



## Warranties

### **Engine Manufacturers' Warranties**

Engine manufacturers warrant their engines for "materials and workmanship". An engine company will cover the rectification of a fault with an engine part or with engine operation within the prescribed warranty period, if the fault is due to an error in manufacturing or assembly. Typically, an engine company will define what fuel the engine was designed for and will recommend the use of that fuel to their customers in their owner's manuals. Engine companies do not warrant fuel, whether petrol, diesel or biodiesel. Engine problems arising directly from fuel use (and not a fault in materials and workmanship) are the responsibility of the fuel supplier and not the engine manufacturer.

### **Fuel Company Warranties**

Fuel companies typically warrant that their fuel is manufactured and supplied to a published standard. In the case of Arfuels biodiesel, this is the Australian Biodiesel Standard or the international EN 14214. Other standards may be supplied upon request and availability.

### **The European Experience**

Volkswagen AG, including the brands Audi, Seat, Skoda and Volkswagen from 1996 onwards, has supported the use of biodiesel in European countries. The German DIN 51606 (superseded by EN14214) standard for Fatty-acid-methyl-ester (FAME) was published in 1997, and this strengthened the quality control requirements of engine and equipment manufacturers allowing further companies to issue biodiesel engine warranties for the use of B100 fuels. A current list of European manufacturers directly endorsing the use of biodiesel is attached in Table 1 (adapted from Austrian Biofuels Institute).

### **The United States Experience**

The United States situation is slightly different to that existing in Europe, as approximately 99% of all biodiesel is used in blends of B20 or less. Most manufacturers have formally stated that use of biodiesel up to B20 blend will not void their materials and workmanship warranties, providing that the biodiesel is manufactured to meet ASTM D 6751 (EN 14214 is a superior standard) quality standard.

### **Fuel Injection Equipment (FIE)**

According to the US Manufacturers Association, the use of biodiesel or biodiesel blends in and of itself will not void fuel injection equipment (FIE) warranties. Some FIE manufacturers have special equipment designed for high blends of biodiesel, including B100. The FIE manufacturers should always be consulted regarding the limits of their products.

### **The Australian Experience**

The position of vehicle manufacturers, vehicle distributors, parts manufacturers and industry bodies in Australia is generally supportive of B5 blends but not of higher blends. Most manufacturers, including FIE (Fuel Injection Equipment) manufacturers, agree that a blend of up to and including B5 will not cause any significant effect on operability and not void warranties. Position statements on warranty status is briefly summarised in Table 2.

### **Australian Design Rule (ADR) Compliance**

CSIRO report that 100% biodiesel can be expected to meet all future Australian Design Rules for all pollutants except oxides of nitrogen which may be slightly above Euro3 and Euro4 standards, and possibly the particulate matter standard for Euro3 (and therefore Euro 4). There is limited data for 100% biodiesel on which to make this judgement and none of the data from the CSIRO report was derived from current Euro 3 or latest US technology vehicles. A blend of 20%-30% biodiesel with diesel in heavy vehicles is expected to meet all Euro4 standards.

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**Table 1: Current European Biodiesel Warranties**

MANUFACTURER	VEHICLE CLASS	DESCRIPTION
Audi	personal cars	all TDI-models since 1996
Case - IH	tractors	all models since 1971
BMW	personal car	model 525 tds / 1997 and 3er + 5er since 2001
Claas	combines, tractors	warranties exist
Faryman Diesel	engines	warranties exist
Fiatagri	tractors	for new models
Ford AG	tractors	for new models
Holder	tractors	warranties exist
Iseki	tractors	series 3000 and 5000
John Deere	tractors	warranties since 1987
John Deere	combines	warranties since 1987
KHD	tractors	warranties exist
Kubota	tractors	series OC, Super Mini, 05, 03,
Lamborghini	tractors	series 1000
Mercedes-Benz	personal cars	series C and E 220, C 200 and 220 CDI, a.o.
Mercedes-Benz	lorry, bus	series BR 300, 400, Unimog since 1988, a.o.
Nissan	personal car	type Primera since 2001
Same	tractors	since 1990
Seat	personal cars all TDI-series	since 1996
Skoda	personal cars	all TDI-series since 1996
Steyr	tractors	since 1988
Steyr	boat	series M 16 TCAM and M 14 TCAM
Valmet	tractors	since 1991
Volkswagen	personal cars	all TDI- series since 1996
Volkswagen	personal cars	all new SDI-series (EURO-3)
Volvo	personal cars	series S80-D, S70-TDI and V70-TDI

Source of information: *SETTING NATIONAL FUEL QUALITY STANDARDS, Paper 6, National Standard for Biodiesel – Discussion Paper, prepared by Environment Australia, March 2003.*

### Arfuels Warranty

Arfuels will produce biodiesel using the latest European technology to the highest international fuel standard. Arfuels warrants that the biodiesel it sells is certified to comply with EN 14214, or the relevant Australian Biodiesel Standard, at the time of purchase.

Assuming all the criteria below are met and the instructions are followed in the BIODIESEL FACT SHEET 3: FLEET SERVICE RECOMMENDATIONS the terms of the warranty are defined as follows:

#### Arfuels Products Covered

Arfuels fuel guarantee applies to all Arfuels branded biodiesel purchased from Arfuels direct or through a service station where ARFuel™ branding (logo) are prominently displayed.

#### Restrictions

The Arfuels guarantee only applies to Arfuels sites as defined above. Arfuels biodiesel guarantee does not apply if the retail service station is selling blends of Arfuels biodiesel where Arfuels has not authorised the blend and issued the appropriate quality certificate, (under appropriate regulations), or in any other circumstances.

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**Table 2: Biodiesel position of engine and equipment manufacturers - Australia**

MANUFACTURER	SUMMARISED POSITION
Cummins Engine Co.	"Cummins neither approves or disapproves of the use of biodiesel fuel". Would recommend against B100. Up to B5 should not cause serious problems
Isuzu GM Australia Ltd	"Isuzu Japan neither approves nor prohibits using biodiesel fuel. Isuzu Japan recommend using the fuel that meet CEN prEN 14214 or ASTM D 6751 standard"  B5 may be acceptable providing the biodiesel meets one of the acceptable standards. No formal approval is given to customers.
Mitsubishi Motors Australia	voids warranty. Have no data of testing on B100 or blends.
Premier Automotive Group (Aston Martin, Jaguar, Land Rover and Volvo Car)	B5 only
Scania Australia	B5 only
Volvo Truck	B4 only
Caterpillar	Neither approves nor prohibits the use of biodiesel fuels. Failures resulting from the use of any fuel are not Caterpillar factory defects and therefore the cost of repair would NOT be covered by Caterpillar's warranty.  When using a fuel that meets Caterpillar's Biodiesel specifications, ASTM PS121 or DIN 51606 and following recommendations, the use should pose no problems.
Daimler Chrysler Australia Pacific Commercial vehicles	Fuel must meet DIN 51606 and STIN 00.00S028. Use of B100 would not necessarily void warranties. Up to B5 suitable for all engines.
UD Nissan Trucks	Have not discussed with international headquarters, but state that "The use of biodiesel would make the vehicle's warranty conditional." Relevant testing would be required.
Mazda Australia Pty Ltd	voids warranty.
Holden	B5 (as methyl ester).
Toyota Australia	Engineering responsibility for all Toyota diesel engines rests in parent company - Toyota Motor Corporation Japan. Questionnaire referred to them.
Volkswagen Group Australia	Warranties would not be voided if the engine is released for use with RME (rapeseed methyl ester) biodiesel and the biodiesel met the European norm standard pr EN 14214.

Source of information: *SETTING NATIONAL FUEL QUALITY STANDARDS, Paper 6, National Standard for Biodiesel – Discussion Paper, prepared by Environment Australia, March 2003.*

Conditions to be met before claims are processed:

- (i) Suitable for Purpose - The fuel must be endorsed by the manufacturer for use in your vehicle and have been in your fuel tank for less than three months
- (ii) Vehicle / Equipment Maintenance - Your vehicle must be well maintained. Arfuels™ warranty does not cover parts that are subject to wear or age and would be regarded as items requiring attention during normal maintenance.
- (iii) Proof of Purchase - You must be able to prove that the fuel in question was purchased direct from Arfuels or from an Arfuels service station, as defined above.
- (iv) Timing - A claim must be made within a reasonable time - of the purchase of the fuel and at the first reasonable opportunity after a fault is believed to have occurred. A sample of fuel must be retained from your vehicle to allow a claim to be processed. What is a reasonable time for claims is determined by Arfuels at its discretion, but will not be more than six months.
- (v) Confirmation process for any fault - If required by Arfuels, a sample from the fuel in your tank must be tested and the results must show the same problem as shown to be in the fuel from the service station where purchased.
- (vi) Service Station/Distributor Fault - If there is a fault, it may not be a manufacturing fault – it may have been caused by the service station operator or the distributor. In these circumstances, Arfuels will claim the cost back from the operator or distributor and will want you to transfer over to Arfuels your rights against the operator.

### What Arfuels Cover:

If the results of Arfuels investigations show that the biodiesel you have purchased has caused a problem with a component of your fuel system and all other conditions detailed above have been met, Arfuels will:

- (i) replace the product free of charge; and
- (ii) pay to have the affected parts replaced.

Arfuels may, at its sole discretion and depending on the circumstances, reimburse other costs that you have incurred.

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### **Other Contracts**

If you have a written agreement with Arfuels or your distributor, which includes terms that deal with fuel quality, that agreement will take precedence over this warranty and this warranty will not apply.

### **Source of information for Fact Sheet**

*Arfuels has used a number of sources including its own internal data. However a number of references are from the document "Setting National Fuel Quality Standards, Paper 6, National Standard for Biodiesel – Discussion Paper, prepared by Environment Australia, March 2003".*