

# **Truck Industry Council (Australia)**

## **Position on Alternative Fuels as at May 2005**

As approved by TIC Board Meeting on 12 May, 2005

### **6) Biodiesel**

#### **6.1 Discussion**

- In Australia, biodiesel largely comes from canola, with a number of production facilities gaining approval to be built.
- Projected maximum production is about 1% of the diesel volume.
- Impact on the environment – PM down, but NOx slightly up with later model engines.
- Known for its diesel like qualities.
- Is legislated under the act in 100% form only. (refer 6.5)
- B5 = 5% biodiesel and 95% diesel, B20 = 20% biodiesel and 80% diesel etc

#### **6.2 Issues**

- TIC member companies vary in their position from B5 for most companies, B10 for some European manufacturers and Caterpillar position being use biodiesel so long as all the parameters are the same as diesel.
- TIC has previously stated its position as B5.
- FSCC / DEH does not have a date / agenda at this point in time to legislate for a B5 (or B10 etc) standard.

#### **6.3 Confirmed TIC Position**

- TIC recommends B5 as a heavy duty transport fuel. The biodiesel component of B5 must meet the biodiesel specification under the act (refer 6.5).

#### **6.4 Fuel Standard Quality Act**

<http://www.deh.gov.au/atmosphere/cleaner-fuels/index.html>

#### **6.5 Biodiesel Standard**

<http://www.deh.gov.au/atmosphere/biodiesel/index.html>

(Refer to table next page)

| Biodiesel Standard   |   |   |                           |
|--|---|---|---------------------------|
| Parameter  | Standard  | Test Method   | Date of effect            |
| Sulfur   | 50 mg/kg (max)<br>10 mg/kg (max)  | ASTM D5453  | 18 Sep 2003<br>1 Feb 2006 |
| Density  | 860 to 890 kg/m <sup>3</sup>  | ASTM D1298<br>or<br>EN ISO 3675                               | 18 Sep 2003               |
| Distillation T90   | 360C (max)  | ASTM D1160  | 18 Sep 2003               |
| Sulfated ash   | 0.020% mass (max)   | ASTM D874   | 18 Sep 2003               |
| Viscosity  | 3.5 to 5.0 mm <sup>2</sup> /s @ 40°C  | ASTM D445   | 18 Sep 2003               |
| Flashpoint   | 120.0°C (min)   | ASTM D93  | 18 Sep 2003               |
| Carbon residue<br>(10% distillation residue)<br>(100% distillation sample) | 0.30 % mass (max) <b>OR</b><br>0.050 % mass (max)   | EN ISO 10370<br>ASTM D4530                                    | 18 Sep 2003               |
| Water and sediment   | 0.050 % vol (max)   | ASTM D2709  | 18 Sep 2003               |
| Ester content  | 96.5 % (m/m) (min)  | prEN 14103  | 18 Sep 2003               |
| Phosphorus   | 10 mg/kg (max)  | ASTM D4951  | 18 Sep 2003               |
| Acid value   | 0.80 mg KOH/g (max)   | ASTM D664   | 18 Sep 2003               |
| Total contamination  | 24 mg/kg (max)  | EN 12662<br>ASTM D5452  | 18 Sep 2004               |
| Free glycerol  | 0.020 % mass (max)  | ASTM D6584  | 18 Sep 2004               |
| Total glycerol   | 0.250 % mass (max)  | ASTM D6584  | 18 Sep 2004               |
| Oxidation stability  | 6 hours @ 110°C (min)   | prEN 14112 or<br>ASTM D2274<br>(as relevant for<br>biodiesel) | 18 Sep 2004               |
| Metals   | ≤ 5mg/kg Group I (Na, K)<br>≤ 5mg/kg Group II (Ca,<br>Mg)   | prEN 14108,<br>prEN 14109 (Group I)<br>prEN 14538 (Group II)  | 18 Sep 2004               |
| Methanol Content   | <0.20%(m/m)   | prEN 14110  | 18 Dec 2004               |
| Copper strip corrosion<br>(3 hrs @50°C)                                    | if the biodiesel contains no<br>more than<br>10 mg/kg of sulfur – Class<br>1 (max)<br><br>if the biodiesel contains<br>more than<br>10 mg/kg of sulfur - No. 3<br>(max) | EN ISO 2160<br>ASTM D130<br><br>ASTM D130                     | 18 Dec 2004               |
| Cetane number  | 51.0 (min)  | EN ISO 5165<br>ASTM D613<br>ASTM D6890<br>IP 498/03           | 18 Sep 2005               |