File No PLC/432

16 February 2004

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

FULL PUBLIC REPORT

RCP49668

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 and Heritage.

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Director
Chemicals Notification and Assessment

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1. APPLICANT AND NOTIFICATION DETAILS

APPLICANT(S)
DuPont (Australia) Ltd of 168 Walker St, North Sydney NSW 2060

NOTIFICATION CATEGORY
Synthetic Polymer of Low Concern

EXEMPT INFORMATION (SECTION 75 OF THE ACT)
Data items and details claimed exempt from publication:
Identity information, purity.
Import volume, site of reformulation.
Details of use.

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
USA (1999), Canada (2002)

2. IDENTITY OF CHEMICAL

MARKETING NAME(S)
RCP49668

CAS NUMBER
None assigned

3. COMPOSITION

PLC CRITERIA JUSTIFICATION

Functional Group	Category	Equivalent Weight (FGEW)
Aliphatic hydroxyl	Low	N/A

Criterion	*Criterion met*
Meets Molecular Weight Requirements	Yes
Meets Functional Group Equivalent Weight (FGEW) Requirements	Yes
Low Charge Density	Yes
Approved Elements Only	Yes
No Substantial Degradability	Yes
Not a Water Absorbing Polymer	Yes
Low Concentrations of Residual Monomers	Yes
Not a Hazardous Substance or Dangerous Good	Yes

The notified polymer meets the PLC criteria.

4. INTRODUCTION AND USE INFORMATION

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

Year	*1*	*2*	*3*	*4*	*5*
Tonnes	> 400	> 400	> 400	> 400	> 400

USE
Automotive paint resin.

5. PROCESS AND RELEASE INFORMATION

5.1. Operation Description

The notified chemical will be imported either as > 50% of a solvent solution for formulation into a finished paint, or as > 30% of an imported paint product.
When polymer solution is imported, it will be transported from the wharf to the notifier's warehouse by road in steel closed head 200 L drums. The polymer solution will then be incorporated into the automotive paint formulation (one part of a two part system) and packed into steel cans of typically 4 L capacity. Formulation will take place at the notifier's plant in 5000 L batches in a closed system.
The packaged paint product will be distributed through wholesalers to spray painting /smash repair businesses, who are the end-users. The paint will be mixed on site with other components of the coating system, including an isocyanate catalyst, and applied in spray booths to motor vehicles as part of the repair or repainting process. There is the potential for the product to be used at up to 2000 sites in Australia. A proportion of the paint product will be exported rather than used in Australia.
When packaged paint product is imported, there will be no formulation step, but the product will be used similarly in the spray painting of vehicles.

6. EXPOSURE INFORMATION

6.1. Summary of Environmental Exposure

Under normal methods of manufacture and application, release to water is not expected. Losses during paint manufacture/reformulation are estimated to be minimal. Losses during paint application, such as overspray (major loss), mixing of chemicals and cleaning of plant equipment as well as losses from residues in containers have been estimated to be a maximum of 65%, which equates to approximately 15,000 Kg per annum. The product is sprayed in a booth with an exhaust/filter system to catch overspray and ultimately disposed of to landfill. The majority of the notified polymer will be bound in the paint matrix and not be available for direct release to the environment.

Waste paint from the above losses will mainly be landfilled. The polymer would not be expected to partition into the aquatic compartment if released to the environment. Due to its low solubility it would preferably associate with sediments and organic phases of soil and sediments.

6.2. Summary of Occupational Exposure

Dermal, inhalation and ocular exposure can occur during formulation and application processes. However, exposure to significant amounts of the notified polymer is limited because of the engineering controls and personal protective equipment worn by workers. For application in spray booths, controls against exposure are stringent because isocyanates are also used in the process.
After application and once dried, the adhesive/paint containing the notified polymer is cured into an inert matrix and is hence unavailable to exposure.

6.3. Summary of Public Exposure

The notified polymer will not be available to the public. Members of the public may come into

contact with products containing the notified polymer in the form of the cured coating on vehicles. In this form there will be no exposure because the polymer is part of the inert matrix.

7. PHYSICAL AND CHEMICAL PROPERTIES

Appearance at 20ºC and 101.3 kPa	Colourless liquid (>50% solution in solvents)
Melting Point/Glass Transition Temp	N/A as only available in solution
Density	1.02 kg/L in solvent solution
Water Solubility	Not determined (expected to be low due to presence of hydrophobic groups in the polymer).
Dissociation Constant	Not determined (there is a small amount of free carboxylic acid likely to have typical acidity).
Particle Size	N/A
Reactivity	Stable under normal environmental conditions
Degradation Products	

8. HUMAN HEALTH IMPLICATIONS

8.1. Toxicology
No toxicological data were submitted.

8.2. Human Health Hazard Assessment
The notified polymer meets the PLC criteria and can therefore be considered to be of low hazard.
The spray may cause mechanical irritation to the eyes, and to the respiratory tract if inhaled. Repeated or prolonged skin contact may result in mild irritation.

9. ENVIRONMENTAL HAZARDS

9.1. Ecotoxicology
No toxicological data were submitted.

10. RISK ASSESSMENT

10.1. Environment
The polymer is designed to be insoluble in water and highly stable towards light and temperature for effective functioning as a refinish clearcoat used to protect automobiles steel shell from the environment and oxidation. Therefore most will follow the fate of automobiles and be recycled or incinerated at the end of their useful lives to form oxides of carbon and water. The hydrophobic nature of the notified polymer indicates that most would adsorb onto particles of sediment and sludge, and would therefore not remain in the water compartment and be available for assimilation by aquatic organisms. The environmental risk presented by the notified polymer is expected to be low based on limited likely exposure to the environment.

10.2. Occupational health and safety
The OHS risk presented by the notified polymer is expected to be low, based on low hazard and low exposure.

10.3. Public health
The notified polymer is intended for use by professional spray painters in auto repair workshops only, and will not be sold to the public. Following application, the notified will become trapped within a film and will not be bioavailable. Therefore, the risk to public from exposure to the notified polymer is considered low.

11. CONCLUSIONS – ASSESSMENT LEVEL OF CONCERN FOR THE ENVIRONMENT AND HUMANS

11.1. Environmental risk assessment

The polymer is not considered to pose a risk to the environment based on its reported use pattern.

11.2. Human health risk assessment

11.2.1. Occupational health and safety

There is Low Concern to occupational health and safety under the conditions of the occupational settings described.

11.2.2 Public health

There is Negligible Concern to public health when used as a component of automotive finishes..

12. MATERIAL SAFETY DATA SHEET

Material Safety Data Sheet

The notifier has provided MSDS as part of the notification statement. The accuracy of the information on the MSDS remains the responsibility of the applicant.

13. 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 NOHSC *Approved Criteria for Classifying Hazardous Substances*, 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 or be incinerated.
- Empty containers should be sent to local recycling or waste disposal facilities.

Emergency procedures

- Spills/release of the notified polymer should be cleaned up promptly using non-reactive absorbent materials such as sand or vermiculite using non-sparking tools. The adsorbed material should be placed in an open head steel drum and ultimately sent to landfill. Larger spills of the notified polymer should follow emergency plan procedures and be controlled by the bunding and pumped or scooped into drums and sent to solvent recovery or incineration. Residual spillage should be cleaned up using absorbent materials such as sand. A licensed waste disposal company should place these materials into containers for solvent recovery or disposal.

13.1. Secondary notification

The Director of Chemicals Notification and Assessment must be notified in writing within 28 days by the notifier, other importer or manufacturer:

(1) Under subsection 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 subsection 64(2) of the Act:

- if any of the circumstances listed in the subsection arise.

The Director will then decide whether secondary notification is required.

No additional secondary notification conditions are stipulated.