

File No PLC/753

February 2008

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

**FULL PUBLIC REPORT**

**Polymer in Uralac AN637**

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****Polymer in Uralac AN637****1. APPLICANT AND NOTIFICATION DETAILS**

## APPLICANT

PPG Industries Australia Pty Ltd (ABN 055 500 939)  
McNaughton Road  
Clayton VIC 3168

## NOTIFICATION CATEGORY

Polymer of Low Concern

## EXEMPT INFORMATION (SECTION 75 OF THE ACT)

Data items and details claimed exempt from publication: Chemical Name, Other Name, CAS Number, Molecular and Structural Formulae, Molecular Weight, Polymer Constituents, Residual Monomers/Impurities, Use Details, Manufacture/Import Volume, and Site of Manufacture/Reformulation

## 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

**2. IDENTITY OF CHEMICAL**

## MARKETING NAME

Uralac AN637 (< 70% notified polymer)

## MOLECULAR WEIGHT (MW)

Number Average Molecular Weight (Mn) >1,000 Da

## Reactive Functional Groups

The notified polymer contains only low concern functional groups.

**3. PLC CRITERIA JUSTIFICATION**

Criterion	Criterion met
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: The notified polymer was never isolated from solution and will be imported as a component of a yellow, liquid resin solution.

Glass Transition Temp	15°C This value is for the resin solution containing < 70% notified polymer.
Density	1,040 kg/m <sup>3</sup> at 23°C This value is for the resin solution containing < 70% notified polymer.
Water Solubility	< 1 mg/L at 20°C Estimated, which is consistent with the notified polymer's largely hydrophobic structure.
Dissociation Constant	pKa = 15 Based on the presence of alcohol functionality.
Reactivity	While the notified polymer contains hydrolysable functionality, it is expected to be stable under normal environmental conditions and pH range of 4-9.
Degradation Products	None under normal conditions of use.

#### 5. INTRODUCTION AND USE INFORMATION

##### Maximum Introduction Volume of Notified Chemical (100%) Over Next 5 Years

Year	1	2	3	4	5
Tonnes	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3	0.1-0.3

##### Use

The notified polymer is a component of can coating formulation.

There will be no manufacture or reformulation done in Australia. The coating solution will be transferred to a reservoir, which feeds onto transfer rollers to apply the coatings formulation to the exterior of cans; any residual coating formulation remaining on the roller is removed by scraper and returned into the reservoir via a drip tray for reuse. After the application, the coated article is fed into a multi-zone oven, where heat dries and cures the coating prior to distribution to the manufacturing site.

##### Mode of Introduction and Disposal

The coating formulation containing the notified polymer (at an approximate concentration of < 5% w/w) will be imported in 30 kg steel pails. From the Melbourne port, the pails will be transported by road to the PPG Warehouse in Clayton, Victoria.

#### 6. HUMAN HEALTH IMPLICATIONS

##### Hazard Characterisation

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

##### Occupational Health and Safety Risk Assessment

Dermal, ocular and/or inhalation exposure from the formulation containing the notified polymer may potentially occur during the roller coating of cans, connection and disconnection of hoses, and during the cleaning and maintenance of the equipment. However, exposure to significant amounts of the notified polymer is limited because of the fully automated processes such as an effective fume extraction system, the low concentration in the formulation, and personal protective equipment (PPE) worn by workers.

Overall, the OHS risk presented by the notified polymer is expected to be low, based on the minimal exposure to workers and the low intrinsic hazard of the polymer.

##### Public Health Risk Assessment

The notified polymer will not be sold to the public except in the form of finished articles. There is potential for extensive public exposure to articles such as cans and tubes. However, the notified polymer will be cross-linked onto the coated article to form an inert rigid can coating and is, thus, unavailable for exposure. Therefore, the risk

to public health will be negligible because the notified polymer is of low hazard, is present at low concentrations, and is cured onto the product.

## 7. ENVIRONMENTAL IMPLICATIONS

### Hazard Characterisation

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

### Environmental Risk Assessment

Roller application is very efficient (approximately 90%) with any coating not applied being retained and recycled or going through a solvent recovery plant. The solids from this process are incinerated or sent to landfill. Equipment cleaning and container residues will also account for some release of the notified polymer, which will be handled in the same manner as the application excess. It is estimated by the notifier that up to 10% per annum will be disposed of during coatings application and equipment cleaning and up to 1% per annum of the notified polymer will be disposed of during drum cleaning.

Ultimately the final product to which the coating will be applied will either be recycled or go to landfill. At this time the notified polymer will be an inert matrix and will not leach out if placed in landfill. If the containers are recycled the coatings will be removed and collected in sludge/solid and will go to landfill or be incinerated. Water and oxides of carbon will be generated when the polymer is incinerated.

Minor quantities of the notified polymer will be disposed of to landfill across Australia. Due to its expected low water solubility, molecular weight and nature, any polymer released is likely to adhere to organic material, sediment and soil. Overtime the polymer is expected to undergo biotic and abiotic degradation.

Given the low and diffuse environmental release, and expected low ecotoxicity, the proposed use is not expected to pose an unacceptable risk to the environment.

## 8. CONCLUSIONS AND RECOMMENDATIONS

### Human health risk assessment

Under the conditions of the occupational settings described, the risk to workers is considered to be acceptable.

When used in the proposed manner the risk to the public is considered to be acceptable.

### Environmental risk assessment

The chemical is not considered to pose a risk to the environment based on its 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 Australia/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.

#### Disposal

- The notified polymer should be disposed of to landfill.

#### Storage

- The following precautions should be taken by workers regarding storage of the notified polymer:
  - Store in a segregated and approved area.
  - Store in original container protected from direct sunlight in a dry, cool and well-ventilated area, away from incompatible materials (oxidising substances, strong acids, strong bases).

#### Emergency procedures

- 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 chemical 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 chemical, have post-assessment regulatory obligations to notify NICNAS when any of these circumstances change. These obligations apply even when the notified chemical 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(2) of the Act; if
  - the function or use of the chemical has changed from component of a can coating formulation, or is likely to change significantly;
  - the amount of chemical being introduced has increased from up to 300 kg, or is likely to increase, significantly;
  - if the chemical 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 products containing the notified chemical provided by the notifier were reviewed by NICNAS. The accuracy of the information on the MSDS remains the responsibility of the applicant.

## 9. BIBLIOGRAPHY

NOHSC (2004) *Approved Criteria for Classifying Hazardous Substances*, 3<sup>rd</sup> edition [NOHSC:1008(2004)]. National Occupational Health and Safety Commission, Canberra, AusInfo.