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

FULL PUBLIC REPORT

Notified Polymer in RCP-30219

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**Director
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FULL PUBLIC REPORT

Notified Polymer in RCP-30219

1. APPLICANT AND NOTIFICATION DETAILS

APPLICANT(S)

DuPont (Australia) Ltd (ABN: 59 000 716 469)
168 Walker Street
NORTH SYDNEY NSW 2060

NOTIFICATION CATEGORY

Self Assessment: Polymer of Low Concern

EXEMPT INFORMATION (SECTION 75 OF THE ACT)

Data items and details claimed exempt from publication:

Chemical Name, Other Names, Molecular and Structural Formulae, Molecular Weight, Polymer Constituents, Residual Monomers/Impurities, Use Details, Manufacture/Import Volume, Notification Made in Other Countries, Detailed Technical Function of Notified Polymer.

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.

2. IDENTITY OF CHEMICAL

MARKETING NAME(S)

Notified Polymer in RCP-30219

CAS NUMBER

None Allocated.

MOLECULAR WEIGHT (MW)

Number Average Molecular Weight (Mn) >1000

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 |
| 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. INTRODUCTION AND USE INFORMATION

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

The resin manufacturing of RCP-30219 will occur in the USA or Europe and will be imported into Australia as a < 50% component in a finished paint.

The imported paint product will arrive by sea freight in LCL containers packed in steel cans through the port of Sydney or Melbourne and transported from the wharf in container and stored in a local warehouse licensed to hold dangerous goods thence distributed to customers.

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> | 3-10 | 3-10 | 10 - 30 | 10 - 30 | 10 - 30 |

USE

The notified polymer will be used as a component of automotive paints for professional use.

5. PROCESS AND RELEASE INFORMATION

IDENTITY OF MANUFACTURER/RECIPIENTS

DuPont (Australia) Ltd
SYDNEY NSW

5.1. Operation Description

RCP-30219 will be imported as a component of DuPont Power Tint in a steel cans packed in boxes within a LCL sea freight container. The container will be transported from the wharf to warehouse site for storage and relabelling with NOHSC compliant labels. All storage warehouses are approved for storage of bulk Class 3 Flammable goods, and are located in bunded areas with layout and storage according to AS1940.

At the warehouse individual orders are re-aggregated paint into cartons with other paint types to be transported to the final destination; the spray painter/smash repairer. Product containing RCP-30219 may be sold singly or packed in cardboard cartons, each carton holding four, 0.94L, 1L, 3.785 L, 4 L cans.

End Use.

Spray-painters who are qualified, professional tradesmen mix the paint containing RCP-30219 as a component (part A) to be mixed with isocyanate catalyst (part B) according to the product recipe using a balance or measuring cylinder and mixing jar. After mixing, the paint is loaded into a spray gun and sprayed out onto the vehicle placed in a spray booth constructed and used to AS 4114.

After the refinishing is complete the spray gun and lines are emptied and any residual paint placed into a "paint waste" drum for recycling. The spray gun is then cleaned at an earthed recycled solvent wash station ready for the next use.

6. EXPOSURE INFORMATION

6.1. 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 containers. The overall risk is exceedingly low.

Exposure in vehicle refinishing:

Workers may also be exposed to the solution of the notified polymer via the dermal, ocular and inhalation routes during mixing and preparing product and spraying of the finished product. Workers prepare paint containing RCP30219 by measuring and mixing the part A and part B components with tinters. The design of the measuring-mixing equipment reduces the likelihood of dermal contact however during preparation and mixing workers should wear gloves to control dermal contact. Additionally the mixing area has fume extraction to reduce the concentration of vapours that may be inhaled.

The mixed paint product is sprayed in a spray-booth with an exhaust/filter system, and workers wear a supplied air respirator or mask fitted with an organic vapour cartridge, face-shield, gloves and protective suit conforming to AS and NZ standards as specified in the MSDS. Workers spray painting 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.

Throughout end use, spray painters may come into contact with the notified polymer through dermal, inhalation and ocular routes. The likelihood of exposure, however, will be minimal as application is done in a ventilated spray booth with strict controls of Personal Protective Equipment. Standard PPE consist of air supplied breathing apparatus is used in conjunction with the application of product containing RCP-30219 due to the necessity of isocyanate curing.

The use of the paint containing the polymer expected to be in accordance with the NOHSC National Guidance material for Spray Painting (NOHSC, 1999). The level of protection from exposure afforded by the standard control measures to protect against the isocyanate will minimise any exposure from the notified polymer.

Other essential PPE used will be impermeable gloves (butyl rubber) in accordance with ANZS2161, eye/face protection goggles in accordance with ANZS1336 and ANZS1337, supplied air respiratory protection in accordance with ANZS1716 and ANZS1715 and clothing in accordance with AS2919

When the paint containing the notified polymer has dried and cured and the notified polymer RCP-30219 will have chemically reacted, and transformed to a new species as a paint film, which is unavailable for exposure to humans or the environment.

6.2. Summary of Public Exposure

The notified polymer will not be available to the public and will be sold to smash repair businesses for use by technically qualified spray painters. Members of the public will not come into contact with the notified polymer until it has completely reacted, cross-linked and transformed into a fully integrated constituent of a non-reactive paint film covering the surface of the vehicle.

6.3. Summary of Environmental Exposure

6.3.1. Environmental Release

Local Spray painting

- Waste attached to disposed paint container

be wasted annually in the residual paint in end-user containers. Traditionally, used paint cans have been scraped clean, crushed and sent to landfill. However due to a Coating Care program being extended by the Packaging Covenant to steel cans used by industry this residue may also be incinerated in a steel furnace.

- Residues from the spray painting process

Over spray that misses the item being sprayed will be between 20% and 50%. Either a water curtain will capture over spray or spray booth/room filters and directed to solvent recycling waste or landfill as dried insoluble polymer that meets NSW state EPA tests for water extra able fractions. In a worst case up to 50% of the notified polymer will be lost due to over spray.

. A solvent recycling company will dispose of the RCP-30219 residue contained in the used wash solvent by complying with N.S.W. EPA protocol allowing no water-soluble fractions of polymer remain in distillation residuals when disposed to landfill or use as a asphalt tackifier.

Note: 50% over spray is a maximum amount; normally over spray would be less than 20% for an experienced tradesman

- Residues of paint in mixing container

Residual paint remaining in the mixing container is washed out with a solvent wash. This accounts for approximately 5% of the imported polymer.

- Residues from Cleaning Spray Equipment

After refinishing is complete the spray gun and lines will be emptied and any residual paint will be placed into a waste paint drum for recycling. The spray gun and lines are then washed with recycled solvent with the resultant effluent going to solvent recovery. Approximately 5% of the imported notified polymer would be lost in this way.

Hence the Maximum total amount of RCP-30219 resin released during use is:

$5\%_{\text{container}} + 50\%_{\text{over spray}} + 5\%_{\text{mixing}} + 5\%_{\text{cleaning}} = 65\%$ used in Australian consumed products.

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 tins from import will be ideally recycled and any residues will be destroyed in the steel furnace.

6.3.2. Environmental Fate

The notified polymer conforms to a polymer of low concern and is expected to be hydrolytically stable and not readily biodegradable. Due to its high molecular weight and cross linking with isocyanate polymers is expected that the notified polymer will be stable in landfill and if released 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 in the steel furnace.

7. PHYSICAL AND CHEMICAL PROPERTIES

Physico-chemical properties for the notified polymer are unknown. Those listed below are for the imported polymer solution: RCP-30219

| | |
|--|---|
| Appearance at 20°C and 101.3 kPa | Semi-viscous liquid |
| Melting Point/Glass Transition Temp | 138 - 192°C |
| Density | 1.00 kg/m ³ |
| Water Solubility | Due to the hydrophobic nature of the notified polymer and high molecular weight, water solubility is expected to be low |
| Dissociation Constant | Stable under normal environmental conditions. |
| Reactivity | Stable under normal environmental conditions |
| Degradation Products | None under normal conditions of use. In case of fire the notified polymer is expected to degrade to CO, CO ₂ and H ₂ O. |
| Flash Point | -22.8 – 37.8°C |
| Auto ignition temperature | 515°C |
| Flammability Limit LEL | 1.1 |
| Flammability Limit UEL | 11.5 |

7.1. Comments

The polymer is never isolated from solution and the data above is for the solution polymer RCP-30219.

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

Poly non-ionic polymers with NAMW > 1000 are of low concern to the aquatic compartment

10. RISK ASSESSMENT

10.1. Environment

The notified polymer meets the PLC criteria and is, therefore, expected to be of low environmental hazard.

The polymer is hydrophobic with NAMW >1,000 and if released would be expected to associate with sediments and the organic fraction of the soil partition. The use pattern is highly diffuse within cities and towns.

No aquatic exposure is anticipated during manufacture and end use of the notified polymer. It is envisaged that a maximum of 5% waste RCP-30219 may be released to the environment attached to the container if not properly treated prior to disposal.

All other spray painting wastes are collected by licensed waste contractors and will be either incinerated or reduced to an insoluble polymer mass meeting EPA criteria for no measurable water extractable fractions then used as a rubberiser and tackifier in road base or land filled.

It is expected that all of the waste generated from end users as over spray) will be solidified and disposed of in approved landfills as inert solid waste by solvent recyclers to state EPA specifications into road base. In landfill, the solid wastes will not be mobile and will degrade slowly and not pose a significant risk to the environment.

The environment risk presented by the notified polymer is expected to be low based on the low hazard and aquatic exposure.

10.2. Occupational Health and Safety

The OHS risk presented by the notified polymer is expected to be low, based on the low hazard of the notified polymer. Combined with low exposure and use of engineering controls and personal protective equipment workers will be well protected from all hazardous ingredients including isocyanates and resulting in a high level of protection from the notified polymer in RCP-3019. The notified polymer may be present in formulations containing other 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 the provisions of State and Territory hazardous substances legislation must be in operations.

10.3. Public Health

The notified polymer will not be sold to be public, being used by professional spray painters in controlled industrial setting. Once the polymer is applied and cured it will be contained in an inert matrix, and hence 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 in the notification statement.

11.2.2. Public health

There is Negligible Concern to public health when used in the proposed manner.

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 or work practices 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.

- Personal protective equipment required during formulation are
 - Eye protection (safety glasses or goggles)
 - Impermeable gloves
 - Industrial clothing and footwear
 - Breathing Protection
- 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 the notifier to minimise environmental exposure during formulation of the notified polymer:
 - Bunding
- The following control measures should be implemented by end users (spray painters) to minimise environmental exposure during use of the notified polymer:
 - Exhaust ventilation with filter

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. Contaminated containers can be re-used after cleaning.

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.