File No PLC/359

23 February 2004

NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME (NICNAS)

FULL PUBLIC REPORT

Polymer in Rezimac HS 57-5737

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.

For the purposes of subsection 78(1) of the Act, this Full Public Report may be inspected at:

Library
National Occupational Health and Safety Commission
25 Constitution Avenue
CANBERRA ACT 2600
AUSTRALIA

To arrange an appointment contact the Librarian on TEL + 61 2 6279 1161 or + 61 2 6279 1163.

This Full Public Report is 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:

Street Address:	334 - 336 Illawarra Road MARRICKVILLE NSW 2204, AUSTRALIA.
Postal Address:	GPO Box 58, SYDNEY NSW 2001, AUSTRALIA.
TEL:	+ 61 2 8577 8800
FAX	+ 61 2 8577 8888.
Website:	www.nicnas.gov.au

Director
Chemicals Notification and Assessment

TABLE OF CONTENTS

FULL PUBLIC REPORT

Polymer in Rezimac HS 57-5737

1. APPLICANT AND NOTIFICATION DETAILS

APPLICANT(S)
DuPont (Australia) Limited. (ABN 59 000 716 469)
Level 16, 168 Walker Street
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:

- Chemical name
- Other names
- CAS number
- Molecular formula
- Structural formula
- Polymer constituents

VARIATION OF DATA REQUIREMENTS (SECTION 24 OF THE ACT)
A variation to the schedule of data requirements was claimed for the following:

- Water solubility
- Particle size distribution
- Melting Point/Boiling Point
- Density
- Flammability Limits
- Autoignition Temperature
- Explosive properties
- Reactivity

PREVIOUS NOTIFICATION IN AUSTRALIA BY APPLICANT(S)
None

NOTIFICATION IN OTHER COUNTRIES
None

2. IDENTITY OF CHEMICAL

MARKETING NAME(S)
Rezimac HS 57-5737

MOLECULAR WEIGHT (MW)
The Number Average Molecular Weight (NAMW) is > 1000.

3. COMPOSITION

PLC CRITERIA JUSTIFICATION

Criterion	*Criterion met (yes/no/not applicable)*

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	Yes
Low Concentrations of Residual Monomers	Yes
Not a Hazard 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	10-100	10-100	10-100	10-100	10-100

USE
Refinish primer coat

5. PROCESS AND RELEASE INFORMATION

5.1. Operation Description

The notified polymer will be imported as a component of the product 'Dupont Automotive 1K Paint', at a concentration of 20-50%, in 3.7 L Dangerous Goods rated steel containers. Following importation, the product will be stored in a Dangerous Goods approved warehouse before being transported to various spray-painting professionals Australia-wide.

The product containing the notified polymer requires no mixing with solvent prior to application. A measured volume is transferred directly into the spray gun reservoir and the primer containing the notified polymer is then applied by spray painters in spray booths.

Following application, spray equipment is carried out at a gun wash station, which uses recirculated solvent.

6. EXPOSURE INFORMATION

6.1. Summary of Environmental Exposure

The notified polymer will not be manufactured or reformulated in Australia. The notifier estimates that the majority of waste containing the notified polymer will be generated from overspray (20-50% of total paint produced) during spray painting operations. A small quantity of the notified polymer will be lost as residues in the import containers and from the cleaning of application equipment (up to 15% of import volume). Thus a maximum of 65% of that imported may need waste, or up to 65 tonnes per annum.

Most of this material will be disposed of to landfill, where due to its low water solubility it is expected to associate with the organic fraction of soils and sediments and be immobile, but to slowly degrade. .

6.2. Summary of Occupational Exposure

Exposure to the notified polymer will be via exposure to the product 'Dupont Automotive 1K Paint'', rather than direct exposure to the notified polymer itself.
Exposure to the notified polymer is not expected during the importation, warehousing or transportation of the product except in cases where the packaging is accidentally breached.
End-users of the product may be exposed to the 20-50% solution of notified polymer as 'Dupont

Automotive 1K Paint'' when opening containers, and during weighing and measuring of volumes prior use. Dermal exposure is expected to be the major route of exposure however ocular exposure may occur during accidental splashing.
Workers may be exposed to 20-50% solution of the notified polymer via the dermal, ocular and inhalation routes during spraying. The product is sprayed in a booth with an exhaust/filter system, and workers wear supplied air respirator or mask fitted with organic vapour cartridge, faceshield, gloves and protective suit.
Workers may be exposed to a dilute solution of the polymer via the dermal and ocular routes while cleaning and rinsing spray equipment using recirculated solvent.

6.3. Summary of Public Exposure

The product 'Dupont Automotive 1K Paint' is only sold to professional spray painters; therefore, the wet paint is not expected to come into contact with members of the public. The public may come into contact with the finished dried product on refinished automobiles, however, in this form, the notified polymer will bound in an inert matrix and as such will not be biologically available.

7. PHYSICAL AND CHEMICAL PROPERTIES

Appearance at 20°C and 101.3 kPa	Sticky solid
Melting Point/Glass Transition Temp	Not provided.
Density	Not provided. Expected to be greater than 1000 kg/m^3.
Water Solubility	7.1 mg/L at pH 4 <157 mg/L at pH 9 This was calculated using QSARs for simplified structures. The true water solubility of this hydrophobic polymer with a NAMW of >2000 would be expected to be much lower.
Dissociation Constant	The polymer may contain a small amount of carboxylic acid functional groups with an estimated pKa of 3.33 which would remain dissociated under the environmental pH range of 4-9.
Particle Size	Not applicable. Polymer is never isolated.
Reactivity	Stable under normal environmental conditions
Degradation Products	None expected.

8.2. Human Health Hazard Assessment

No toxicological data were submitted. The notified polymer meets the PLC criteria and can therefore be considered to be of low hazard. The MSDS for Rezimac HS

9. ENVIRONMENTAL HAZARDS

9.1. Ecotoxicology

No toxicological data were submitted.

10. RISK ASSESSMENT

10.1. Environment

The notified polymer in solid wastes resulting from spills and application of the paint will be disposed of in landfill or incinerated. As the coating physically degrades over time, any fragments, chips and flakes of the coating will be of little concern as they are expected to be chemically inert. At the end of their useful lives car parts coated with the polymer are likely to either be placed into landfill or recycled. Empty import drums and any residual polymer they contain will be disposed of to landfill or recycled. Wastes solvents containing the notified polymer generated from the cleaning of application equipment, spray guns etc. will be sent to solvent recycling firms to recover the solvent. The solid wastes generated from the reclamation

of solvents will be disposed either to landfill or incinerated.

Up to 65 tonnes per annum may be disposed of to landfill, where as a result of its expected low water solubility the notified polymer is expected to become associated with the soil matrix and slowly decompose. It is expected that the polymer adhering to paint cans and car parts will be incinerated during the recycling the steel. Incineration of the notified polymer is expected to give water vapour and oxides of carbon.

The polymer is not expected to cross biological membranes, due to its high molecular weight and expected low water solubility, and as such should not bioaccumulate.

10.2. Occupational health and safety

The notified polymer will be imported in 3.7 L Dangerous Goods approved steel cans. Workers involved in the importation, interim warehousing, and transportation to customer sites are unlikely to be exposed to the notified polymer except in the event of an accident where containers may be breached. Although release of the product is possible in the event of an accident, the notified polymer is packaged according to dangerous goods requirements. Such packaging is designed to contain contents in the event of an accident.

As a polymer of high molecular weight, inhalation exposure to spray mists or aerosols is not expected, except in the case of spray application. Dermal exposure is not expected to be significant as it is estimated that 1.0-1.5 L paint is required per car, or 0.1-0.2 L for touch-up applications. Exposure to significant amounts of the notified polymer is limited, however due to engineering controls and personal protective equipment worn by workers. Spraying takes place in a spray booth and workers are advised to wear impervious gloves, goggles, coveralls and respiratory protection.

The OHS risk presented by the notified polymer is expected to be low given the low hazard associated with the notified polymer, and the small amounts used per application. Additionally, the level of protection from exposure afforded by the standard protective measures will provide adequate protection from the polymer, which is likely to be less intrinsically toxic than most of the solvents and pigments and also some other paint resins.

After application the coating containing the notified polymer is cured into an inert matrix and is hence unavailable for 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 health 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 no significant concern to public health.

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.
- The use of the product containing the polymer should be in accordance with the NOHSC *National Guidance Material for Spray Painting* where appropriate.
- A copy of the MSDS should be easily accessible to employees.

If products and mixtures containing Polymer in Rezimac 57-5737 are classified as hazardous to health in accordance with the NOHSC *Approved Criteria for Classifying Hazardous,* workplace practices and control procedures consistent with provisions of State and Territory hazardous substances legislation must be in operation.

Environment

- The following control measures should be implemented by end users to minimise environmental exposure during use of the notified polymer:
  - Do not pour unwanted paint down the drain. Keep unwanted paint in sealed containers for disposal via special chemical wastes collections. Empty paint containers should be left open in a well ventilated area to dry out. When dry, recycle steel containers via steel can recycling programs. Disposal of empty paint containers via domestic recycling programs may differ between local authorities. Check with your local council first.

Disposal

- The waste notified polymer should be disposed of in landfill.

Emergency procedures

- Spills/release of the notified polymer should be handled as outlined in the MSDS, ie Dike around spilled material., cover spill with inert absorbent material and shovel into a container. Remove containers to a safe area and seal.

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.
- [list of circumstances]

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.