

PROPOSED QUALITY STANDARD FOR FUEL ETHANOL
TECHNICAL PAPER

Comments from Department of Environment and Conservation NSW

8 February 2005

It is important that a Standard be made for fuel ethanol to ensure vehicle operability and to give assurance to consumers that ethanol is safe for their vehicles. Consumer confidence has been greatly eroded due to controversy surrounding ethanol/petrol blends of over 10% ethanol (E10) and up to 20% (E20). With the limiting of blends to E10 and mandatory labelling at the bowser, this proposed Standard for fuel ethanol should help restore consumer confidence in this fuel.

The following comments were prepared on the specific recommendations in the Technical Paper (page 53).

Recommendation 1: Define the ethanol, including whether denatured or not

Denatured ethanol contains an additive to prevent human consumption and to differentiate it from ethanol that attracts alcohol excise. Often the denaturant is petrol, which is relevant for the intended end use of ethanol in this context.

NSW Position: Agree.

Recommendation 2: Choose denatured ethanol as the Standard

This is the US practice and is recommended in the Technical Paper as the ethanol will then most closely relate to the end product that will, in practice, be denatured.

NSW Position: Agree.

Recommendation 3: Choose uniform unit of measurement - volume or mass

DEC understands that Australian oil companies already use volume. With regard to measuring additives by ppm, mixed units as weight/volume should be avoided. Clarity in this case is normally established by using ppmw for weight and ppmv for volume. Whatever choice is made for the Australian Standard, units should not be mixed.

NSW Position: Choose volume as the uniform unit of measurement as it is commonly used across industry and the general public.

Recommendation 4: Choose anhydrous or hydrous ethanol for diesel blends

It is possible to use hydrous ethanol (containing some water) in diesel blends but that requires greater effort in policing what is contained in this less than pure ethanol. Most countries use only anhydrous ethanol (containing no water). Anhydrous should be chosen for Australia as well and will result in one uniform ethanol for all uses. This would also suit the existing Australian manufacturers (Manildra and CSR) as they both, according to the Technical Paper, produce anhydrous ethanol.

NSW Position: Choose anhydrous ethanol. This will result in one uniform ethanol for all uses.

Recommendation 5: Choose method of differentiating between synthetic and biological ethanol

Ethanol is usually manufactured from plant material and so is eligible for renewable fuel tax incentives. However, ethanol can also be made synthetically, in which case it is not considered renewable and so does not attract the tax incentive. A chemical marker (a dye or a substance easily detected by a simple test) is needed in order to differentiate between the two for tax purposes.

NSW Position: Agree.

Recommendation 6: Stipulate the use of corrosion inhibitors for petrol blends

Corrosion inhibitors are required in petrol blends to protect vehicle parts. As ethanol is the portion that causes corrosion, the inhibitor should be part of the ethanol Standard.

NSW Position: Agree.

Recommendation 7: Form a panel to choose test methods for ethanol

Test methods for compliance with the various parameters under the Standard were beyond the scope of the Technical Paper. However, they will be needed when the Standard is ultimately made. A panel of experts should be formed to consider the technical details of what the Australian Standard will require.

NSW Position: Agree.

The following comments were prepared on other aspects of the Technical Paper.

Variations in parameters amongst overseas standards (page 42)

The Technical Paper shows (Item 5.1) that the level of consideration given to some ethanol parameters, for example, denaturant, inorganic chloride and copper, varies from country to country depending on their perceived importance. DEC recommends that Australian stakeholders, particularly fuel and vehicle manufacturers, reach a consensus on these parameters as some may be harmful to vehicle parts and operation. To this end, the expert panel (Recommendation 7) could also consider this matter.

NSW Position: The Technical Paper shows that international uniformity regarding ethanol parameters is lacking. Therefore, the Technical Paper is not a sufficient guide for the setting of an Australian Standard. The expert panel (Recommendation 7) could also consider this matter.

Water Content (page 44)

Ethanol is hygroscopic (absorbs moisture from the air) and easily picks up water from ambient air and from the distribution system. The water content of the denatured fuel ethanol must be limited when it is blended with petrol. Above certain levels, water in ethanol causes operability problems. In colder climates, the hygroscopic nature of ethanol increases. In the US, the standard for water content is set at the generally acceptable level of 1 vol%. In colder areas, buyers and sellers of ethanol negotiate a lower level for water content that provides a safety margin for ethanol's propensity to pick up more water at low temperatures.

The Technical Paper asks stakeholders to choose between:

- i) The above US practice; and
- ii) Setting the Australian Standard water content at a fixed low level to respond to the needs of colder areas.

DEC suggests two other options:

- iii) Ask the two current Australian ethanol manufacturers, Manildra and CSR, to agree on the lowest water content they are able to reliably provide and set the Standard at that level, allowing buyers and sellers to negotiate further, as in i) above; and
- iv) Consider the cold weather water level issue in a way similar to that for Wintermix diesel. This would mean having a general Standard, with a special one for nominated colder areas.

NSW Position: These options may be considered by the expert panel on parameters (Recommendation 7).