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

**FULL PUBLIC REPORT**

**Polymer in RC-96-8531**

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) 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**

## PLC Self Assessment

### Polymer in RC-96-8531

#### 1. APPLICANT AND NOTIFICATION DETAILS

**APPLICANT**

PPG Industries Australia Pty Ltd (ABN 82 055 500 939)  
McNaughton Road Clayton VIC 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, Other Names, Molecular and Structural Formulae, Molecular Weight, Polymer Constituents, Residual Monomers/Impurities, Use Details, Manufacture/Import Volume

#### 2. IDENTITY OF CHEMICAL

**MARKETING NAME(S)**

Acrylic polyol solution RC-96-8531

**MOLECULAR WEIGHT (MW)**

Number Average Molecular Weight (NAMW) > 1000

The notified polymer contains only low concern functional groups.

#### 3. PLC CRITERIA JUSTIFICATION

<i>Criterion</i>	<i>Criterion met</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	N/A
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**

Liquid (based on product)  
Not applicable as a solution  
1000 kg/m<sup>3</sup> at 25°C

**Water Solubility**

Not known – expected to be insoluble due to high molecular weight and low carboxy functionality.

**Dissociation Constant**  
**Reactivity**

Refer to comments section  
Stable under normal environmental conditions

**Degradation Products**

Small amounts of monomers and oxides of carbon produced on combustion.

**Comments**

The residual carboxy functional groups are not expected to become cationic in the aquatic environment due to the molecular weight of the polymer and the small number of functional groups. Furthermore the polymer is unlikely to be released to the aquatic environment during the normal course of use as it is converted into an inert coating of very high molecular weight during the curing process.

**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>	0.3	0.4	0.4	0.4	0.4

## USE AND MODE OF INTRODUCTION AND DISPOSAL

**Mode of Introduction**

The notified polymer will be imported as a 50 – 70% solution in organic solvent, contained in 180 L steel drums. It will be imported via Melbourne Docks and stored at the notifier's warehouse before being reformulated. It will then be transported by truck in 5 litre containers to customer sites for mixing and application.

**Reformulation/manufacture processes**

Reformulation will occur at the notifier's plant at Clayton.

The notified polymer will be poured from 180 L drums into 500 L capacity mixing tanks. Other batch ingredients will be added and mixing will occur at room temperature. The final product 'clearcoat' containing 20% notified polymer will be piped to 5 L steel cans.

At the customer's factory, the paint (which is the clearcoat component) will be mixed prior to application with a hardener and a solvent component and applied by spray painting. The final applied coating contains 14% notified polymer.

**Use**

The notified polymer acts as a binder and will be used in a clearcoat coating for industrial curtains. The coating will be applied by a spray gun and will be used by industrial curtain manufacturing companies only. The coating will not be available to the general public.

**6. HUMAN HEALTH IMPLICATIONS****6.1. Exposure Assessment**

## 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 reformulation, workers will manually weigh and transfer the polymer solution (< 70% concentration) to the mixing pots. Workers will wear impermeable gloves, eye protection and overalls. 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, localised exhaust extraction systems and personal protective equipment used.

Throughout end use, spray painters will come into contact with the notified polymer through dermal, inhalation and ocular routes. The risk of exposure, however, will be minimal as the spray paint is applied in a ventilated spray booth by workers using protective equipment.

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.

**PUBLIC EXPOSURE**

The notified polymer will not be sold to the public. The public may come into contact with the finished and dried product on industrial curtains (ie. sides of transport vehicles). However in this form the notified polymer will be bound in an inert matrix and as such, will not be biologically active and available for exposure.

**6.2. Toxicological Hazard Characterisation**

No toxicological data were submitted. The notified polymer meets the PLC criteria and is therefore assumed 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 the assumed low hazard of the notified polymer as well as the engineering controls and personal protective equipment used by workers to minimise exposure.

**PUBLIC HEALTH**

The assumed low hazard of the notified polymer translates to a low risk to the public. In addition, the notified polymer will not be sold to the public, only being used by trained spray painters in industrial curtain manufacturing sites. Once the polymer is applied and cured it will be contained in an inert matrix, and hence will not be bioavailable. Risk to the public is considered low.

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

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 reconditioners. Total waste from all sources is expected to be approximately 2% of the import volume.

Under normal use procedures, losses of the notified polymer through overspray, mixing of components and cleaning of equipment as well as losses from residues in containers have been estimated to be a maximum of 70% which equates to a maximum of 0.3 tonnes per annum. Waste from application will be hardened and disposed of to landfill.

**ENVIRONMENTAL FATE**

The notified polymer is expected to slowly degrade *in situ* following disposal to landfill, based on its very low water solubility and stable structure.

**7.2. Environmental Hazard Characterisation**

No ecotoxicological data were submitted. PLCs without significant ionic functionality are of low concern to the aquatic environment.

**7.3. Environmental Risk Assessment**

No aquatic exposure is anticipated during end use of the notified polymer. It is expected that practically all of the waste generated from end users (65% as overspray) 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.

## 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 notified 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.

- Use of spray paints containing the notified chemical should be carried out in accordance with the Safework Australia *National Guidance Material for Spray Painting* [NOHSC (1999b)] or relevant State and Territory Codes of Practice.
- 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 customer to minimise environmental exposure during (manufacture, formulation, use) of the notified polymer:
  - *Bunding*
  - *Exhaust ventilation with filter*

#### Disposal

- The notified polymer should be disposed of to landfill
- 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. 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 coatings](#), or is likely to change significantly;
  - the amount of notified polymer being introduced has increased, or is likely to increase, significantly;
  - [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.