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**NATIONAL INDUSTRIAL CHEMICALS NOTIFICATION AND ASSESSMENT SCHEME
(NICNAS)**

FULL PUBLIC REPORT

RC49217

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**Director
Chemicals Notification and Assessment**

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FULL PUBLIC REPORT

RC49217

1. APPLICANT AND NOTIFICATION DETAILS

APPLICANT(S)

DuPont (Australia) Ltd (ABN: 59 000 716 469)
49-53 Newton Road
Wetherill Park NSW 2164

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 and Structural Formulae, Molecular Weight, Polymer Constituents, Use Details, and Manufacture/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

None known

2. IDENTITY OF CHEMICAL

MARKETING NAME(S)

RC49217

3. COMPOSITION

PLC CRITERIA JUSTIFICATION

| <i>Criterion</i> | <i>Criterion met (yes/no/not applicable)</i> |
|--|--|
| Molecular Weight Requirements | Yes |
| Functional Group Equivalent Weight (FGEW) Requirements | Yes |
| Low Charge Density | Yes |
| Approved Elements Only | Yes |
| No Substantial Degradability | Yes |
| Not 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

The notified polymer will not be manufactured in Australia. It will be imported into Australia as a 50% solution in solvent. It will be formulated into finished automotive paints at the notifier's site, prior to distribution to spray-painting and smash repair companies who will apply the paint by spray painting. Approximately 60% of the imported polymer solution will be used in automotive paint formulation for export market.

The finished automotive paint will contain <50% notified polymer.

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

| <i>Year</i> | <i>1</i> | <i>2</i> | <i>3</i> | <i>4</i> | <i>5</i> |
|---------------|----------|----------|----------|----------|----------|
| <i>Tonnes</i> | 30-100 | 30-100 | 30-100 | 30-100 | 30-100 |

USE

The notified chemical will be used as a component in automotive refinish paints.

5. PROCESS AND RELEASE INFORMATION

5.1. Operation Description

The notified polymer will be imported as a 50% solution in solvent contained in closed head 200L steel drums. It will be transported by road from the wharf to the notifier's warehouse, where it will be formulated into finished automotive paints. During formulation, the notified polymer will be manually weighed and then transferred to an automatic mixing tank. Once combined with other ingredients into the finished paint product, it will be semi automatically filled into 4L or 1L steel containers.

The packaged steel containers are then shipped to a warehouse for storage prior to shipping to spray painting and smash repair companies who will use the finished product to repair smashed automobiles. The paint products containing the notified polymer will be applied to motor vehicles in a spray booth by professional painters using a spray gun.

6. EXPOSURE INFORMATION

6.1. Summary of Environmental Exposure

Release to the environment during shipping, transport and warehousing will only occur through accidental spills or leaks of the drums or steel packaged containers. During formulation and packaging, spills are expected to be minimal. When spills occur, they will be contained by bunding, collected with absorbent material and sent to a licensed off site waste disposal centre.

Empty drums from import will be sent to drum recondition firms where any residuals are removed by flushing or burning so that the drum is clean for reuse. The waste from drum cleaning is treated by EPA protocol. Total waste from all sources is expected to be approximately 2% of the import volume.

Under normal use, losses of the notified polymer through over spray, mixing of chemicals and cleaning of plant equipment as well as losses from residues in containers have been estimated to be a maximum of 50%, which equates to a maximum of 100 tons per annum. Wastes from application will be hardened and disposed of to landfill.

The remainder of the notified polymer will be bound in the paint matrix and not be available for direct release to the environment. Disposal of the automobile may be through landfill or recycling, and the fate of the paint will be related to that of the automobile.

6.2. Summary of Occupational Exposure

Transport and warehousing workers may come into dermal and ocular contact with the notified polymer through accidental leaks and spillages of the drums and containers.

During formulation, workers will manually weigh and transfer the polymer solution to the mixing vessels. Workers will wear impermeable gloves, eye protection and coats. Exposure from the notified polymer to these workers can occur by either dermal or ocular routes, however significant exposure will be limited due to the workplace practices and personal protective equipment used.

Throughout end use, spray painters will come into contact with the notified polymer through dermal, inhalation and ocular routes. Occupational exposure, however, will be minimal as application is done in a ventilated spray booth with workers using breathing equipment. Air supplied breathing apparatus is used in conjunction with this product due to the presence of isocyanate. The use of the paint containing the polymer should be in accordance with the NOHSC *National Guidance Material for Spray Painting* (NOHSC, 1999). 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, pigments and paint resins present.

After application and once dried, the paint containing the notified polymer is cured into an inert matrix and the polymer is hence unavailable to exposure.

6.3. Summary of Public Exposure

The notified polymer is intended only for use in industry and therefore, will not be available to the public. Members of the public may come into contact with automobiles painted coated with paints containing the notified polymer. However, exposure will be negligible because the notified polymer is likely to be bound within a cured paint film.

7. PHYSICAL AND CHEMICAL PROPERTIES

The polymer is never isolated from solution and the physico-chemical properties described below are for the polymer solution containing 50% notified polymer, unless otherwise stated.

| | |
|---|--|
| Appearance at 20°C and 101.3 kPa | Clear semi-viscous liquid |
| Boiling Point | 125 - 190°C |
| Density | 1023 kg/m ³ |
| Water Solubility | The notified polymer is polyester made up of hydrophobic groups, with little polar functionality to confer water solubility. |
| Reactivity | Stable under normal environmental conditions. |
| Degradation Products | None known |

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.

9. ENVIRONMENTAL HAZARDS

9.1. Ecotoxicology

No toxicological data were submitted.

9.2. Environmental Hazard Assessment

While no data were provided on environmental effects, the use and properties of this polymer indicate very limited exposure to the aquatic environment.

The notified polymer is expected to be hydrolytically stable and not be readily biodegradable. Due to its hydrophobic nature, it is expected that the notified polymer in landfill will associate with sediments and organic phases of soil and sediments, and slowly degrade to simple carbon compounds. During automobile recycling, the polymer will be destroyed. Therefore, the notified polymer is considered to be of low hazard to the environment.

10. RISK ASSESSMENT

10.1. Environment

No aquatic exposure is anticipated during manufacture and end use of the notified polymer. It is envisaged that 2% waste would be generated from the manufacturing process. These wastes would be collected by licensed waste contractors and be incinerated or reduced to an insoluble polymer mass meeting EPA criteria. It is expected that practically all of the waste generated from end users (50 % as over spray) will be disposed of in approved landfills as inert solid waste. In landfill, the solid wastes will not be mobile and will degrade slowly and not pose a significant risk to the environment.

10.2. Occupational Health and Safety

The OHS risk presented by the notified polymer is expected to be low. The notified polymer may be present in formulations containing hazardous ingredients. If these formulations 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.

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 paint.

12. MATERIAL SAFETY DATA SHEET

12.1. 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.
 - For spray painting, engineering controls and personal protective equipment should be in accordance with the National Guidance Material for Spray Painting.

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.

Environment

- The following control measures should be implemented by paint manufacturers and applicators to minimise environmental exposure during use of the notified polymer:
 - Avoid release of the notified polymer to sewer. Manufacturing and paint application areas should be bunded.

Disposal

- The notified polymer should be disposed of to landfill or incinerated.
- Empty containers should be sent to local recycling or waste disposal facilities.

Emergency procedures

- Spills/release of the notified polymer should be handled by absorbing with sand and put into suitable container for 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.

13. BIBLIOGRAPHY

National Occupational Health and Safety Commission (1999) National Guidance Material for Spray Painting. Australian Government Publishing Service, Canberra.

