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**NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION  
AND ASSESSMENT SCHEME**

**FULL PUBLIC REPORT**

**MEP 848**

This Assessment has been compiled in accordance with the provisions of *the Industrial Chemicals (Notification and Assessment) Act 1989*, and Regulations. This legislation is an Act of the Commonwealth of Australia. The National Industrial Chemicals Notification and Assessment Scheme (NICNAS) is administered by Worksafe Australia which also conducts the occupational health & safety assessment. The assessment of environmental hazard is conducted by the Commonwealth Environment Protection Agency and the assessment of public health is conducted by the Department of Health, Housing, Local Government and Community Services.

For the purposes of subsection 78(1) of the Act, copies of this full public report may be inspected by the public at the Library, Worksafe Australia, 92-94 Parramatta Road, Camperdown NSW 2050, between the hours of 10.00 a.m. and 12.00 noon and 2.00 p.m. and 4.00 p.m. each week day except on public holidays.

Under subsection 34(2) of the Act the Director of Chemicals Notification and Assessment is to publish this Report in the Chemical Gazette on .

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Director  
Chemicals Notification and Assessment  
November 3, 2000

**FULL PUBLIC REPORT****MEP 848****1. APPLICANT(S)**

Baker Hughes Australia Proprietary Limited Office 2, 1st Floor, 505 Henley Beach Road, Fulham SA 5024 and Ethyl Asia Pacific Company Level 12, 20 Berry St. North Sydney NSW 2060.

**2. IDENTITY OF THE POLYMER**

The notified chemical is not classified as a hazardous substance under NOHSC: 1008 (1994) (1). Therefore the chemical name, CAS number, molecular and structural formulae, spectral data, constituents and impurities have been granted exemption from publication.

**Trade name(s):** MEP 848

**Number-average molecular weight:** > 5000

**Maximum percentage of low molecular weight species**

**(molecular weight < 1000):**

1%

**(molecular weight < 500):**

0.5%

**3. PHYSICAL AND CHEMICAL PROPERTIES**

**Appearance at 20°C and 101.3 kPa:** tacky solid

**Melting Point:** not determined

**Specific Gravity:** not determined

**Water Solubility:** insoluble

**Flammability Limits:** not determined

**Autoignition Temperature:** not applicable

**Explosive Properties:** none

**Reactivity:** no known reactions

**Comments on Physico-Chemical Properties:**

The notifier expects the polymer does not meet the 1 ppm criteria for water solubility because some dispersion might occur. They estimated that the polymer would have a water accommodated fraction of <25 ppm (limit of detection using HPLC to analyse organic content of aqueous phase after a partition test). The polymer

contains a significant number of ether linkages, which maybe expected to increase solubility potential, though this is offset by some hydrophobic groups.

#### **4. PURITY OF THE CHEMICAL**

Impurities are present in quantities below the cut-off point for classification as a hazardous substance under NOHSC: 1008(1994) (1). They are therefore permitted to be exempt from publication.

#### **5. INDUSTRIAL USE**

The notified chemical will be used as a demulsifying agent in a range of multifunctional diesel additive packages. It will be imported as a component of a blended fuel additive package.

#### **6. OCCUPATIONAL EXPOSURE**

Up to 450 workers will handle drums containing the additive package containing the notified chemical during import, transport and storage. All processes will take place in sealed containers.

Incorporation of the additive package into diesel fuels will take place at refineries or terminal storage depots.

Forty-five to seventy-five workers will be potentially exposed during this process. Additives will be added by fuel injection in an enclosed environment. Workers will manipulate the material by remote control and, thus, exposure to the chemical will not occur during this process.

#### **7. PUBLIC EXPOSURE**

The additive package containing the notified chemical will be imported in drums and incorporated into diesel fuels in an enclosed environment, at refineries or terminal storage depots. It is estimated that less than 1kg of the polymer will be lost from a 10 tonne batch of diesel fuel as slops or washings, and would be disposed to appropriate waste systems. The diesel fuels will only be sold to industrial users. Under normal engine operating conditions, the polymer will undergo complete combustion, and be eliminated in exhaust gases. The public will therefore not be exposed to the chemical during its importation, formulation and use.

#### **8. ENVIRONMENTAL EXPOSURE**

##### **. Volume and Use**

MEP 848 will be imported at a rate of 3.0 tonnes per year for the first five years as an additive package. It will be used as a demulsifier in diesel additive packages. These additive packages would be used at 400 ppm (total product), giving a maximum of 0.001 wt% of the notified polymer in finished diesel fuels.

## . **Release**

The formulation of the additive would be a simple blending process, with the additive blended with diesel fuel at refineries or fuel distribution depots. The company estimates that losses during formulation would be about 1 kg from a 10 tonne batch of finished product (0.01%). The losses would be from slops or washings and would be contained in compounds or pits, then treated and disposed of according to state land waste regulations.

## . **Fate**

The additive will be used in diesel fuels and will share their fate. Therefore, most will be combusted and destroyed in use. Also, a minor component will be released to the environment from spills and leaks, and incomplete combustion, but would be widely dispersed. Any additive present in spills on road surfaces, or emissions, would be at low concentrations (0.001%). If the polymer was washed off road surfaces, it would be expected to adsorb to soils or sediments adjacent the road. Emissions of the polymer are also expected to become associated with the soil compartment on the roadside.

Bioaccumulation is unlikely, given the high molecular weight and low solubility of the polymer. It is also expected not to degrade, or to be mobile, in landfills.

## **9. ASSESSMENT OF ENVIRONMENTAL EFFECTS**

No ecotoxicological data were provided which is acceptable for polymers of low concern. No toxic effects are anticipated from a neutral polymer with low water solubility and high molecular weight.

## **10. ASSESSMENT OF ENVIRONMENTAL HAZARD**

The polymer will be used as an fuel additive and the main exposure will be from incomplete combustion or spills and leaks. Given the polymer would be widely dispersed and would be at very low concentrations, environmental exposure would appear to be very low. Any polymer that was lost to the environment would adsorb to soils or sediments adjacent the road. The USEPA also advises that high molecular weight, non-ionic polymers are of low concern (2).

Further, the low water solubility and high molecular weight suggests that the polymer will not be biologically active as it will not cross membranes.

## **11. ASSESSMENT OF OCCUPATIONAL AND PUBLIC HEALTH AND SAFETY EFFECTS**

The notified polymer has a molecular weight >1000. It is not expected to be absorbed across biological membranes. The products are blended in a closed system, and thus minimum occupational exposure is expected. The accidental exposure hazards are those of other ingredients of formulation in the imported package. Precautions required by these ingredients will be recommended.

The public will not be exposed to the chemical during its importation, formulation, and use in industrial diesel fuels.

Based on the above information, MEP 848 will not pose a significant hazard to public health when used in the proposed manner.

## **12. RECOMMENDATIONS**

To minimise occupational exposure to MEP 848 the following guidelines and precautions should be observed:

- . Good general ventilation
- . Do not generate dust of notified chemical or mist of formulated product.
- . Observe good work practices and good hygiene
- . Observe precautions against other ingredients in additive package and in formulated product.

## **13. MATERIAL SAFETY DATA SHEET**

The attached Material Safety Data Sheet (MSDS) for MEP 848 was provided in Worksafe Australia format (3).

This MSDS was provided by Baker Hughes Australia as part of their notification statement. It is reproduced here as a matter of public record. The accuracy of this information remains the responsibility of Baker Hughes Australia and Ethyl Corporation Australia.

## **14. REQUIREMENTS FOR SECONDARY NOTIFICATION**

Under the *Industrial Chemicals (Notification and Assessment) Act 1989*, secondary notification of MEP 848 shall be required if any of the circumstances stipulated under subsection 64(2) of the Act arise. No other specific conditions are prescribed.

## 15. REFERENCES

1. Approved Criteria for Classifying Hazardous Substances (NOHSC: 1008(1994)) AGPS March 1994.
2. Nabholz JV, Miller P, Zeeman M 1993. Environmental Risk Assessment of New Chemicals Under the Toxic Substances Control Act (TSCA) Section Five. In Landis, WG, Hughes JS, Lewis MA (eds) *Environmental Toxicology and Risk Assessment*, ASTM STP 1179. American Society for Testing and Materials, Philadelphia, pp 40-45.
3. National Code of Practice for the Preparation of Material Safety Data Sheets (NOHSC: 2011 (1994) AGPS March 1994.