File No PLC/930

July 2010

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

FULL PUBLIC REPORT

Polymer in DOM-500

This Assessment has been compiled in accordance with the provisions of the *Industrial Chemicals (Notification and Assessment) Act 1989* (Cwlth) (the Act) and Regulations. This legislation is an Act of the Commonwealth of Australia. The National Industrial Chemicals Notification and Assessment Scheme (NICNAS) is administered by the Department of Health and Ageing, and conducts the risk assessment for public health and occupational health and safety. The assessment of environmental risk is conducted by the Department of the Environment, Water, Heritage and the Arts.

For the purposes of subsection 78(1) of the Act, this Full Public Report may be inspected at our NICNAS office by appointment only at 334-336 Illawarra Road, Marrickville NSW 2204.

This Full Public Report is also available for viewing and downloading from the NICNAS website or available on request, free of charge, by contacting NICNAS. For requests and enquiries please contact the NICNAS Administration Coordinator at:

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Director
NICNAS

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1. APPLICANT AND NOTIFICATION DETAILS

APPLICANT(S)
Toyota Tsusho (Australasia) Pty Ltd (ABN 24 056 847 315)
231-233 Boundary Road
Laverton North VIC 3026

NOTIFICATION CATEGORY
Polymer of Low Concern

EXEMPT INFORMATION (SECTION 75 OF THE ACT)
Data items and details claimed exempt from publication: Chemical Name, CAS Number, Molecular and Structural Formulae, Molecular Weight, Polymer Constituents, Residual Monomers/Impurities, Use Details and Import Volume.

VARIATION OF DATA REQUIREMENTS (SECTION 24 OF THE ACT)
No variation to the schedule of data requirements is claimed.

PREVIOUS NOTIFICATION IN AUSTRALIA BY APPLICANT(S)
None

NOTIFICATION IN OTHER COUNTRIES
Korea and Japan

2. IDENTITY OF CHEMICAL

MARKETING NAME(S)
DOM-500 (diesel additive containing the notified polymer)

MOLECULAR WEIGHT (MW)
Number Average Molecular Weight (Mn) > 10,000 Da

REACTIVE FUNCTIONAL GROUPS

Functional Group	Category	Equivalent Weight (FGEW)
Ethylhexyl ester	High Concern	Not applicable NAMW > 10,000 Da

3. PLC CRITERIA JUSTIFICATION

Criterion	*Criterion met*
Molecular Weight Requirements	Yes
Functional Group Equivalent Weight (FGEW) Requirements	Yes
Low Charge Density	Yes
Approved Elements Only	Yes
Stable Under Normal Conditions of Use	Yes
Not Water Absorbing	Yes
Not a Hazard Substance or Dangerous Good	Yes

The notified polymer meets the PLC criteria.

4. PHYSICAL AND CHEMICAL PROPERTIES

Appearance at 20°C and 101.3 kPa	White solid
Melting Point/Glass Transition Temp	70°C
Density	950 kg/m^3
Water Solubility	< 9.3 × 10^{-4} g/L at 20°C. Determined by dissolved organic carbon (DOC) analyses of water samples shaken for 24 h with notified polymer at pH 2, 7 and 9.
Dissociation Constant	Not determined. The notified polymer has no dissociable functions.
Reactivity	Stable under normal environmental conditions. Hydrolysis is expected to be very slow under environmental conditions due to the limited solubility of the notified polymer.
Degradation Products	None under normal conditions of use

5. INTRODUCTION AND USE INFORMATION

MAXIMUM INTRODUCTION VOLUME OF NOTIFIED CHEMICAL (100%) OVER NEXT 5 YEARS

Year	*1*	*2*	*3*	*4*	*5*
Tonnes	5-20	5-20	5-20	5-20	5-20

Use
The notified polymer will be imported as a component of diesel fuel at concentrations < 40 ppm.
The notified polymer will not be manufactured or reformulated within Australia.

Mode of Introduction and Disposal
The notified polymer will be imported as a component of diesel fuel through the ports of Sydney, Melbourne, Geelong and Adelaide.

6. HUMAN HEALTH IMPLICATIONS

Hazard Characterisation
No toxicological data were submitted. The notified polymer meets the PLC criteria and can therefore be considered to be of low hazard.

Occupational Health and Safety Risk Assessment
Workers could be exposed to the notified polymer (at < 40 ppm) during the connection and disconnection of hoses used in transferring the diesel containing the notified polymer or when refuelling or carrying out maintenance work on vehicles using diesel containing the notified polymer. Given the low concentration and assumed low hazard, exposure to the notified polymer is not considered to pose an unacceptable risk to the health of workers.

Public Health Risk Assessment
The public will be exposed to the notified polymer (at < 40 ppm) when filling vehicles with diesel fuel containing the notified polymer. Given the low concentration and assumed low hazard, exposure to the notified polymer is not considered to pose an unacceptable risk to public health.

7. ENVIRONMENTAL IMPLICATIONS

Hazard Characterisation
No ecotoxicological data were submitted. PLCs without significant ionic functionality are of low concern to the aquatic environment.

Environmental Risk Assessment
Diesel fuel containing the notified polymer will be imported to Australia and transported to service stations where the fuel will be transferred to underground tanks. Minor spills will be contained and collected for disposal at an approved facility. At service stations, the diesel fuel will be pumped directly into automobile

fuel tanks. Small amounts spilt to the ground during refuelling are expected to remain immobile and slowly degrade *in situ*, but the notified polymer will otherwise be consumed during engine operation to form water and oxides of carbon. The notified polymer contains side-chains that may hydrolyse under severe conditions, however, due to its limited water solubility, the notified polymer is expected to be stable under normal environmental conditions. Bioaccumulation in fish is not likely based on the high molecular weight of the notified polymer and the limited potential for aquatic release when it is used as proposed as a diesel fuel additive.

8. CONCLUSIONS AND RECOMMENDATIONS

Human health risk assessment
Under the conditions of the occupational settings described, the notified polymer is not considered to pose an unacceptable risk to the health of workers.

When used in the proposed manner, the notified polymer is not considered to pose an unacceptable risk to public health.

Environmental risk assessment
Based on the reported use pattern, the notified polymer is not expected to pose a risk to the environment.

Recommendations

CONTROL MEASURES
Occupational Health and Safety

- No specific engineering controls, work practices or personal protective equipment are required for the safe use of the notified polymer itself, however, these should be selected on the basis of all ingredients in the formulation.

  Guidance in selection of personal protective equipment can be obtained from Australian, Australian/New Zealand or other approved standards.

- A copy of the MSDS should be easily accessible to employees.

- If products and mixtures containing the notified polymer are classified as hazardous to health in accordance with the *Approved Criteria for Classifying Hazardous Substances* [NOHSC:1008(2004)], workplace practices and control procedures consistent with provisions of State and Territory hazardous substances legislation must be in operation.

Disposal

- The notified polymer should be disposed of to landfill.

Emergency procedures

- Spills or accidental release of the notified polymer should be handled by physical containment, collection and subsequent safe disposal.

Regulatory Obligations

Secondary Notification
This risk assessment is based on the information available at the time of notification. The Director may call for the reassessment of the polymer under secondary notification provisions based on changes in certain circumstances. Under Section 64 of the *Industrial Chemicals (Notification and Assessment) Act (1989)* the notifier, as well as any other importer or manufacturer of the notified polymer, have post-assessment regulatory

obligations to notify NICNAS when any of these circumstances change. These obligations apply even when the notified polymer is listed on the Australian Inventory of Chemical Substances (AICS).

Therefore, the Director of NICNAS must be notified in writing within 28 days by the notifier, other importer or manufacturer:

(1) Under Section 64(1) of the Act; if
- the notified polymer is introduced in a chemical form that does not meet the PLC criteria.

or

(2) Under Section 64(2) of the Act; if
- the function or use of the notified polymer has changed from a diesel fuel additive, or is likely to change significantly;
- the amount of notified polymer being introduced has increased, or is likely to increase, significantly;
- the notified polymer has begun to be manufactured in Australia;
- additional information has become available to the person as to an adverse effect of the chemical on occupational health and safety, public health, or the environment.

The Director will then decide whether a reassessment (i.e. a secondary notification and assessment) is required.

Material Safety Data Sheet
The MSDS of the products containing the notified polymer provided by the notifier were reviewed by NICNAS. The accuracy of the information on the MSDS remains the responsibility of the applicant.