

File No SAPLC/50

October 2006

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

**FULL PUBLIC REPORT**

**Polymer in D8122 Ceramiclear**

This Self Assessment has been compiled by the applicant and adopted by NICNAS 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), administered by the Department of Health and Ageing and the Department of the Environment and Heritage has screened this assessment report. The data supporting this assessment will be subject to audit by NICNAS.

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**Director  
NICNAS**

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**FULL PUBLIC REPORT****Polymer in D8122 Ceramiclear****1. APPLICANT AND NOTIFICATION DETAILS****Applicant(s)**

PPG Industries Australia Pty Ltd (ABN No.:82 055 500 939) of Mc Naughton Road , Clayton , Victoria 3168

**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, Molecular and Structural Formulae, Molecular Weight, Polymer Constituents, Residual Monomers/Impurities, Use Details, Manufacture/Import Volume, and Site of Use.

**PREVIOUS NOTIFICATION IN AUSTRALIA BY APPLICANT(S)**

No

**NOTIFICATION IN OTHER COUNTRIES**

No

**2. IDENTITY OF CHEMICAL****MARKETING NAME(S)**

Polymer in D8122 Ceramiclear

Polymer in HC-63-5502

**3. 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. PHYSICAL AND CHEMICAL PROPERTIES**

**Appearance at 20°C and 101.3 kPa**  
**Melting Point/Glass Transition Temp**  
**Density**  
**Water Solubility**

Liquid (based on product)  
 Not applicable as solution  
 1.043 kg/litre at 25°C (based on product)  
 Practically insoluble in water due to the low level of polar functionality  
 The polymer contains a small quantity of anionic groups, which are expected to show

<b>Particle Size</b>	typical acidity.
<b>Reactivity</b>	Not applicable as polymer solution
<b>Degradation Products</b>	Low reactivity
	Small amounts of monomers and oxides of carbon produced on combustion

Comments Water solubility testing has not been conducted. The Polymer is never isolated from solution. The imported polymer in solution is practically insoluble in water due to the lack of polar functionality except for terminal polymer groups.

## 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>
<i>Tonnes</i>	< 1	< 1	< 1	1-3	1-3

### USE AND MODE OF INTRODUCTION AND DISPOSAL

#### Mode of Introduction

The notified polymer in D8122 Ceramiclear will be imported as a component of a two-part automotive refinish coating supplied, in 1 litre screw capped steel containers. The product will be stored in a bonded warehouse to await distribution to customers.

#### Reformulation/manufacture processes

No reformulation or manufacture will occur in Australia.

#### Use

End-use will occur at automobile repair shops. Clearcoat solution containing the notified polymer is blended with the hardener component and applied to vehicles using a spray gun in a spraybooth. The concentration of the notified polymer in the final spray after mixing is < 30%. The notified polymer is used as a scratch resistant coating in automotive applications.

## 6. HUMAN HEALTH IMPLICATIONS

### 6.1. Exposure Assessment

#### OCCUPATIONAL EXPOSURE

During transport and storage of the imported product exposure to the notified polymer is not expected except in cases when the packaging is accidentally breached.

During mixing of the clearcoat and hardener, workers may be exposed to the notified polymer. Engineering controls and personal protective equipment worn by workers should minimise any exposure risk to workers at this concentration.

End users of the product may be exposed to the notified polymer via dermal, ocular or inhalation routes during spraying of the diluted basecoat mixture. The product is supplied to professionals. They apply the spray within a booth with an exhaust/filter system and workers wear supplied air respirator or mask fitted with organic vapour cartridge, face shield, gloves and protective suit.

Workers may be exposed to a dilute solution via dermal and ocular routes while cleaning and rinsing spray equipment using recirculated solvent.

#### PUBLIC EXPOSURE

The polymer solution is only sold to professional spray painters; therefore the solution 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 be bound in an inert matrix and as such will not be biologically active.

**6.2. Toxicological Hazard Characterisation**

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

**6.3. Human Health Risk Assessment****OCCUPATIONAL HEALTH AND SAFETY**

The OHS risk presented by the notified polymer is expected to be low, based on low hazard associated with the notified polymer. Local ventilation is used during application and the product will be handled by professional spray painters

**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 polymer will be trapped within a coating and will not be bioavailable. Therefore, the risk to public health from exposure to the notified polymer is considered low.

**7. ENVIRONMENTAL IMPLICATIONS****7.1. Exposure Assessment****ENVIRONMENTAL RELEASE**

Loss of containment during storage would be controlled by bunding within the warehouse.

The notified polymer is used as a scratch resistant coating in automotive applications. The process used by the paint end user would result in waste generated from overspray from the application process, cleaning of the application equipment and empty paint containers.

The notified polymer does not represent an emission hazard to the atmosphere as all paint overspray is trapped in the spraybooth or on masking material. The transfer efficiency as a result of spray application is approximately 30%. Of the paint mixed for actual application, 70% will be captured as overspray and collected within the spray booth, throughout its filtering system or on masking materials such as newspaper and kraft.

Cleaning of the application equipment will generate waste which will be collected and disposed of in the same manner as waste water from the spraybooth, involving licensed waste disposal contractors. The waste is then treated and sent to trade waste landfill.

Waste generated as a result of a small amount of coating remaining in the containers after use represent about 1% of the container contents. This will dry to form a non-leachable solid and will be disposed of as solid landfill.

**ENVIRONMENTAL FATE**

The waste remaining in the empty import canisters and that generated in overspray and cleaning equipment and spills will ultimately be disposed of to landfill. The polymer is potentially hydrolysable, however this is unlikely under standard environmental conditions. The notified polymer is likely to slowly degrade by biotic and abiotic process. Leaching of the polymer from landfill is unlikely given the low solubility of the substance. The polymer is not expected to cross biological membranes due to the low solubility and high molecular weight, and should not bioaccumulate.

## 7.2. Environmental Hazard Characterisation

No ecotoxicological data were submitted.

PLCs without significant ionic functionality are of low concern to the aquatic environment.

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 anionic group is on alternating carbons on the polymer backbone. This is unlikely to apply to the notified polymer. 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.

## 7.3. Environmental Risk Assessment

A worst case scenario would be for 70% of the polymer to be wasted; however more realistically 50% is likely to be wasted. This would result in up to 1.5 tonnes per annum of waste notified polymer being generated from use as a result of incidental spills, equipment cleaning, overspray and residues in containers. The majority of this waste will be sent to landfill for disposal. In landfill, the notified polymer in solid wastes is expected to be immobile and eventually will degrade through biotic and abiotic processes. Consequently, there should be no significant risk to the environment

Spills of notified polymer to land are expected to bind to soil and should not be mobile or affect groundwater due to very low water solubility. Spills of notified polymer to waters are not expected to dissolve due to the lack of water solubility and thus the product is expected to disperse or to settle to sediment.

Most of the notified polymer used in automotive finishes will eventually be incorporated in metal recycling programs or sent to landfill for disposal following its life cycle. During reclamation, the notified polymer would be destroyed in furnaces and converted to water vapour and oxides of carbon.

## 8. CONCLUSIONS

### 8.1. Level of Concern for Occupational Health and Safety

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

### 8.2. Level of Concern for Public Health

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

### 8.3. Level of Concern for the Environment

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

## 9. MATERIAL SAFETY DATA SHEET

### 9.1. 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.

## 10. 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.

- In the interest of occupational health and safety, the following guidelines and precautions should be observed for use of the notified polymer as a component of paint products:
  - Adequate training for staff in handling paint products, including enforcing the adherence of industrial spray painters to the NOHSC *National Guidance Material for Spray Painting*;
  - Implementation of general health surveillance and monitoring programs as required.
- 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 customers to minimise environmental exposure during use of the notified polymer:
  - Bunding
  - 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.

#### Storage

- The following precautions should be taken by the notifiers regarding storage of the notified polymer:
  - bunding

#### Emergency procedures

- Spills/release of the notified polymer should be handled by absorbing with sand and put into suitable containers for disposal. Contaminated containers can be reused after cleaning.
- Do not flush the product containing the notified polymer into surface water or sewer system.

### 10.1. 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.