

File No PLC/768

May 2008

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

FULL PUBLIC REPORT

Resin 429

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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FULL PUBLIC REPORT**Resin 429****1. APPLICANT AND NOTIFICATION DETAILS**

APPLICANT(S)

DuPont (Australia) Ltd (ABN 59000716469) of 168 Walker Street, North Sydney, NSW 2060

NOTIFICATION CATEGORY

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, 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

USA (2006), Korea (2005), Canada (2007)

2. IDENTITY OF CHEMICAL

MARKETING NAME(S)

Resin 429

MOLECULAR WEIGHT (MW)

Number Average Molecular Weight (Mn) >1000 Da

REACTIVE FUNCTIONAL GROUPS

The notified polymer contains only low concern functional groups.

3. PLC CRITERIA JUSTIFICATION*Criterion*

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

Criterion met

Yes
 Yes
 Yes
 Yes
 Yes
 Yes
 Yes

The notified polymer meets the PLC criteria.

4. PHYSICAL AND CHEMICAL PROPERTIES

Appearance at 20°C and 101.3 kPa:	Opaque white solid
Melting Point/Glass Transition Temp	Not determined, as it cannot be isolated from solution.
Density	1041 kg/m ³ at 20°C
Water Solubility	4%, 7.2% and 100% at pH 2, 7 and 9, respectively. Flask Method used complying with OECD TG 120 by TOC content analysis.
Dissociation Constant	Not tested. Contains anionic groups which are expected to have pKa values of 3-5.
Particle Size	Not applicable.
Reactivity	Stable under normal environmental conditions.
Degradation Products	The ultimate degradation products will be CO ₂ , CO, H ₂ O, and NO _x .

5. INTRODUCTION AND USE INFORMATION

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>
Tonnes	1-3	1-3	1-3	3-10	10-30

USE

The notified polymer will be used as a component of car refinish paints to protect exterior surfaces of cars.

Mode of Introduction and Uses

The notified polymer will not be manufactured in Australia. It will be imported as a component of finished car refinish paints (namely 'colour coat') at a concentration of <15%.

The imported finished products will be transported to DuPont warehouses for storage before being delivered to end users. At car repair shops, spray painters will decant the colour coat from larger cans (2L or 4L steel can) into 250 mL or 500 mL spray gun pots typically for spraying vehicles for small smash repair jobs. Following masking the adjacent areas, the spray painter will manually spray the colour coat to the prepared surface. Once it is dried, a clear coat that does not contain the notified polymer will be applied. The spray gun will be then emptied into a used paint drum for reclaim and manually cleaned using clean water.

6. HUMAN HEALTH IMPLICATIONS

Hazard Characterisation

No toxicological data were submitted. The notified polymer meets the PLC criteria and is therefore assumed to be of low hazard.

Occupational Health and Safety Risk Assessment

Workers may be exposed to the notified polymer via dermal, ocular and inhalation during end uses, especially during manual loading, spraying and cleaning processes. However, the potential exposure is expected to be minimal due to use of engineering controls and personal protective equipment (PPE) that are required for handling hazardous substances such as isocyanates and solvents in the clear coat. The PPE include skin and eye protection and respirators. Therefore, the risk to workers is considered to be low as the polymer is assumed to be of low hazard.

Public Health Risk Assessment

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 polymer 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.

7. ENVIRONMENTAL IMPLICATIONS

Hazard Characterisation

No ecotoxicological data were submitted. Anionic polymers are known to be moderately toxic to algae. The mode of toxic action is over-chelation of nutrient elements needed by algae for growth. The highest toxicity is when the acid is on alternating carbons of the polymer backbone. Whether this applies to the notified polymer is unclear. However, the toxicity to algae is likely to be further reduced due to the presence of calcium ions, which will bind to the functional groups.

Environmental Risk Assessment

There is potential for up to 65% per annum of the notified polymer to be released into the environment as a consequence of overspray, container residues and equipment washing. However, most of this will be collected for use in asphalt or sent to landfill.

The notified polymer contained in vehicle coatings will be finally decomposed into water and oxides of carbon and nitrogen during the recycling process of the metal substrate.

The notified polymer is not considered to pose an unacceptable risk to the environment, as PLCs are assumed to have no significant toxicity and, therefore, is not considered to represent environmental concerns.

8. CONCLUSIONS AND RECOMMENDATIONS

Human health risk assessment

Under the conditions of the occupational settings described and when used in the proposed manner, the notified polymer is not considered to pose an unacceptable risk to workers and the public.

Environmental risk assessment

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

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.

Environment

- The notified polymer should be disposed of to landfill.
- Spills and/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 component of car refinish paints, or is likely to change significantly;
 - the amount of notified polymer being introduced has increased from 30 tonnes, or is likely to increase, significantly;
 - if 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 notified polymer and 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.