakeholders are specifically requested to provide comment on:

(a) *An appropriate Australian specification for biodiesel flash point; and*

We suggest that biodiesel flash point should be specified at 100°C minimum.

(b) *An appropriate test method for determining the flash point of biodiesel;*

ASTM D93-80

31. Stakeholders are specifically requested to provide comment on:

(a) *If needed, an appropriate Australian specification for dissolved water content in biodiesel;*

Dissolved water content should not be specified. Biodiesel is hygroscopic, and dissolved water does not present any operability issues.

(b) *An appropriate test method for determining dissolved water content in biodiesel;*

N/A

32. Stakeholders are specifically requested to provide comment on:

(a) *an appropriate Australian specification for water and sediment content in biodiesel;*

Water and sediment should be specified at 500mg/kg maximum by mass.

(b) *an appropriate test method for determining water and sediment content in biodiesel;*

ASTM D2709

33. *Stakeholders are specifically requested to provide comment on:*

(c) an appropriate Australian specification for copper strip corrosion in biodiesel;

Copper Strip Corrosion should be specified at No. 3 Max

(d) an appropriate test method for determining copper strip corrosion in biodiesel;

ASTM D130

34. *Stakeholders are requested to comment on the issue of alcohol feedstock for the production of biodiesel and impacts on vehicle emissions and engine operability.*

It is our position that the alcohol feedstock need not be specified. We support the use of other alcohols (such as ethanol, propanol, butanol) in the transesterification process. The resulting esters from these alcohols have superior cold weather properties.

Specifically, stakeholders are asked to comment on the need, if any, to specify the alcohol that is used to produce biodiesel (as in the EU standard).

There is no need to specify any alcohol.

35. *Stakeholders are requested to comment on the impacts of blending biodiesel with diesel on engine operability and vehicle emissions.*

Blending biodiesel with petroleum diesel reduces the solvent characteristics of biodiesel (thereby reducing the requirement for suitable hoses/seals; and also reducing the requirement to change filters due to the cleaning process). Blending biodiesel with petroleum diesel improves the lubricity (engine/fuel system protection), combustibility (emissions and performance) and biodegradability (environmental benignity) of the petroleum diesel.

36. *Stakeholders are requested to comment on the impacts of biodiesel on engine oil.*

Tests done in the US with biodiesel produced from Tallow and Soya Oil where the concentration of biodiesel was up to 50% by volume showed no negative effect on the performance of the oil or noticeable polymerization.

37. *Stakeholders are requested to comment on the issue of biodiesel warranties for use in vehicles in Australia.*

Specifically, stakeholders are requested to comment on any experience with negotiating warranties for biodiesel use.

38. Stakeholders are requested to comment on issues relating to the suitability of current infrastructure, or any requirements for specialised infrastructure, for the use of biodiesel.

Biodiesel may be metered through pumps patterned for diesel use or (because biodiesel does not froth) pumps patterned for motor spirit use. In Germany, motor spirit pumps are used to dispense biodiesel, to ensure that suppliers do not pass off petroleum diesel as biodiesel.

Our company has had significant difficulties with NSC and Trade Measurement (SA) in the approval of a “diesel” patterned bowser for biodiesel. It is perceived that, with the implementation of an Australian Standard for biodiesel, across-board approval for the utilisation of both Motor Spirit and Diesel patterned bowsers for biodiesel will be granted.

39. Stakeholders are invited to comment on the case for labelling of biodiesel/biodiesel blends and what information would be relevant to the end-user.

We strongly support point-of-sale labelling of biodiesel and biodiesel blends. In the case of biodiesel blends, we believe it is extremely important to label not only the biodiesel content, but also the content of any other portion of the fuel. This, as well as an aggressive positive branding strategy, will protect consumers against the possibility of low-cost, low quality extenders being placed into the fuel.