



Gardner Smith Pty Limited

Response to the
Department of Environment and Heritage
Discussion Paper on:

Setting National Fuel Quality Standards
Standardising Diesel/Biodiesel Blends

January 2007

Diesel/Biodiesel Blends – Discussion Paper

Gardner Smith Pty Limited, Agri Energy, is a proven and committed leader in the aggregation and value added supply of tallow, vegetable oils and their derivatives, servicing producers and customers within the traditional food, personal care, chemical and livestock industries.

Gardner Smith are actively involved in the emerging Biodiesel industry with feedstock supply to the producers and offtake of B100 Biodiesel and Glycerol.

In 2006 Gardner Smith launched FLEX Diesel™ - a diesel manufactured from hydrocarbon and renewable fuels.* Since commercial production commenced in November of that year, more than 6 million litres of FLEX Diesel™ has been sold into the market.

FLEX Diesel™ is a fuel which will reduce particulate and sulphur emissions and is the subject of a Life Cycle Assessment for inclusion as a Greenhouse Friendly™ product.

FLEX Diesel™ emissions will reflect the results from the US EPA survey (<http://www.epa.gov/otaq/models/biodsl.htm>), which demonstrate reductions in particulates, sulphates and carbon monoxide.

Comments:

- Gardner Smith has a manufacturing agreement with Pacific Terminals to produce FLEX Diesel, which is a product which meets the Australian Standard for Diesel and contains hydrocarbon and biodiesel components
- Gardner Smith is not involved in the retail of petroleum products, although it may sell its FLEX Diesel to a distributor who may choose to offer the product at retail
- As part of the Gardner Smith internal QA program, all FLEX Diesel is manufactured as a batch and quarantined while the fuel is tested. If the results show the fuel meets the Australian Standard for Diesel the product is released into the market
- Gardner Smith does not support a standard for either B5 or B20

- Gardner Smith will only accept B100 which has been produced to the Australian Fuel Standard (Biodiesel) Determination 2003.
- Gardner Smith will only accept hydrocarbon diesel which has been produced to the Australian Fuel Standard (Automotive Diesel) Determination 2001, as amended September 2006
- Gardner Smith would propose that a volumetric level of B100 should not be used to create a standard, but that whatever volume of B100 is used, the finished product must meet the Australian Fuel Standard (Automotive Diesel) Determination 2001, as amended September 2006
- Gardner Smith would support the response by the Biodiesel Association to have amendments to the Standard to reflect the correct testing methodology ** for a blended fuel, including a density waiver to 0.82 – 0.86
- Gardner Smith would propose that licensed manufacturers of a blend should retain 2 samples for a period of 30 days and produce a Quality Certificate to show the product meets the Diesel standard
- Gardner Smith supports industry members falling under a registered code of practice and that DEH will have the right to prosecute for the distribution and sale of product which does not meet the Standard
- Gardner Smith would support a label consistent with “THIS FUEL CONTAINS A BLEND OF AUTOMOTIVE DIESEL AND BIODIESEL AND COMPLIES WITH THE AUSTRALIAN DIESEL FUEL STANDARD - *Fuel Quality Standards Act 2000* (as amended)” and additional advice to purchasers that the blended product meets that Australian Standard and is manufactured from hydrocarbon and biodiesel components

* Test Certificate for FLEX Diesel™ attached

** Changes to test methods attached

Chris J Mapstone

Gardner Smith Pty Ltd.
Level 14, 61 Lavender Street
MILSONS POINT, N.S.W., 2061

Attention: Mr. Warwick Rush

LABORATORY TEST CERTIFICATE

NUMBER: AU190-33691 / 4311000

ISSUED: 21 December 2006

Sample Description : Flexdiesel
Received from : Pacific Terminals Australia Pty Ltd.
Description on label : Tank S23; Batch No. 12DEC06/NL – Gardner Smith Bio Fuels.

The above sample was examined as detailed below and the following results were obtained:-

TEST	METHOD	UNIT	RESULT	SPECIFICATION
Sulphur	ASTM D5453	mg/kg	5	50 max
Ash and Suspended Solids	ASTM D482	mg/kg	0.000	100 max
Carbon Residue – 10% distillation residue	ASTM D4530	% mass	<0.1	0.2 max
Flash Point	ASTM D93	-	70.0	61.5 min
Colour	ASTM D1500	-	L2.0	2 max
Lubricity	IP 450	µm	227	460 max
Filter Blocking Tendency	IP 387	-	1.94	Max. 2.0
- Initial Pressure after 20 secs.	IP 387	kPa	11	Report
- Initial Temperature of test fuel.	IP 387	°C	22.5	Report
Density @ 15°C	ASTM D4052	kg/m ³	844.1	820 - 850
Distillation T95	ASTM D86	°C	352.0	360 max
Viscosity @ 40°C	ASTM D445	mm ² /s	3.250	2.0 – 4.5
Oxidation Stability	ASTM D2274	mg/L	1.2	25 max
Copper Corrosion 3hrs @ 50°C	ASTM D130	-	1a	1 max
Cloud Point	ASTM D2500	°C	-4	N/A
Polyaromatic Hydrocarbons	IP 391	% mass	10.1*	11 max
Conductivity @ 21.0 °C	ASTM D2624	pS/m	298	50 min
Derived Cetane Number	ASTM D6890	DCN	56.9	51.0 min
- Ignition Delay	ASTM D6890	ms	3.508	Report
- Charge Air Temperature	ASTM D6890	°C	555.8	Report
Water and Sediment	ASTM D2709	vol %	0	0.05 max
Cold Filter Plugging Point	IP 309	°C	-11	N/A
Water content	ASTM D6304	mg/kg	180	N/A

The testing detailed in this report is performed in accordance with procedures incorporated within our Quality Management System complying with the requirements of AS/NZS ISO 9001:2000.

The sample has been tested as received on 18 December 2006.

COMMENTS:

* Fatty acid methyl esters interfere with tri aromatics, if present, the tri aromatics content may be over estimated.

!The reference specification is the Australian Fuel Standard (Automotive Diesel) Determination 2001.

For Intertek Caleb Brett Australia


Alex Krstev
Chemist

Intertek Testing Services (Australia) Pty. Ltd.

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(See over for Terms & Conditions of Service)

January 18, 2007

Proposed Quality Management Methods

■ Appearance	Clear & Bright
■ Oxidation Stability	Rancimat method
■ Total Acid No	A reduction from the current
■ CFPP	Fit for purpose
■ Water	Karl Fischer
■ PAH	Show PAH as reported taken from the Hydrocarbon specification
■ Simulated Distillation	Locating contaminants in any blend